

INTERNATIONAL COURT OF JUSTICE

**CASE CONCERNING
APPLICATION OF THE INTERNATIONAL CONVENTION FOR THE SUPPRESSION
OF THE FINANCING OF TERRORISM AND OF THE INTERNATIONAL CONVENTION
ON THE ELIMINATION OF ALL FORMS OF RACIAL DISCRIMINATION**

(UKRAINE V. RUSSIAN FEDERATION)

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Annex 491

Ove Dullum, The Rocket Artillery Reference Book, Norwegian Defence Research Establishment
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The Rocket Artillery Reference Book

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English Summary

This report contains a general overview of the current state of rocket artillery. Its aim is to give a complete picture of the technology, capacity and distribution of these types of weapon.

Although the principles of rocket propulsion have been known for centuries, the concept of rocket artillery, as it is known today, was introduced during The Second World War. Since then its popularity and distribution has steadily increased, and it is currently a part of the inventory of more than one hundred national armies. In addition, non-state armed units have also acquired this capacity, and have used it on several occasions during the last decade. This use has also included the application of improvised rockets based on readily available components, and used in a mode where the precision and the accuracy of the delivery have been compromised. This development is a result of the increasing tendency towards asymmetric warfare, where direct exchange of fire in a regular battle is of secondary importance.

Herein, rocket artillery is defined as rockets fired in an indirect mode and with a capability to engage targets at less than 100 km range, but not excluding systems capable of reaching several hundred kilometres. However, the class commonly known as *short range ballistic missiles* is not included here. With these limitations, rocket artillery includes systems of around 50 mm calibre with a range of a few kilometres and a load of a few hundred grams of explosives up to large systems that may contain more than 100 kg of explosives.

The report discusses several technological aspects including construction, ballistics, accuracy of delivery, use, and the effect of the warhead. Some examples of use and its effect on a given target are presented. This target is chosen to represent a typical target in the context of defence of camps against such ordnance.

Serving the purpose of a reference document, a high number of rocket artillery systems are briefly described. Systems that are obsolete or that never have matured beyond the prototype level have not been included.

Norwegian summary

Denne rapporten gir en generell oversikt over rakettartilleriet slik det er i dag. Formålet er å gi et fullstendig bilde av teknologi, kapasitet og utbredelse av denne typen våpen.

Selv om prinsippene for rakettdrift har vært kjent i århundrer, ble rakettartilleri først introdusert under andre verdenskrig. Siden den gang har dets popularitet og utbredelse stadig øket, og det er pr i dag en del av inventaret til mer en ett hundre nasjonale hærer. I tillegg har ikke-statlige aktører også skaffet seg denne kapasiteten, og tatt den i bruk flere anledninger i det siste tiåret. Denne bruken har også omfattet bruk av såkalte improviserte raketter som er basert på bruk av allment tilgjengelige komponenter, og brukt i en sammenheng hvor presisjon og nøyaktighet av ildgivninger er av underordnet betydning. Denne utviklingen er et resultat av den økende tendensen til asymmetrisk krigføring, hvor direkte utveksling av ild i regulære slag ikke er vanlig.

I denne rapporten er rakettartilleri definert som raketter som fyres i en indirekte modus og som er i stand til nå mål som ligger på mindre enn 100 km avstand, men uten å ekskludere systemer med lenger rekkevidde. Den klassen som omtales som ballistiske kortdistansemisseriler (*short range ballistic missiles*) er ikke tatt med her. Med disse begrensningene, vil rakettartilleri omfatte systemer fra ca 50 mm kaliber med noen hundre gram sprengstoff og med noen få kilometers rekkevidde opp til store systemer som er i stand til å nå flere hundre kilometer med en sprengladning på over 100 kg.

Rapporten diskuterer flere teknologiske aspekter inkludert konstruksjon, ballistikk, leveringsnøyaktighet, bruk, og virkningen i målet. Eksempler på bruk mot et gitt mål er vist. Målet er valgt som en representant for et typisk mål i sammenheng med beskyttelse av leire (camper) mot slik våpen.

Ettersom denne rapporten skal være et referanseskrift, så er et større antall systemer gitt en kort beskrivelse. Systemer som er avleggs, eller som aldri har kommet forbi prototyp-stadiet, er ikke tatt med.

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Preface

The present report is written for the NATO Defence Against Mortar Attacks (DAMA) project, the ninth initiative under the Defence Against Terrorism Programme of Work. The decision to make a reference report on rocket artillery was taken at the joint meeting of the DAMA Working Group and CRAM Team of Experts in Copenhagen, Denmark in September 2008.

A similar work on mortars[1] was presented to the DAMA WG in 2007. For ease of comparison between the two weapons systems, The Mortar Reference Book has been used as a template for this report when appropriate. However, rocket artillery is a more versatile and complex weapon system than mortars. This fact is reflected in the description of the systems and in the scope of the themes that are discussed. Rocket artillery is easier to improvise than conventional gun artillery and even mortars. Improvised rockets are also a reality in some war affected areas. Thus, aspects concerning the possibility of using primitive components, and the limitations of such technology are also discussed.

The report starts with a general historical overview of the theme and a classification of the different types of systems in chapters 2 and 3. The technology of the different parts and payloads are discussed in chapters 4, 5 and 6. Performance aspects as accuracy and lethality are the theme of chapters 7 and 9. The important aspect of making improvised systems is discussed in chapter 9. The final three chapters are committed to organizational aspects, some examples of the effects to be expected in attack of a typical camp, and finally some speculations on the future of these kinds of weapons.

The author would like to thank Thor Engøy, who has managed this project and who is also chairing the DAMA WG. The author also would like to extend his gratitude to several other colleagues at FFI for their contribution and useful discussions.

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1 Introduction

In many armies, field artillery is considered as the most precious of weapons, superior to both infantry and cavalry. During the twentieth century, no other weapon contributed to the enemy casualty rate as the artillery. Therefore, in most nations, artillery has been a major component of the army, and the supreme fire support weapon at short and medium ranges. This status has been most prominent in the Soviet and Russian armies where artillery often is referred to as the “God of War”.

There are several types of artillery; coastal artillery, air-defence artillery, ship artillery, and - field artillery. The concept of field artillery usually is understood as two types of weapons – gun artillery, usually howitzers, and rocket artillery.

Although rocket artillery is not as common as the tube artillery, delivery of fire by rockets provides several advantages over guns

- the launching unit can be made light and simple
- the launching does not put heavy strain on neither platform nor projectile
- very high calibre charges can be fired by relatively primitive launchers
- the payload does not have to be as rugged and robust as that of gun artillery projectiles because the acceleration of a rocket may typically be just a percent of that experienced in gun artillery
- a high volume of fire can be delivered within a very short period

Of course, there are also some disadvantages like:

- accuracy
- ammunition weight
- ammunition cost
- not suited for direct fire mode
- more pronounced signature
- limited ability to deliver sustained fire

This report will focus on the different aspect of rocket artillery. Hopefully this will make the reader more able to understand these kinds of weapon, and to find ways to counter the threat they constitute.

1.1 Defining rocket artillery

There are certain challenges in delimiting the extent of the definition of rocket artillery, both at the low end and at the high end.

The main characteristics of field artillery is that it fires in an indirect mode, i.e. the target can not be seen from the launcher unit, and the attitude of the launcher is set upon information from forward observers, or intelligence information, on where a valid target is located. So far, such a definition may seem clear-cut. However at the low end there may be cases where a weapon designed for direct fire is used in an indirect mode. These weapons will in general not be considered here. There are, however, some interesting examples on how direct fire weapons have been reconfigured to an indirect mode. Some of these will be mentioned.

Some indirect systems can also be used in a direct mode. The effect of such use will not be included in this report.

At the high end, the limitations may be more difficult to set. The requirement of *multiple* rocket launchers will be too strict as some very common rocket systems are also found in a single tube configuration. The most reasonable criterion may be that of firing range. In this report, systems being able to deliver its payload at ranges of less than 100 km are included, while systems exceeding around 200 km will generally not be considered. The latter systems are usually theatre level, or strategic, weapons that are only supposed to be used in a conflict of continental extent. However, it has recently been observed that such systems are used in conflicts of limited size and at relatively short ranges, which justifies their inclusion.

More specifically, we will include systems with singular vehicle-mounted rockets that have a maximum range not exceeding 500 km and a minimum range of less than 80 km. Thus they will have an operational range that is overlapped by MRL. This class will not cover the so-called SRBM class (Short Range Ballistic Missile), which by definition has a range exceeding 500 km.

Many of the weapons mentioned in this report have the capacity to carry nuclear warheads, but this aspect is not considered here.

Some “lateral” limitations also have to be drawn. The following rockets or rocket-like projectiles are not considered

- gun artillery projectiles with rocket-like auxiliary propulsion. Hence, projectiles with rocket propellant assistance (RAP or BB) are not included.
- surface-to-air rockets
- air-to-surface rocket, unless they have been reconfigured to surface-to-surface mode
- rockets intended for maritime warfare, including sea-to-land systems
- types that have not been deployed in regular armies or never seen in use by non-state parties
- systems with rockets exclusively intended for mine-laying or mine-clearance

1.2 Legal aspects

There are no international convention regulating the use of rocket artillery as such, but the type of payload may be affected by several conventions. Among these are

- Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects (Geneva 1980)
- Chemical Weapons Convention (1993)
- Protocol on Prohibitions or Restrictions of Mines, Booby-Traps and Other Devices (Ottawa 1996)
- Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (1980)
- Convention on Cluster Munitions (Oslo 2008)

However, the validity of some of these conventions is still limited as many nations, and especially the most belligerent nations, have not signed some of the conventions.

2 Historical overview

2.1 Pre WWII

There seems to be consensus among historians that rockets were first used in China in 1232 AD during the Mongol siege of the city Kai Fung Fu. It is not known what kind of rockets was used, and it may even be doubted whether they can be classified as artillery.



In Europe rockets were not used in earnest until early 19th century. This development was due to the pioneering work by Sir General William Congreve in Britain. He is considered as *The Father of Modern Rocket Artillery*. His proposed designs, which were like today's fireworks rockets, were promoted to British authorities and were used by for the first time by the British Navy in the attack against the French city of Boulogne in 1806. The first massive use of these rockets was made by Lord Admiral Horatio Nelson's fleet attacking Copenhagen in 1807. 25000 rockets were fired at this event, resulting in a total burn-down of the city. Congreve's rocket design was used during the British attack on United States in 1813 (see box)

Figure 2.1 William Congreve – the father of rocket artillery

The rockets' red glare

On September 13 and 14, 1814 a 25-hour barrage of Congreve rockets was fired from the British ship Erebus against Fort McHenry in Baltimore. The Erebus carried about 20 Congreve rocket batteries consisting of a box housing multiple metal firing tubes. Each of the rockets fired against Fort McHenry weighed about 30 pounds, and carried an incendiary charge. Although a number of American ships were destroyed by Congreve rockets during the War of 1812, just four deaths and minimal damage was reported at Fort McHenry during the siege. However, the battle was witnessed by a young lawyer named Francis Scott Key, who mentioned the Congreve "rockets' red glare" in his song "The Star Spangled Banner". The song later became the U.S. National Anthem, paying tribute to the tenacity of the American forces under siege. [2]



Congreve's rocket fired from a boat

In the mid 1800s, Congreve's concepts were modified and improved by his countryman William Hale leading to the development of a spinning rocket which dramatically improved the accuracy of the vehicle. He was also the first to use rails or grids to support the rocket in the first phase of acceleration, which also improved the precision. Although Hale was an Englishman, his rockets were used by the U S Army in the American – Mexican war during the 1840s.[3]

Over the next decades the rockets were discarded in favour of gun artillery, which made great progress during the American Civil War. The other main wars; the Crimean War, the Franco-Prussian War, the Boer War, the Balkan Wars, the First World War, did not include any significant use of rocketry.

2.2 WWII developments

During WWII rocket artillery was developed by all main fighting parties – US, UK, Germany, USSR and Japan. However, for the latter the development and use were very modest.

Germany had their Wurfgranate or Nebelwerfer in various configurations with calibres from 150 mm to 300 mm. US had their M8 rocket in the Calliope system with a 60-tube rack at the top of a Sherman tank. Britain did not have any working system before the last year of the war. Most notable was the Land Mattress which was a towed 12-tube rack able to fire 127 mm rocket out to almost 8 km.[4]. UK and US made an exchange of data on their development before US entered the war.

The first 20 months of WWII went by without any use of rocket artillery. However, in the USSR the military rocket development started in the early 1930s. By 1939 the first prototypes were ready. The order to produce these weapons issued on 21 June 1941, the day before the German invasion started. Rocket artillery was used for the first time in WWII during the Soviet defence of Orsha, a city on the Minsk – Moscow line, on 14 July 1941, just 23 days after the order was issued. The system used was the BM-13-16 with a rack of rails on the back of ZIS-6 truck. [5;6] The rack consisted of 8 rails on which there were two M13 132 mm rockets on each – one at the upper side and one at the lower side of the rail. The M13 rocket was a fin-stabilized device, 1.4 m long and with a weight of 42.5 kg. It could reach a velocity of 355 m/s and had a firing range of about 8.5 km [7]. The M13 rocket was the most proliferated rocket during WWII and was produced at the number of almost 7 millions.

Although the official name of the system was as mentioned above, the soldiers soon gave it the name of Katyusha, a name that is now used for artillery rockets in general. The reason was no other than that the carrier trucks had the letter “K” painted on the doors. Katyusha is a diminutive of the common Russian female name Yekaterina.

BM-13 stayed in service in the Soviet Army until 1960 and is in fact still in service in PR China in a modified form as a mine laying rocket.

The table below shows some characteristics of the systems used by the Soviets during WWII. These systems were to become the basis of the systems to come.

	M-8	M-13	M-13-UK	M-31	M-31-UK
Calibre (mm)	82	132	132	300	300
Rocket weight (kg)	8.0	42.0	42.5	95.5	94.8
Warhead weight (kg)	3.2	21.6	21.6	51.6	51.6
Weight of high explosive (kg)	0.6	4.9	4.9	28.9	28.9
Weight of propulsive fuel (kg)	1.2	7.2	7.2	11.2	11.2
Maximum velocity (m/s)	315	355	335	255	245
Launch velocity (m/s)	70	70	85	55	50
Maximum range (m)	5515	8470	7900	4325	4000
Longitudinal dispersion (%)*	1.9	1.3	1.0	2.4	1.4
Transversal dispersion (%)*	4.0	2.4	1.2	5.9	1.9
Radius of total defeat (m)*	3 - 4	8 - 10	8 - 10	(15 - 18)	(15 - 18)
Radius of effective defeat (m)*	10 - 12	25 - 30	25 - 30	(45 - 50)	(45 - 50)

Table 2.1 Some characteristics of WWII Soviet artillery rockets [5]

*) The exact definition of this term is not known

Numbers in parentheses are assumptive

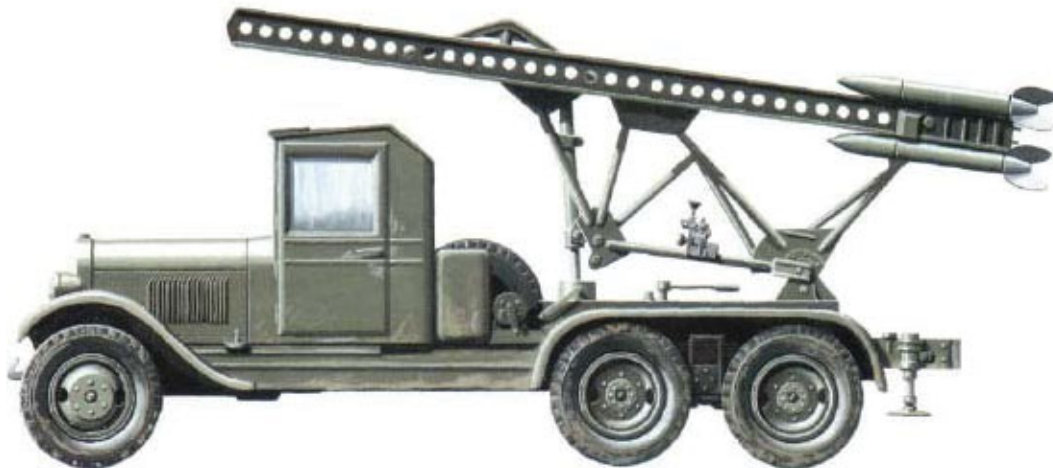


Figure 2.2 The original BM-13-16

2.3 Cold War developments

After WWII, the development in the Western countries was either progressing at low pace or more or less discontinued. U S developed their towed 24 tubes M21 which was used until the late 1980s. The truck mounted 45 tubes M91 (115 mm) was declared obsolete in the mid 1990s. The most significant development was the development of MLRS (Multiple Launch Rocket System) which had its first test firing in 1980 and which had its first wartime use in Operation Desert Storm in 1991. [8]

For the long ranges, U S started off designing the rockets Lance and Honest John. However, these systems were relatively short lived. The ATACMS (Army Tactical Missile System) was developed as follow-up to MLRS, using the same launching platform. This system was also used during the Gulf War in 1991.

Some other Western countries also had their development. The most prominent was the German LARS (Leichte Artillerie Raket Systeme), which was in service in the German Army from 1969 until quite recently. Also France, Italy and Spain each developed their systems.

Israel deployed their first system, a 290 mm calibre long range mounted on a tank, in the mid 1960s. Following the Yom Kippur war in 1973, IDF (Israel Defense Forces) issued a requirement for a lighter system, which matured into the 160 mm LAR. This was used in combat for the first time in 1982 in Lebanon.

USSR, however, continued their development at very high pace throughout the period. The types used during WWII, were kept and additional type based on new principles were developed and deployed in massive numbers. Designs based on spin stabilization, liquid propellants or tubular launchers replacing the rails were all deployed. Range, calibre and accuracy were also steadily improved or increased. A wide variety of payloads like smoke, illumination, mines, bomblets and ECM were also developed.

2.4 Distribution

By the end of the Cold War the former Warsaw Pact nations had around 7000 MRL systems deployed, while NATO had less than 1000. A limited number of other nations had systems of Soviet origin, of which many were of WWII designs or other more or less obsolete kinds.

Today, Russia and other former Soviet nations have sold or phased out a substantial part of their rocket artillery systems. NATO has slightly increased their inventory, which is focused on the MLRS system in addition to some systems inherited from former Warsaw Pact states. Since the end of the Cold War, there has been a proliferation to many nations. Currently more than 100 nations have rocket artillery units deployed, although some nations may just have a handful of units. The most disturbing fact is that these weapons have proliferated into a number of non-state parties. It seems that these units often are of Iranian origin, but nations like China, North Korea and some former Soviet states have contributed in this respect.

3 Types of rocket artillery

3.1 Portable systems

This is the most primitive of all artillery and can be made out of a single tube attached to a tripod along with aiming devices and an umbilical system for remote triggering or ignition. (see figure 3.1 below). The tube and tripod may have a mass of some 20 kg. Rockets up to 122 mm calibre

and 45 kg rocket mass can be fired in this way. A squad of 4 – 5 men can carry the launcher and three rockets. However, the mass of the different units prevents long tactical movements without access to a vehicle of some kind. Twin tubular launchers on a tripod have also been seen. Such systems are particularly favoured by guerrilla and insurgency forces.



Figure 3.1 A portable single tube launcher

Portable systems can also be designed in a mortar-like way, with a bipod and a baseplate. The Yugoslavian system called M-71 Partizan (see figure below) with a 128 mm calibre is an example. This is for a spin stabilized rocket. There is also a parallel design for the fin stabilized M-77 Oganj system.

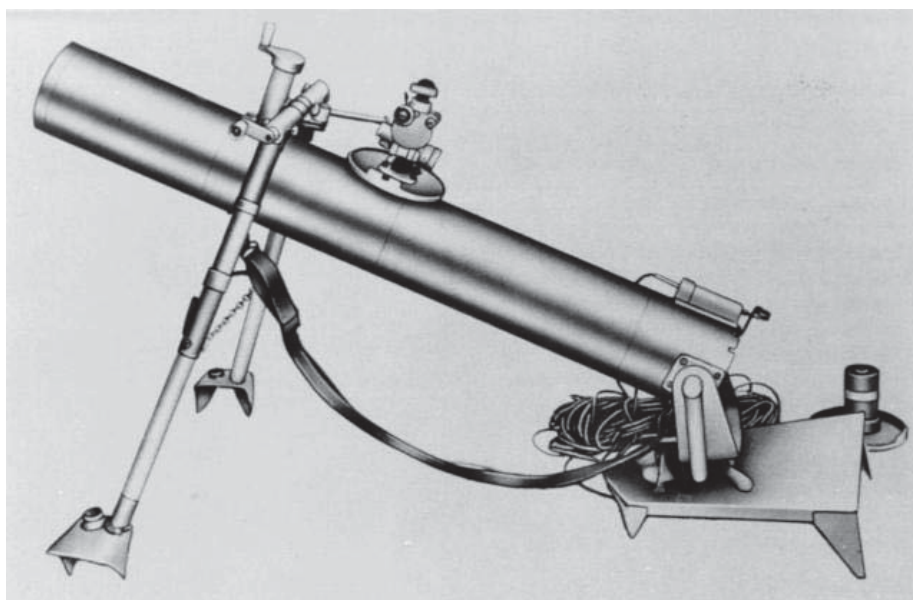


Figure 3.2 The M-71 Partizan system with a mortar-like configuration.

The advantage of having a mortar configuration is obviously the stability. It is probably possible to fire several rockets without readjustment of the sight. However, such a system may be far heavier than tripod systems.

3.2 Towed systems

The first systems developed by Germany, UK and US during WWII were multiple tube racks placed on top of a two-wheeled boggy and with an arm to facilitate towing behind a vehicle. Systems of that type are still in use today in many countries, and are popular among non-state armies due to their size, lightness, simplicity, cost and low maintenance requirements. The number of tubes attached can vary from a handful to dozens.

The limitations on size and on the total weight of a loaded system prevent any use of high calibre rockets or rockets with an elongated motor section. Short spin stabilized rockets are consequently usually chosen as ammunition for such systems. Thus the possible maximum firing range will usually be limited to 8 – 10 km.



Figure 3.3 A 12-tubed towed system behind a light vehicle with the same system mounted on the vehicle

3.3 Vehicle mounted systems

When a tube rack is mounted on the back of a truck or on a specially designed vehicle, we have a fully fledged multiple rocket launcher (MRL). Most MRL-types belong to this type. However, this class covers a wide spectrum in vehicle size, rocket calibre and number of tubes/rails. Smaller systems may be placed on an ordinary truck. Larger systems may require a specially designed carrier vehicle.

With some few exceptions, an MRL system carry only the ammunition that is ready to fire and loaded in the tubes or at the rails. Additional rockets have to be carried by support vehicles.

Vehicle mounted systems requires a crew consisting of 3 – 8 soldiers. Highly automated systems, like the MLRS, have the lowest crew requirement. Systems based on manual loading, like the BM-21, have a crew of 7 soldiers.

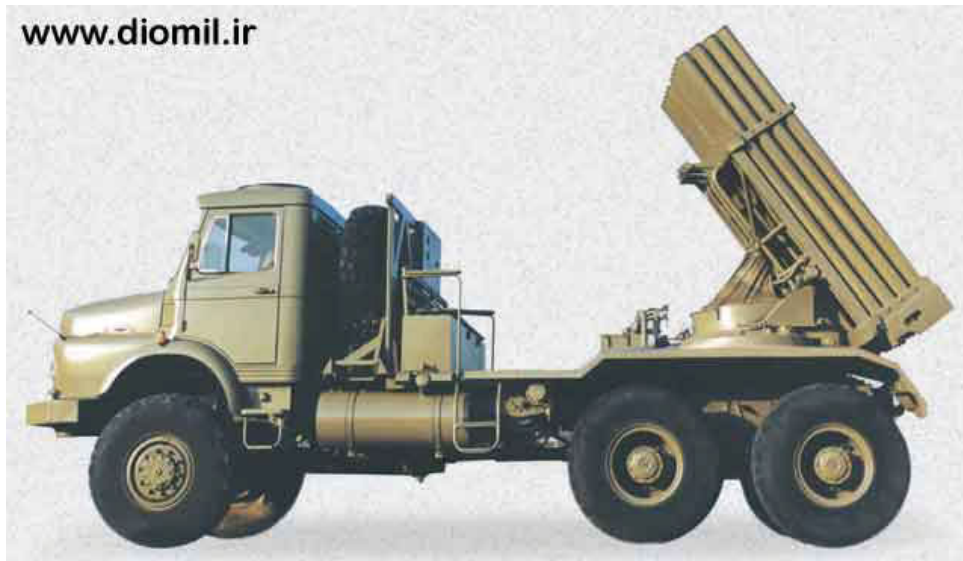


Figure 3.4 Truck-mounted multiple rocket launcher

3.4 Artillery missiles / tactical missiles

This class consists of systems with singular vehicle-mounted rockets, as to distinguish them from multiple rocket systems. Herein, we will consider those systems that have a maximum range not exceeding 500 km and a minimum range of less than 80 km. Such rockets are carried by specially designed vehicles with just one rocket on board. The mass of these rockets exceeds 1 ton, their calibre may be 500 mm or more and they may be more than 10 m in length. Obsolete systems like the American Honest John and the Soviet made FROG fall into this category. Although these rockets originally were intended for grand scale warfare, they were seen in use in the Russian-Georgian conflict in 2008.

The current systems of this type are the American ATACMS, the Russian FROG, Tochka and Iskander, and some Chinese and Iranian systems.

All systems in this class must have some kind of guidance in order to effectively hit a target at long range.



Figure 3.5 Iraqi FROG-7 rocket encountered during OIF

3.5 Guidance systems

The majority of artillery rockets are unguided (free rockets). However, guided rockets are becoming more common. The guidance systems are usually based on either inertial navigation (INS) or GPS.

3.5.1 Inertial Navigations Systems (INS)

Inertial navigation is a well proven principle. The system is based on accelerometers and gyros that register the linear and angular movements in each direction. The inputs are then integrated to find to position relative the initial position of the unit. INS thus requires the initial position and orientation as input.

All inertial navigation systems suffer from integration drift. Small errors in the measurement of acceleration and angular velocity are integrated into progressively larger errors in velocity, which result in still greater errors in position. This is a problem that is inherent in every system. The inaccuracy of a good-quality navigational system is normally less than 1 km per hour in position and on the order of tenths of a degree per hour in orientation.

3.5.2 Global Positioning System (GPS)

A GPS receiver calculates its position by carefully timing the signals sent by the GPS satellites high above the Earth. Each satellite continually transmits messages containing the time the

message was sent, precise orbital information, and the general system health and rough orbits of all GPS satellites (the almanac). The receiver measures the transit time of each message and computes the distance to each satellite. Geometric triangulation is used to combine these distances with the location of the satellites to determine the receiver's location. The position is displayed, perhaps with a moving map display of latitude and longitude; elevation information may also be included. Many GPS units also show derived information such as direction and speed, calculated from position changes.

Opposite to INS, GPS does not suffer from any drift over time. However, disturbances and other technical limitations limit the accuracy to a few meters horizontally. Differential GPS, where the position is measured relative to an accurately known reference point, has an accuracy of a few centimetres. GPS is becoming the most used navigational system for guidance of artillery rockets.

GPS is an external system not controlled by the user. It is currently operated by U S Air Force. Other nations, or group of nations, have or are in the process of establishing alternative systems based on the same principles

4 Components of rocket artillery

The concept of rocket artillery is comparatively simple, both with respect to the projectile, the rocket, and the launcher platform, whether the system is a self propelled vehicle or a tubular device put on a simple tripod.

The basic components are shown in the table below

Rocket components	Launcher components
Fuze	Rail or tube
Warhead	Aiming devices
Motor incl. fuel and nozzle	Fire control system
Igniter	Carrier
Fins	

Table 4.1 Basic rocket components

The rocket components, i.e. the ammunition will be covered the succeeding chapter.

4.1 Rail or tube systems

There are basically three ways of launching a rocket – by a rail, by a tube, or by the so-called *zero length launch*. In the latter mode the rocket is just held stable during the initial launch, but has no devices that keep the direction once it is free. Well known examples of such are NASA's space rockets. Firing in this mode requires that the rocket is fully guided and steerable in every phase. Most artillery rockets are exclusively based on rail of tube launchers, but some tactical rockets

use zero length launchers. All unguided systems have to use rails or tubes as they initially have to obtain the predefined flight direction.

The first rocket artillery systems, like BM-13, were true rail launchers. The rockets started their flight sliding along a straight rail of a few meters length. This way of launching is not very accurate, as the rocket continues to accelerate for a long distance after leaving the rail. Such a non-spinning rocket is very prone to disturbances during this phase. Manufacture flaws and other disturbances will seriously affect the accuracy.

A tube basically has the same function as a rail. The only difference is that the rocket may be free to rotate, or it may have a device inducing spin to it. A common solution is a tube-rail combination, a tube with helical rails on which the rocket rides. The rail system can be inside the tube, which requires a tube that is wider than the rocket diameter. Alternatively, the tube fits the rocket calibre, while the rails protrude from the tubes, making them clearly visible.

A disadvantage of a tube is that it may be difficult to adapt to rockets with fixed fins. This can be solved by using a kind of cage construction, but this will require more space on the launcher. A majority of the modern multiple rocket systems have solved this problem by using so-called wrap-around fins (WAF). They fit the curvature of the rocket hull, and flip out into a locked state after leaving the launcher. Wrap-around fins give a somewhat higher drag than fixed fins, but when all factors are considered, it is a good solution.

4.2 Aiming devices

There is no principal difference between gun artillery and rocket artillery with respect to aiming. Both artilleries are indirect fire in the sense that the target or aim point cannot be seen from the firing post. The launching platform must therefore point its rockets in a direction determined by ballistic calculations. The aiming devices are indicators displaying the orientation relative to the vehicle, and a compass and other navigational instruments for determining the orientation and position.

4.3 Fire control systems

Like howitzers, rocket artillery systems require a Fire Control System (FCS) capable of handling a comprehensive amount of input – the Fire Control Input (FCI). The output of the fire control system will be the parameters needed to complete the fire mission, i.e.

- launcher elevation
- launcher azimuth angle (horizontal orientation)
- use of any braking device if applicable
- fuze setting (timing) if a time fuze is applied
- the types and amount of rockets to be fired

If the mission involves multiple launchers, possibly an entire battalion, each launcher or each battery has to be given individual firing data.

The FCI may consist of the following groups of input, but the amount depends on the complexity of the system.

- launcher geographical position
- target geographical position
- meteorological data (temperature, air pressure and wind velocity at different altitudes)
- ammunition data (aerodynamic data, motor data, physical data, expected precision data)

Modern systems have a ballistic computer that makes use of all the data mentioned above. Older systems may still be based on ballistic tables and slide rulers and will not be able to fully make use of all the data above.

4.4 Carrier

Most rocket artillery systems are carried on the back of a 4-wheeled or 6-wheeled truck. These trucks are usually multirole vehicles that have been specially adapted to carry the rocket launching units. These truck mounted launchers will require a crew of 4 to 7 men in addition to one or more supply vehicles.

The largest rocket type, like the tactical missiles, may use a specially designed vehicle, mostly 8 x 8 wheeled, as the carrier.

Some systems with calibres not exceeding 122 mm may be man portable, but the distance to be covered or the load to be carried will be severely limited by the size and weight of the rockets.

4.5 Rate of fire

Many rocket artillery systems have a rate of fire far exceeding both conventional artillery and mortars. While manually loaded conventional artillery may reach 5 shells per minute in short salvos, and hardly more than 3 per minute in sustained fire, multiple rocket systems may fire the whole load of 40 rockets in as little as 20 seconds. Consequently a battery of MRLs can fire hundreds of rockets onto a limited area within a short interval.

A high rate of fire requires that the launcher platform is very stable. For some systems, like MLRS, each rocket in the launcher may be designated to an individual aim point. Thus the system has to re-aim for each shot, and the rate of fire may be as low as 10 – 15 rockets per minute.

A major drawback with rocket systems is their inability to deliver sustained fire. When the whole load has been fired, it may take many minutes, even as long as 20 minutes to reload the system.

The table below gives some values for the firing rate and the reload time

System	No. of rockets	Firing time	Reload time
BM-21 Grad	40	20 s	10 min
BM-22 Uragan	16	20 s	25 min
BM-27 Smerch	12	38 s	20 min+
M26 MLRS	12	60 s	10 min
LAR-160	26	60 s	5 min
Filin (FROG)	1	n/a	20 min

Table 4.2 Duration of full salvo firing and reloading

It appears that most rocket artillery systems are able to fire their load in one batch. There is usually possible also to deliver smaller salvos, even a single rocket. For systems with a high rate of fire, like the BM-21, there is usually no readjustment of the launcher during the salvo. This implies that all rockets in a salvo are aimed at the same target, and that the lack of readjustment results in a wide dispersion of the salvo.

5 Basic rocket design

5.1 General design

The figure below show the typical rocket design with the following components:

- warhead
- fuze
- motor casing with propellant grain
- nozzle
- fins (if not spin stabilized)
- igniter (in the front or back end of the motor)
- umbilical(s)

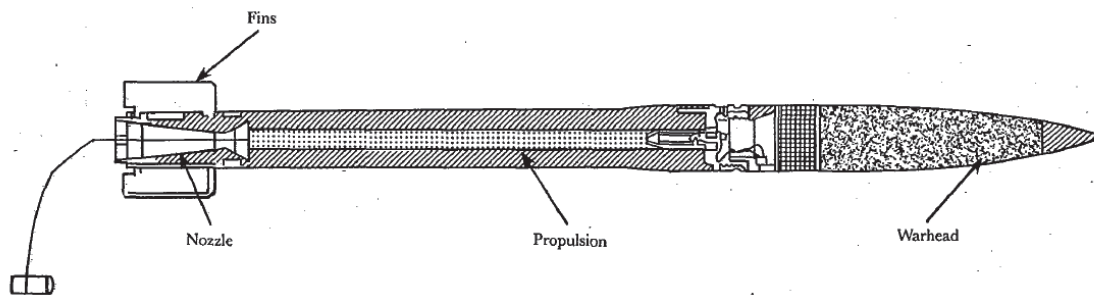


Figure 5.1 Typical rocket design

5.2 Warhead

The warhead may account for 25 – 50% of the rocket mass. It is almost exclusively placed in the front part of the rocket. The payload has to be encapsulated in a casing which is rigid enough to withstand the firing loads and normal handling. For fragmenting warhead, this encapsulation is may be designed in order to generate an optimal fragment pattern.

The different payloads are treated in more detail in the successive chapter.

5.3 Motor

The motor consist of a shell encapsulating a propellant grain or several grains. The design of the grains is described in the interior ballistics section in the next chapter.

It should, however, be pointed out that most rocket artillery motor have a quit short burn time – usually less than 3 seconds. This is contrary to the impression one might get when observing rocket artillery. After this short time, the rocket may still burn and eject smoke, but just slivers of propellant are burning and the acceleration is very weak or completely absent.

The smoke gives a quite high visual signature. The use of smokeless propellants has obviously not been a serious issue in rocket artillery, but smokeless seems to be in use for some newly developed spin stabilized systems. The rocket will in any case will give a quite high launch signature in terms of dust and flash. Besides, a rocket may be readily detected by artillery locating radars.

5.4 Nozzle

The primary function of the nozzle is to expand the hot propellant gases from the high pressure in the combustion chamber to the external ambient pressure, thereby converting thermal energy into directed kinetic energy or thrust. The theoretical thermodynamic relations provide methods for the calculations of rocket motor performance and nozzle design parameters. The flow of combustion gases, as they are expanded through the nozzle, is assumed to be an isentropic flow (adiabatic and reversible).

The maximum thrust from a motor is obtained when the combustion gases are expanded to the ambient atmospheric pressure. Since rockets usually operate at varying altitudes and the atmospheric pressure varies with altitude, the selected design expansion ratio of the nozzle is usually a compromise between the thrust and the nozzle expansion ratio, length, and weight.

An ideal nozzle profile should obey the following requirements:

- There should be no heat transfer across the rocket walls; therefore, the flow is adiabatic.
- There should be no appreciable friction and all boundary layer effects are neglected.
- There should be no shock waves or discontinuities in the nozzle flow.

- The flow of the combustion products should be steady and constant. The expansion of the working fluid should be uniform and steady, without vibration.
- All exhaust gases leaving the rocket should have an axially directed velocity.
- The gas velocity, pressure, temperature, and density should all be uniform across any section normal to the nozzle axis.

In reality, these, and even more requirements, can not all be fulfilled. A nozzle design is a compromise that gives an acceptable performance at different environmental condition and during the entire burning phase. There will also be a substantial heat transfer in the nozzle material and some erosion of the nozzle material.

The most common nozzle materials are:

- tungsten (alloyed with molybdenum)
- graphite
- glass phenolics
- ceramics
- steel

The latter is of course the most inexpensive choice. Steel may be the natural material if the burn time is short, like a couple of seconds. A material that has better erosion properties is advantageous from the accuracy point of view.

5.5 Fins and stabilizers

The purpose of stabilizers is to ensure that the rocket becomes aerodynamically stable. More specifically, the stabilizer moves the aerodynamic centre of pressure backwards. Usually, the centre of pressure should be put behind the centre of gravity and thus ensuring a statically stable rocket.

5.5.1 Fixed fins

Fixed fins are the most obvious choice and the conventional kind of fins. Unguided rockets, however, require some kind of restrained movement until a certain velocity has been achieved, which is realized by rails of tubes. Fixed fins are quite cumbersome in this respect. Rail launchers may handle fixed wings – tubular launcher usually will not. Rail launcher imposing initial spin is technically rather complicated, but has been solved for some large calibre systems.

Fixed fins were the only configuration when the concept of rocket artillery was introduced during WWII, but today they are used very rarely.

5.5.2 Wrap around fins

There are two types of Wrap-Around Fins (WAF). The original and genuine type is the one where the fin is a flexible blade, made of spring steel, that wrapped around the rocket body, usually in a

half circle. When leaving the launch tube, the fins open up and stay in a position that is tangential to the body. This type is also known as tangential tri-form, or tangential six-form, etc., according to the number of fins.

The other type has rigid fins shaped like a quarter cylinder attached to the body with a spring-loaded hinge. In the launcher tube the fins are wrapped around the rocket body and locked by a strap around them. This strap is broken at or immediately after leaving the launch tube. After release the fins are locked in a fixed position, usually almost perpendicular to the body.

The first type, with spring steel fins, is usually not used in rocket artillery, as they tend to flex and vibrate at high speed. Rigidity of fins is paramount for the performance of high velocity rockets.

Wrap-around fins may be opened either way, with or against the spin direction. It does not seem to be any regular policy here. Left-spinning MLRS rocket fins open up to the right, i.e. against the spin. Most Russian systems, which are right-spinning, also open to the right.

Wrap-around fins are not suited as a steering device. For that purpose canard fins at the fuze section must be applied.

5.5.3 Grid fins

Grid fins are planar grids that are placed parallel to the body during launch. After launch they are locked into a position perpendicular to the body. This type was first used by Soviet Union in the 1970s on their tactical missiles like SS-21. Such fins are very well suited for guided rockets. Guidance is achieved by tilting the fins around an axis transverse to the body axis.



Figure 5.2 Grid fins at an the back American bomb[9]

5.5.4 Other fins or stabilizers

An overview of several kinds of aerodynamic stabilizers is shown in the table below. The table also includes some of the types mentioned above.

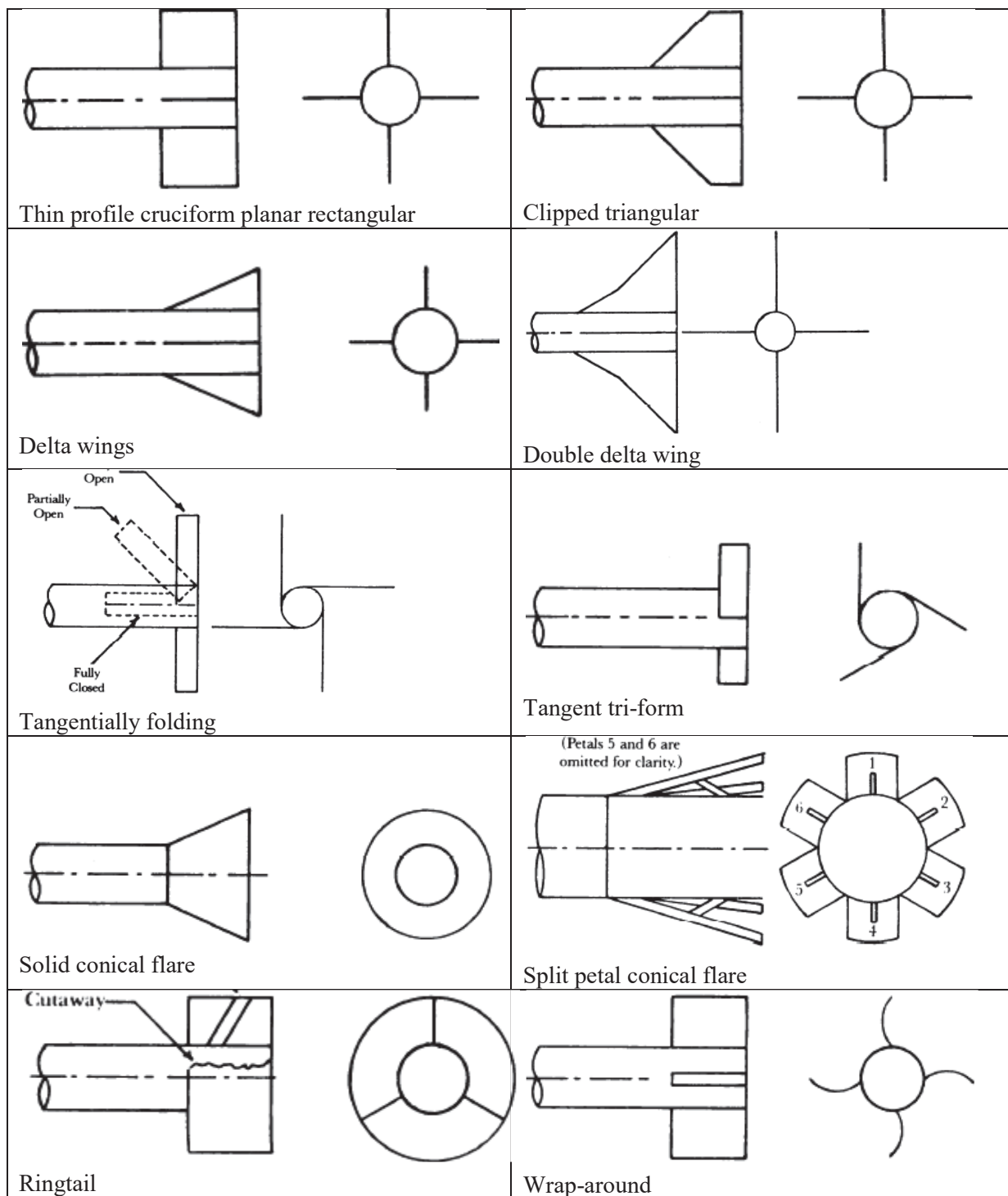


Figure 5.3 Different types of stabilizer devices[10]

5.6 Fuzes

The role of the fuze is threefold

- to ensure that the rocket can be handled safely during storage, loading, transport and launch
- to arm the ignition train prior to the time of function
- to function by detonating or ejecting the payload

Basically, rocket artillery fuzes have the same set of functions as gun artillery fuzes. For gun artillery, the high acceleration is usually exploited to arm the fuze in combination with spin. However, a gun artillery fuze can not be used as on a rocket because rockets have far less acceleration, and often far less spin, than gun artillery projectiles. While a gun artillery fuze may be subject to an acceleration exceeding 20000 G, the acceleration for a rocket may typically be around 200 G. The latter is a level of acceleration that can be experienced during handling of the munition. Thus the design of a rocket fuze may be more challenging than a gun fuze. However, the need to make the fuze rugged and robust can be somewhat relaxed for rocket artillery.

5.6.1 Impact fuzes

This is, without comparison, the most common type of fuze. Impact fuzes can be made simple, inexpensive and with adequate reliability. The more sophisticated versions contain features that arm the fuze by acceleration or spin or both. If safety can be compromised, the ignition may take place by a firing pin that strikes an igniter by inertia alone.



Figure 5.4 Some impact fuzes (left to right) MRV for 122 mm Grad, M20-C1 for Astros II, V-24 and V-25 both for 240 mm spin stabilized rockets

5.6.2 Time fuzes

Time fuzes are required for kinds of rockets carrying submunition payload. A representative type is the M445 for MLRS. It is described in [11] and in the following factbox illustrates the complexity of such a fuze.

The M445 fuze

The fuze is composed of a fluidic (ram air) generator power source, an electronic module with telemeter umbilical and setter cables, an S & A mechanism, and an explosive lead charge. Fuze safety is achieved by restraining a rotor by an acceleration-time sensor and a piston actuator initiated by the fluidic generator operated from sustained airflow.

Upon firing, a spring-based setback weight moves rearward, oscillating in a zigzag path. If a proper rocket motor boost is obtained, this partially releases the rotor and closes a switch to an electronic timer. In flight, ram air passes through an annular orifice into a resonating cavity and the acoustic vibrations oscillate a diaphragm connected to a reed in a magnetic field and thus generate an electromagnetic field. After 1024 cycles of the diaphragm, a capacitor is charged, and after 1536 cycles, it is discharged into the piston actuator. The piston actuator removes the second lock to release the rotor completely. Sustained acceleration rotates the unbalanced rotor against a bias spring to the armed position; this rotation unshorts the detonator and closes the firing circuit. The rotor is then locked in the armed position by a lock pin. Timing is accomplished with a twin oscillator, a divider circuit, and a counter. To enhance overhead safety, at 3.4 s before set time the firing capacitor is charged and, at set time, functions the Mk84 detonator, which initiates the lead.

Before flight the fuze is set by the MLRS FCS. A status switch, which is closed when the rotor is unarmed and open if the rotor moves, assures that the fuze can be set only if it is unarmed prior to launch. The S & A assembly is designed so that it cannot be installed in the fuze if the rotor is armed.

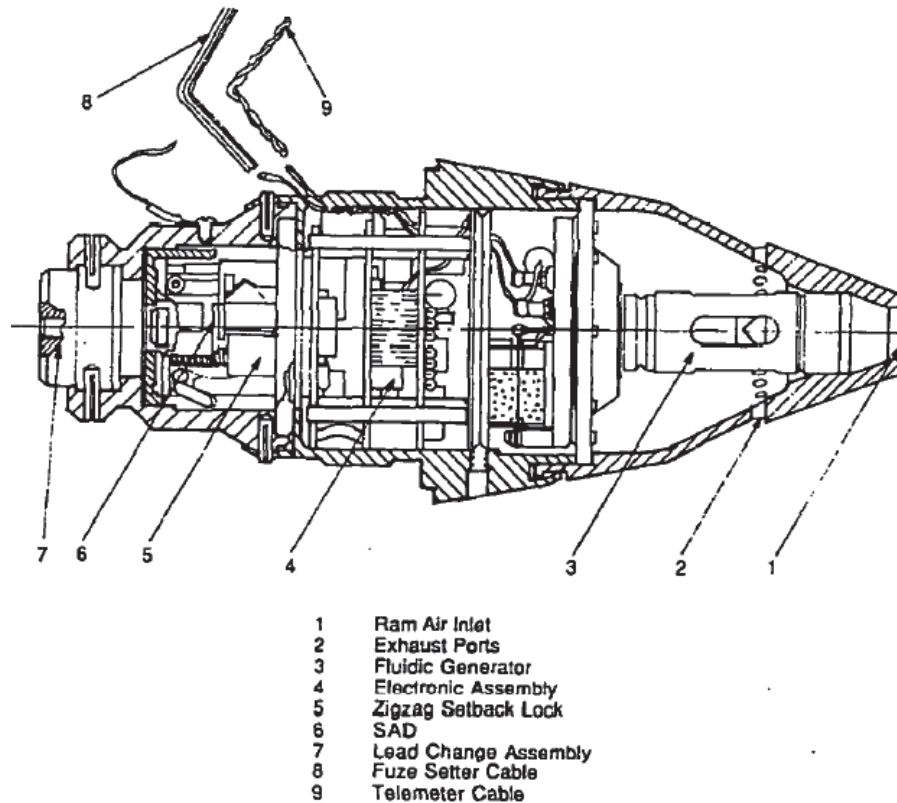


Figure 5.5 The M445 for MLRS (see description above)

5.6.3 Proximity fuzes

Warheads of the unitary high-explosive and fragmentation type (not bomblets) may be set off by a proximity fuze. Such fuzes respond to the echo of a radio wave emitted from the fuze itself and are designed to function at an altitude of 5 – 15 m above ground. Small calibre rocket will benefit from a lower height than large calibre rockets. Proximity fuzes may be subject to jamming. To minimize this threat, they may be set to arm and emit signals just a couple of seconds before the intended target encounter.

5.6.4 Multi-function fuzes

Multi-function fuzes contain a suite of functions like impact, proximity, time and even delay. For obvious reasons, the time function must override the proximity function, which again must override the impact function. The latter will be the last resort function if the others should fail.

5.7 Igniters

The igniter's mission is to initiate the burning of the fuel. This is made possible by injecting a flame into the empty cavity in the interior of the propellant grain. Ideally the whole surface of the grain should start burning simultaneously.

The igniter may be placed in the forward end, in the middle of the motor cavity or in the nozzle opening. In the latter case the igniter is spit out as the pressure inside the rocket builds up. In spin

stabilized rocket the igniter is placed in the centre of the rocket rear end, surrounded by the suite of nozzles.

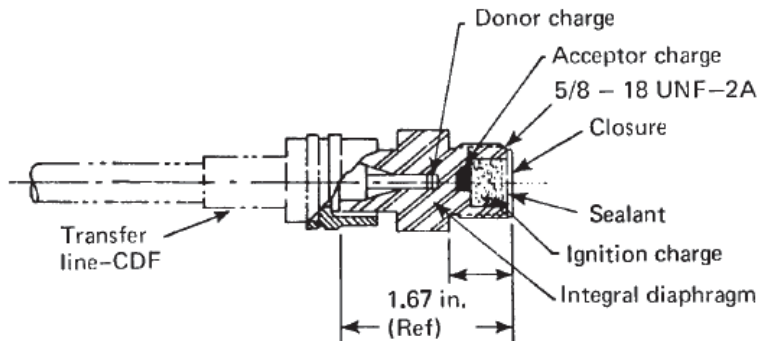


Figure 5.6 A squib type igniter

Small and medium rockets often have a squib placed in the nozzle. For the sake of redundancy, 2 squibs may be used. MLRS uses this method.

Larger rockets may need a larger igniter like the pyrodyne, which is a rod with perforations at the sides that eject burning particles. This principle is also used to ignite other charges like those of large calibre tank ammunition.

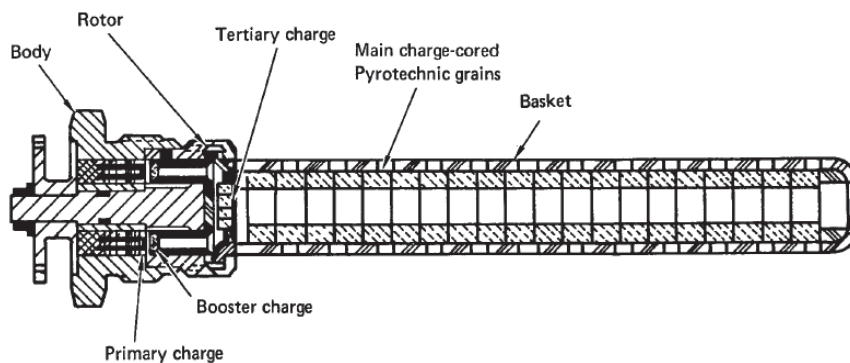


Figure 5.7 A pyrodyne igniter

A smaller variant of this principle is the pelleted pyrotechnics that ejects burning powder pellets. BM-21 rockets apply this principle with the additional feature that the ignition unit is placed half-way inside the motor, ejecting the propellant grains in both directions.

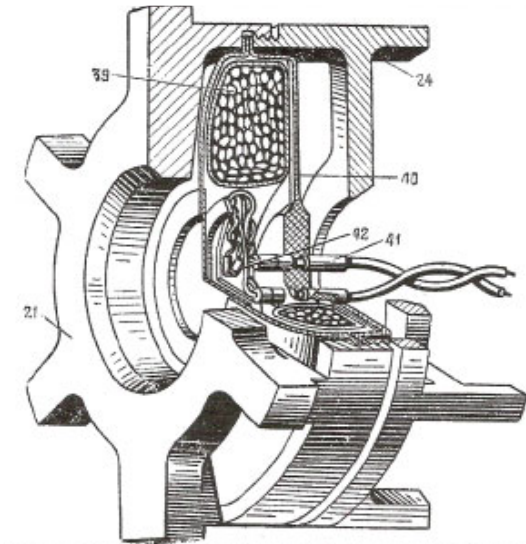


Figure 5.8 The BM-21 igniter ejecting burning pellets in both direction

The largest rockets may have a so-called pyrogen igniter. This device is like a rocket motor itself, initiated by a squib. The exhaust gases from this device ignite the propellant grain of the main rocket.

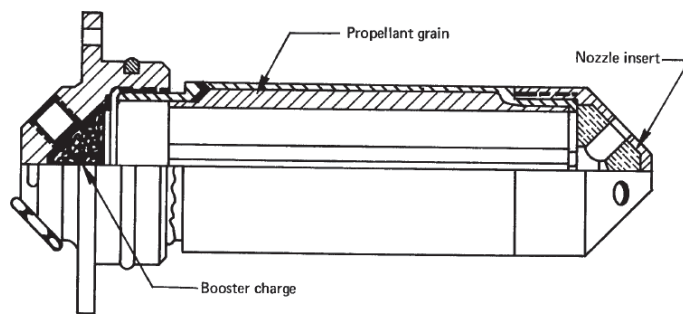


Figure 5.9 A Pyrogen igniter

The igniter is triggered by an electric current (of the order of 1 Ampere) supplied by the fire control system. The current is transmitted through the umbilical chord. The attachment to the rocket is cut as the igniter is spit out or as the chord is broken by the tension caused by the rocket movement.

5.8 Guidance devices

Steering or trajectory correction can be achieved in two ways – aerodynamically, by fins, or reactionary, by thrust vector control.

When the rocket is spinning, it is very difficult to use the fins at the back end of the rocket as steering devices. One way is to let the body spin while the fin assembly does not. However, it may be difficult to achieve this mechanically as the spin of the body will always induce some spin on the fins. The most used way is to use canard fins – 4 small fins extending from the front part of

the body, usually integrated with the fuze. On a spinning rocket, this part should be despun in order to ease the control. This system is used at the guided version of MLRS.

6 Rocket artillery ballistics

6.1 Interior ballistics / propulsion

The interior ballistics of rockets is different from that of guns and rifles. In most rockets only a fraction of the fuel has been consumed when the rocket leaves the launcher. Thus the exterior ballistics phase starts before the interior ballistics phase is over. This phase will therefore have aspects of both interior and exterior ballistics.

6.1.1 Fuel burning

From a purely dynamical point of view, the best way to propel a rocket is to consume all the fuel in the shortest time possible. However, such an approach will converge into a conventional gun barrelled system. That would, however, require equipments that is as heavy and rugged as those of guns. The main advantages of rockets over guns could then not be exploited. They are

- relatively low and smooth acceleration
- lighter and less robust constructions for both the launcher and the warheads
- possibilities to reach longer ranges
- less mechanical stress on the crew in terms of blast waves

Artillery rockets have almost exclusively used solid fuel propulsion. Although liquid fuel has been used in the past, such propellants are now only used for tactical and strategic rockets.

As opposed to guns, where the fuel is found as a granulate of rather small and fast burning powder grains giving a very large surface, the rocket fuel usually has the shape of a unitary grain, or a very small number of grains. The burning rates are also slow compared to gunpowder – a few centimetres per second.

The larger rockets will usually have its fuel as one unitary grain that is cast inside the motor tube. Such grains are usually star shaped in the sense that they have an internal cavity, with a star shaped cross section. The star shape provides a reasonable burning surface and also ensures that the surface area is close to constant throughout most of the burning phase.

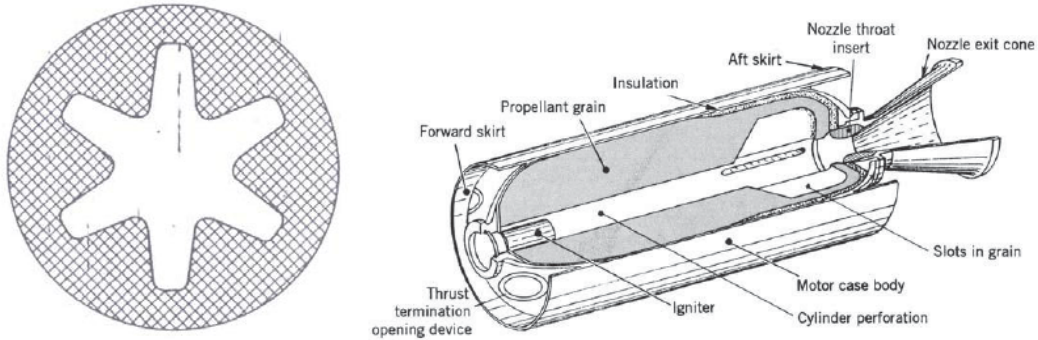


Figure 6.1 A modern grain configuration

The alternative to one star shaped grain is to have a small number (e.g. seven) of tubular grains placed inside the motor chamber. Here the tube shape ensures that the burning takes place both on the inside and the outside face of the grain which gives a quite stable surface area. Older Soviet rockets usually had this configuration. (see figure above [7]). This alternative is somewhat simpler as the casting inside the chamber is avoided. (figure 7.1-right).[12]



Figure 6.2 Cross sections of old propellant grain configurations (left - 140 mm; right - 240 mm)

The guiding factor for construction of a rocket motor chamber is to let the combustion gases exit through the nozzle with as high velocity as possible while maintaining an internal chamber pressure not exceeding the level where the chamber will be blown apart.

The burn time for the motor is typically a few seconds. In the example below, showing thrust as a function of time is a result of the grain shape. At a certain time (in the figure below at 1.6 s at 25°C ambient temperature), the grain is burnt through (web burn-through) at which the thrust falls abruptly. However, the motor may continue to burn for another few seconds until the grain slivers are completely consumed. The burn time is very dependent on the initial temperature of the fuel. In extreme low temperatures the burn time may be twice as long as in hot conditions. However, the total impulse, quantified as the area under the thrust curve is less affected. The impulse is just a couple of percent higher at the high temperature compared to the low one. In terms of rocket velocity at burn-out, the effect is somewhat larger than that.

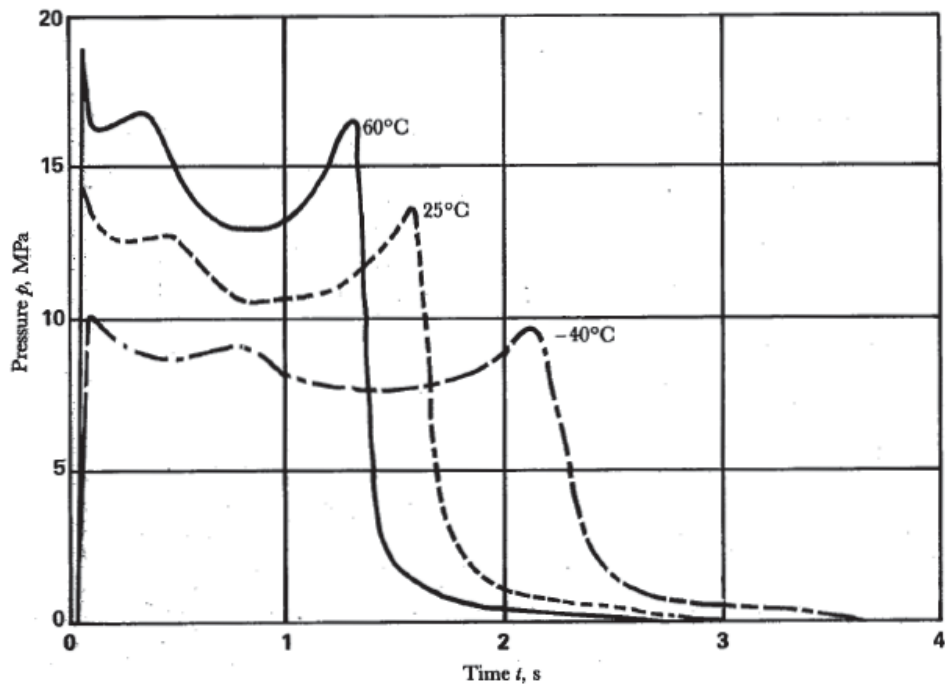


Figure 6.3 A typical thrust profile at three different ambient temperatures [14]

Specific impulse

The term specific impulse expresses the propulsive quality of the rocket propellant. The purpose of the propellant is to increase the momentum of the vehicle. That again is depending of speed which the exhaust gases from propellant can gain.

The Specific Impulse, I_{sp} , is expressed in two ways – as speed or as time. When given as speed it is simply the exhaust velocity – as time it can be considered as the time at which one kilogramme of the propellant can maintain a force of 1 Newton.

Modern solid rocket propellants have an I_{sp} in the range of 210 – 250 s. Liquid propellant fuel can reach an I_{sp} of around 450 s.

An example: The M26 rocket has a fuel content of 98.4 kg with an I_{sp} of 239 s. Assuming that the force is constant for 1.8 s, this force becomes

$$F = \frac{I_{sp} m_p g_0}{t} = \frac{239s \cdot 98.4kg \cdot 9.82ms^{-2}}{1.8s} = 128.3kN$$

6.1.2 The rocket equations

The basic equation relating the velocity of the rocket to the payload and the amount of propellant is the so-called Tsoikovskiy's equation¹ giving the final velocity of the rocket at burnout as

$$v = v_e \log \left(\frac{m_t}{m_p} \right)$$

where v_e is the exhaust velocity, m_t is the total mass of the rocket at ignition and m_p is the payload². The exhaust velocity is of historical reasons mostly written as $v_e = I_{sp} g_0$ where I_{sp} is called the specific impulse and g_0 is the standard acceleration of gravity. (see box above)

Having found the exhaust velocity, the thrust of the rocket motor is simply given as

$$T = (\rho_f v_e^2 + p_e - p_0) A_e$$

where A_e is the nozzle area, ρ_f is the gas density at the nozzle, p_e is the pressure at the nozzle and p_0 is the ambient pressure. The shape of the nozzle is the determining factor for p_e and thus the efficiency of the rocket. This equation also tells us that the performance increases with lowering ambient pressure reaching its optimal performance in vacuum.

6.1.3 Rail phase movement

Before and during firing the rocket is usually not free to move along the rail. The rocket is generally held at the back end of the rail by some retaining device. Apart from avoiding unintended movement while under transport and loading, this device also have the purpose of letting the thrust build up until it has reached a certain level before the rocket is released. This ensures better control of the launch velocity and better consistency of the impact point. The retaining device may be a set of bolts that breaks at a certain force (shear bolt). The strength of the shear bolts is for MLRS around 5 kN. The negative aspect of a retaining device is that it may generate a vibrational movement in the launcher that negatively affects the accuracy.

As will be explained later, most systems induce a moderate spin on the rocket during launch. This is not for stabilizing the rocket, but to even out asymmetries in the thrust and the drag and thereby improving the accuracy. Many tubular launchers have helical rails on the inside of the tubes in order to induce spin on the rocket. The rocket has to be fitted with knobs or lugs that follow the helical rails during launch and thus induce spin to the rocket. These lugs are usually located at the hinge of the wrap-around fins in order to minimize the drag they may cause during the flight of the rocket. Most systems seem to induce a right turned (clockwise) spin – the same direction as with most guns and rifles. The MLRS induces a left turn for whatever reason.

¹ Named after the renowned Russian rocket designer Konstantin E Tsoikovskiy (1867 – 1935)

² In this context, the payload is the rocket mass excluding the fuel

Spin stabilized rockets, i.e. rapidly spinning, also seem to rotate to the right as a general rule. However, it is known that the original Russian 240 mm M-24 rocket was left spinning. It is not known whether later foreign version of this projectile was made the same way. A subtle advantage of left spin is that it results in a drift that is opposed to the Coriolis force – as long as the rocket is used on the northern hemisphere.

6.2 Launch dynamics

6.2.1 Windage jump

The rocket leaves the launcher at a relatively low speed (40 – 80 m/s). At this stage, any wind across the tube axis will affect the flight of the rocket. The part of the rocket that has passed the tube opening will be subject to the wind force while the rear end of the rocket is attached to the rails. This may make the axis of the rocket to deviate slightly in the direction of the wind. In MLRS this effect is minimized as the rails only occupy the rear half of the tube and the rocket then moves freely through the forward half of the tube. In Russian systems the rail extends along the whole length of the launch tube.

6.2.2 Launcher movement

As mentioned above, in order to increase the launch velocity, the rocket movement may be obstructed until a certain thrust has built up. During this phase, the launcher is subject to a recoil that may result in a slight movement or shaking of the launcher. This may result in a deviation of the direction of the rail and even a pitching or yawing motion at launch with a certain inaccuracy as a result.

After the release of the rocket, friction between the rocket and the launch tube will inflict some recoil, but this is quite small. If spin is induced by the launch tube, the rotational momentum must be counter-balanced by an equal momentum to the launcher. Usually the inertial moment of the launcher by far exceeds the axial inertial moment of the rocket. The turning of the launcher will thus be minimal. However, for light launchers this effect may be significant.

Rockets with self induced spin, or no spin at all, have the most benign effect on the launchers. Consequently, such rockets may be launched from very primitive launchers like a simple rack, a tripod or a light towed multiple launcher.

6.3 Exterior ballistics

Fin stabilized projectiles, like a mortar bomb, have a high degree of stability. In order to do ballistic calculation, the so-called point mass model (PMM) is sufficient. This kind of ballistics is characterized by having the air drag coefficient as the only aeroballistic coefficient needed in the model. The axis of the projectile is always assumed to be aligned the trajectory or its velocity. Thus there is no need to calculate the attitude of the projectile.

For spin stabilized projectiles, like those fired by tube artillery, the so-called modified point mass model (MPMM) is applied for ballistic calculations. Here a number of aeroballistic coefficients is applied, like drag, lift, spin damping, overturning moment etc. Both the trajectory and the attitude of the projectile axis are calculated through two coupled differential equations. The method is not able to represent the swirling motion taking place during one revolution of the projectile, but have expressions determining the average attitude during one revolution.

The ballistics for rockets, and indeed for spinning rockets, should be described by using the so-called six degrees of freedom model (6DOF). This may be characterized as a physically complete solution of the ballistic equation. Apart from keeping track of the position of the projectile, the attitude of the projectile during a revolution is solved along with the phase of the revolution. The method requires access to a high number of aeroballistic (aerodynamic) coefficients, some of which may be very difficult to obtain. In some instances, even second or third order coefficients are required. The accuracy of and availability to these coefficients is the main limitation of the method. One should, however, bear in mind that the ballistic equations will not exactly represent nature. The basic limitation is that the aerodynamic coefficients are represented as linear functions of the angle of attack of the projectile.

The quaternions

Rocket exterior ballistics is usually solved by 6DOF-models. Some of these models, like one of those applied to MLRS [13], make use of quaternions. Hidden behind this name is a type of algebraic entities, discovered and developed by the Irish mathematician William Rowan Hamilton (1805-1865) in the mid 19th century. Quaternions constitute an extension of the well-known complex numbers. While complex numbers have a real part and an imaginary part, quaternions consist of one real part and three imaginary parts and can be generally written as

$$Q = q_0 + q_1i + q_2j + q_3k$$

where $q_0 \dots q_3$ are scalar magnitudes and i, j and k are the imaginary units. An important point here is that the product between these units is non-commutative giving $ij = k$, $ji = -k$, $jk = i$, $kj = -i$, $ki = j$, $ik = -j$ and $i^2 = j^2 = k^2 = -1$ from which it follows that $ijk = -1$, $jik = 1$, etc.

The quaternions are well suited to describe the orientation or attitude of an object in space. A change in orientation is represented as a multiplication of the current quaternion with another quaternion describing the change. The use of quaternions makes the ballistic equations more compact, but also more abstract, which may be the reason for their limited use. The theory of quaternions was a breakthrough in multidimensional algebra, but it was soon overshadowed by more general theories. More recently quaternions have found their renaissance in the description of movable bodies in computer games.

The exterior ballistic phase of most rockets has two distinct phases:

- the boost phase in which the motor burns and the rocket is accelerating
- the coast phase in which the motor has completely burnt out giving no contribution to any forward force
- there is also an intermediate phase in which the motor force is too weak to generate acceleration, but the motor still gives some forward force or contributes by reducing the base drag of the rocket

The most critical parameter for the exterior ballistics is the aerodynamic drag coefficient. This parameter has several components:

Wave drag

The wave drag is the component of the drag caused by the parts of the rocket facing the airstream, in particular the nose part. Nose wave-drag is influenced by the fineness ratio, nose shape, and Mach number. For preliminary design estimates, the nose shapes are mainly cones and ogives.

Skin friction drag

Friction drag results from the boundary layer airflow over the rocket surface. Shear stress is imposed on the external surface of the rocket due to the velocity gradient in the boundary layer. The magnitude of this shear stress is a function of the position of transition from laminar to turbulent flow, and therefore of the air velocity. Skin structure caused by surface treatment or painting affects the skin-friction contribution.

Drag due to fins

The fins contribute to wave drag, friction drag and base drag. The critical parameters determining the fin drag are their length, width and thickness, and the shapes of the front and rear edges. Whether they are of the fixed type or they are wrap-around fins is of less importance.

Base drag

The base drag is caused by the pressure forces resulting from airflow separation at rearward facing steps, especially the body base and the nozzle section. The low pressure behind the base works as a suction force that slows the rocket. As long as the motor burns the rear pressure is high and the base drag is absent.

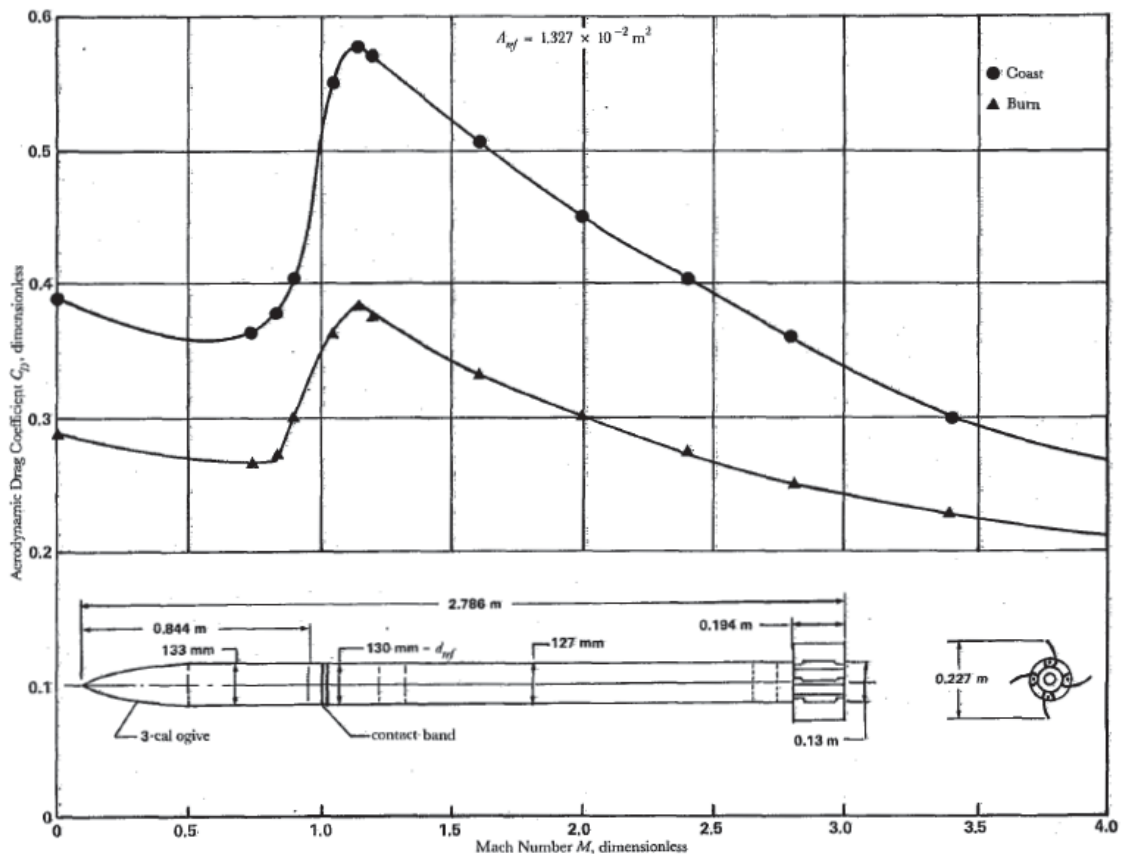


Figure 6.4 Air drag coefficient (C_D) for a 130 mm rocket showing the difference in drag during boost phase and coast phase. The figure is taken from MIL-HDBK-762 [14].

Other aerodynamic coefficients that are accounted for are:

The lift coefficient (C_L).

This is the force acting perpendicular to the velocity vector and caused by the angle of attack between the rocket axis and the trajectory tangent.

The Magnus³ force coefficient (C_{Npa}) (spin stabilized rockets only).

This force, which is caused by any difference in the surface stream velocity on one side of the projectile compared to the other, works perpendicular to the angle attack. Its contribution is mainly small and is present only when the rocket has a pitching/yawing motion. Wind from the side will also result in Magnus forces.

The overturning moment coefficient (C_{Ma}).

This term quantifies the tendency of the rocket to overturn. A slow spinning or non spinning rocket will have a positive coefficient as long as the fins are closed. A positive coefficient means that an overturning disturbance will increase with time. As the fins open, the coefficient becomes negative contributing to the stabilization of the rocket.

The pitch damping moment coefficient (C_{Nq}).

This is mostly used together with the previous coefficient, but this coefficient is not affected by the fins. A rocket body will usually have a negative damping coefficient which means that a rotation around an axis perpendicular to the rocket axis will be dampened.

The spin damping (and driving) coefficient (C_{lp}).

A spinning object will tend to slow its spin due to the air streaming along the body surface. A rocket with fins may also have a spin driving moment that is realized by canting the fins, asymmetric fin edges, or flaps at the nozzle exit diverting the exhaust gases. For spin stabilized rockets the spin driving moment is extremely high during the boost phase.

The Magnus moment coefficient (C_{Mpa}) (spin stabilized rockets only).

This momentum, which is caused by any non-zero Magnus force, works perpendicular to the plane spanned out by the rocket axis and the Magnus force. Like the Magnus force, it is usually small, but it may affect the stability of the spinning rocket.

6.3.1 Stabilization

In general, there are two main type of stabilization – by spin (gyroscopic stabilization) and by fins (aerodynamic stabilization)

The first artillery rockets had fixed fins for stabilization. Being launched from a straight rail, there were no possibilities to obtain spin during launch. A non-spinning fin stabilized rocket is a quite simple and safe design. The prime drawback is its lack of accuracy. Any asymmetry in design or propulsion may seriously affect the accuracy. Likewise, the disturbances caused by wind will do the same.

Gun artillery shells are spin-stabilized induced by the gun rifling. Likewise, rockets can also get their spin by helical rails on which they ride during launch. However, as rockets have a rather moderate launch velocity, this spin will be much lower than for gun artillery and insufficient to

³ Named after the German physicist Heinrich Gustav Magnus (1802- 1870)

fully stabilize the rocket. A better solution is to have a rocket motor with a multiple nozzle arrangement where each nozzle is mounted eccentrically and inclined to the rocket axis so that the motor both gives forward thrust and angular momentum inducing spin. In this way, a spin rate exceeding 300 rps (revolution per second) is possible which is sufficient for stability. Spin driving motors will to some extent decrease the range of the rocket, but at an acceptable rate.

Spin-stabilized rockets are known to have better accuracy than rockets that only have fins for stabilization.[14]

The ballistic aspects of spin-stabilized rocket are addressed in [15]

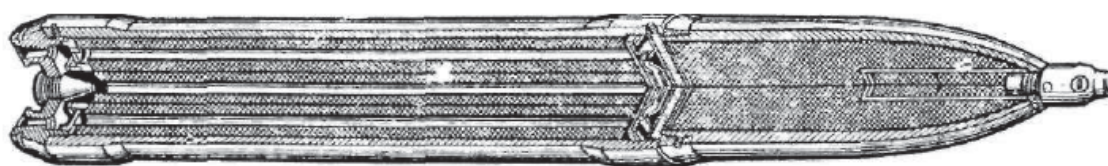


Figure 6.5 The spin stabilized rocket for RPU-14 towed system.



Figure 6.6 Test firing of a 107 mm spin stabilized rocket (MKEK)

It is not possible to spin-stabilize a rocket for which the length to diameter ratio is 7 or more. This is the reason why such rockets have a more stubby shape than modern rockets like, MLRS, or Uragan. The limitation in length also has the consequence that the effective range of such rockets is limited to hardly more than 10 km. The limitation in length limits the amount of fuel to weight ratio.

Fins are incompatible with fully spin-stabilized rockets, as the fins themselves tend to dampen a high spin. However, as fin-stabilized rockets will benefit from some degree of spin, some fin

configurations have a spin driving moment that is obtained by having a slightly inclined mounting or by having an asymmetric profile.

An advantage with spin stabilized rocket is that they, just like a gun artillery projectile, may have a smooth surface which diminishes the radar cross section. Finned rockets, even those with wrap-around fins have a far larger radar cross section and may be easily detectable by an artillery locating radar.

Spin stabilization (elementary theory)

Spin stabilization is obtained by having multiple nozzles that are inclined with respect to the rocket axis and situated eccentrically to induce spin moment.

The number of nozzles may be between 6 and 16. Irrespective of the number of nozzles a simple theory for the boost phase can be outlined as follows.

Consider a rocket with mass m and with a motor that yields a thrust T . The rocket has an axial momentum of inertia I_x . The nozzles are inclined an angle θ with the axis and their opening are situated at a distance r from the rocket axis.

The axial acceleration then becomes

$$\ddot{x} = \frac{T}{m} \cos \theta$$

while the rotational acceleration becomes

$$\ddot{\phi} = \frac{Tr}{I_x} \sin \theta$$

Thus, disregarding the aerodynamic drag, the ratio between the rotational and axial acceleration, is found by

$$\frac{\dot{\phi}}{\dot{x}} = \frac{mr}{I_x} \tan \theta$$

As an example, consider a rocket with 240 mm calibre with 200 kg mass. Assume that the momentum of inertia is 1 kgm^2 , the nozzles are 0.1 m from the axis and $\tan \theta$ is 0.2. The ratio between the rotational and axial velocity then becomes 4 rad/m. The implication of this value is that if the rocket leaves the launch tube at a velocity of 30 m/s, the spin is 120 rad/s. This rate is sufficient to make the rocket aerodynamically stable.

Calibre	Country of origin	Length (m)	Mass (kg)	Range (km)	Explosive mass (kg)	Spin or velocity
107 mm	TUR	0.84	14	8.5	2.5	370 m/s
128 mm	SER	0.81	23	8.5	4.0	444 m/s
140 mm	RUS	1.08	40	9.8	4.2	370 rps
240 mm	PRC	1.12	112	10	27	250 rps
333 mm	IRN	1.82	255	13	60	

Table 6.1 Some examples of spin stabilized rockets. These are the standard configurations. Some calibres have rockets with enhanced range, but with smaller payloads.

6.3.2 Braking devices

A drawback with many artillery rocket systems is the relatively large minimum range. A long minimum range is not just a problem when faced with short range targets, but also when targets are found behind high crests. It is also problematic to obtain the sufficient accuracy at short ranges as the angle of fall will be very shallow and small inaccuracies up or down will result in a substantial error in impact point.

Gun artillery can circumvent such problems by selecting at smaller propellant charge, but rockets have just one charge. The problem may be partially solved by giving the rocket a higher air drag, making the trajectory shorter and more curved.

Some systems, of which the most pronounced is the 122 mm BM-21 and its derivatives, have a braking device implemented and rings, a narrow ring (around 80 mm diameter) for moderate reduction and a wider ring (122 mm diameter) for a more drastic velocity reduction. The ring is put over the fuze part, and serves as a kind of spoiler, For BM-21 the ring reduces the minimum range from 5 km to 1600 m. Such a ring is inserted at the interface between the fuze and the warhead, at which the BM-21 rocket has a diameter of 64 mm.

The ring will increase the air drag and make the trajectory more curved. The air drag curve will approximately be multiplied by a certain factor depending on the diameter of the brake ring.

This kind of device was originally used on the now obsolete Soviet system 140 mm M-14. It is not known for certain whether it is used on other systems than 122 mm.

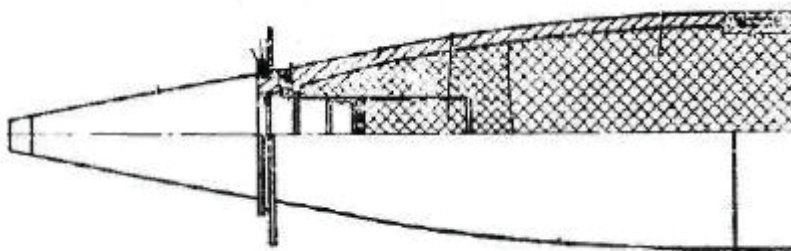


Figure 6.7 Braking system / spoiler on BM-21 (both small and large ring fitted)

6.3.3 Coriolis' force

The Coriolis'⁴ force is not a real force, but virtual force due to the rotational movement of the reference system. It induces a drift to the right on the northern hemisphere and to the left on the southern one. It also depends on the compass direction of the fire.

When firing at distances beyond 10 km the Coriolis' force must be included as its contribution may exceed more than one per cent of the range of the rocket. However, there are no principal difficulties with the inclusion of this force in the equations. The trajectory calculation will consequently depend on the latitude of the firing post and the azimuthal direction of fire. In order to include this force a three-dimensional model must be applied.⁵

6.4 Trajectories

Appendix D contains a collection of trajectories and other characteristics for some of the most common rocket artillery systems.

6.5 Accuracy of delivery

There are many factors affecting the accuracy of rocket fire. Statistically they are of two different kinds:

Systematic error

- those errors that repeat themselves from rocket to rocket resulting in a bias in the impact pattern of the fire

Random errors

- those that are completely random from rocket to rocket resulting in a dispersion within a salvo of rockets

In general, every error component has a vector character. If every component is independent of each other, they should be summarized as vector and not as scalars. Some error components, however, may not be completely independent. If these are summed vectorially, a covariant component should be subtracted from the sum.

Assuming that there n error components with variances $\sigma_i^2, i = 1, \dots, n$ and with correlation coefficients $\rho_{ij}, i, j = 1, \dots, n$, the total error can be written as

$$\sigma_{total}^2 = \sum_{i=1}^n \sigma_i^2 - 2 \sum_{i=1}^n \sum_{j=1}^n \rho_{ij} \sigma_i \sigma_j$$

⁴ Named after the French mathematician Gaspard-Gustave Coriolis (1792 – 1843)

⁵ The Coriolis force may be felt if sitting in a merry-go-round. Try throwing a ball to a friend sitting in a distant seat. The ball follows an oddly curved path as seen from both you and your friend. However, from an observer standing on the ground the curve looks normal.

Often the correlations coefficients are zero, indication the actual error sources are independent.

6.5.1 Random errors

Random errors are mostly connected to the rockets. Examples are

- variations in mass
- variation in fuel mass
- variations in surface finish affecting the skin friction drag
- variations in the shape of fins
- variations in fuze timing (if applicable)
- variations in centre of gravity and moments of inertia
- thrust misalignment
- unpredicted launcher movement and vibrations
- short term meteorological variations

6.5.2 Systematic errors

The systematic errors are more of operational inaccuracies and environmental variations like:

- difference between the actual and measured or predicted meteorological state
- deviations of the ammunition lot properties compared to the standard properties
- aiming errors
- errors in target acquisition data
- error in launcher position and orientation
- incomplete ballistic models
- deviations between actual and anticipated ammunition temperature

6.5.3 Wind induced errors

Rocket artillery projectiles have two distinct phases:

- the boost phase, in which the fuel burns and the rocket accelerates
- the coast phase, in which there is no propulsion and the projectile flies like any other projectile

The effect of wind is opposite in the two phases. In the latter phase, the projectile is affected in a “normal” way and it diverts in the direction of the wind. In the boost phase however, there is a net acceleration of the rocket and the fins will align the rocket with the airstream felt by the rocket. If the wind comes from the right, the net airstream will divert to the right and consequently the rocket will also divert to the right. The rocket will thus, somewhat counter-intuitively, move against the wind. The tendency to move against the wind will be in proportion to the net acceleration, i.e. the higher the acceleration, the more it will divert.

The boost phase will take place in the lower few hundred meters of the atmosphere. Although the wind speed is low near ground and has a steady increase with altitude, the variability of the wind

is most pronounced in the lowest atmosphere. At hundred meters altitude wind variations take place at a time scale of a few minutes. This effect is especially pronounced when in broken terrain. This implies that it is almost impossible to forecast the boost phase wind and that any measurement of this wind will be valid for just a few minutes.

When firing at ranges beyond 20 km, this factor is the most serious contribution to inaccuracy of the rocket. Compared with tube artillery fired at the same range, rockets tend to have an average error in the hit point that is twice as high. A typical error produced by tube artillery is 0.9% of its range, while rockets typically may have 2% error.

6.6 Reported accuracy

The value of the accuracy is known for the most prominent rocket systems. However, for many of these reports the concept of accuracy is not well defined. The numbers are not defined according to random or systematic error contributions. Often it is not even specified whether the numbers refer to the probable error or the standard deviation with respect to the aim-point.

There are no standards on how to define average conditions for the state of the troposphere. As an example, the term average wind may be defined as

- the time average
- the median value of a regularly sampled set of values
- the surface wind average value
- the ballistic (see box) wind average value

Ballistic wind

The term ballistic wind is a term used in gun artillery ballistics for calculating the effect of the wind. It is based a vertical sampling of the meteorological state of the atmosphere. The sampling is made at specified layers (zones) of the atmosphere and the ballistic wind is weighted average of the wind measurements for the part of the atmosphere through which the projectile moves. The weighting is done according to how much the wind in certain zone potentially may affect the total accuracy. In addition to ballistic wind, term like ballistic air density and ballistic temperature can be defined in the same way. However, while temperature and density are scalar values, the wind is defined as a 2-dimensional (horizontal) vector.

The definition of ballistic wind can be found in [16]

The table below shows some values for accuracy of some common rocket systems. The values given are for the maximum firing range. At shorter range, the values can be assumed as being proportional to the range raised to $3/2$.

System	Max. range (km)	Random errors (m)	Systematic errors (m)	Total error for single fire (m)
107 mm	8	70 x 100	45 x 90	80 x 130
122 mm (portable)	11	100 x 150	90 x 180	130 x 230
122 mm	20	110 x 180	120 x 240	160 x 300
227 mm	32	160 x 360	120 x 240	200 x 430
240 mm	11	180 x 400	110 x 220	210 x 460
300 mm (guided)	70	-	-	150 x 150

Table 6.2 Some assumptive values for accuracy of some selected systems at maximum firing range. For the two first systems, the error will vary according to the quality of the launcher.

6.7 Direct fire

Direct fire by artillery is normally not used. The need to use rockets in direct mode may be as a last resort in a defensive operation, when no other means are available. The firing range in direct fire may be limited to 1000 m.

Many of the vehicle borne rocket systems have a minimum and maximum angle of elevation. The maximum value may be like 50 - 55° and the minimum value may be around 10°. Such systems cannot be used in a direct mode as the required elevation will just be a few degrees. It can however be circumvented by using a braking devices like rings at the front tip of the rocket, or by placing the vehicle in downhill slope facing the target.

Most portable or towed systems can easily be used in direct mode provided that a simple aiming device is adapted to the launcher. On improvised systems, any restriction on elevation can also easily be circumvented.

6.8 Submunition ballistics

Submunition payload is quite common for rocket artillery munitions. As mentioned elsewhere in this report, there is a wide variety of submunitions.

The main reason for using submunitions is to spread the effect of the payload over an area. If the submunition is inadequately spread, there will be an oversaturation of effect inside the area, and much of the effect will be spilled. The size of the area should be so large that oversaturation is avoided against any kind of target. On the other hand, the area can not be so large that it exceeds the size of a typical target, thereby spilling some of the effect outside the target and increasing the possibility of collateral damage.

6.8.1 Ejection

One way to spread out the payload would be to split the casing covering the payload in two pieces, exposing the payload to the air-stream. The possible disadvantages are that the spread could be small, the submunitions could be damaged by interference with the motor shell and the process could have limited repeatability. Consequently, most payloads contain a centre charge that blows the submunitions away from the canister. Such a charge can eject the submunitions with a speed exceeding 100 m/s. The charge itself can be a high explosive charge or a powder charge.

The splitting of the casing can be due to the inside pressure caused by the centre core burster (CCB). Alternatively can be a separate process as the casing is split by the detonation of an explosive cord stretched along the inside of the casing. (see figure 7.8)

The timing of the centre charge and also of the detonating cord is governed by the main fuze of the rocket warhead.

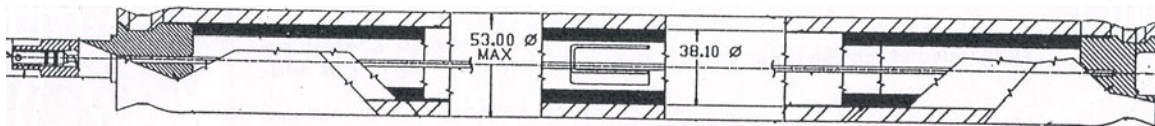


Figure 6.8 The expulsion charge of the MLRS M26 rocket

The next two figures show an example of the trajectory of the bomblets expelled from a MLRS rocket and the impact pattern on the ground.

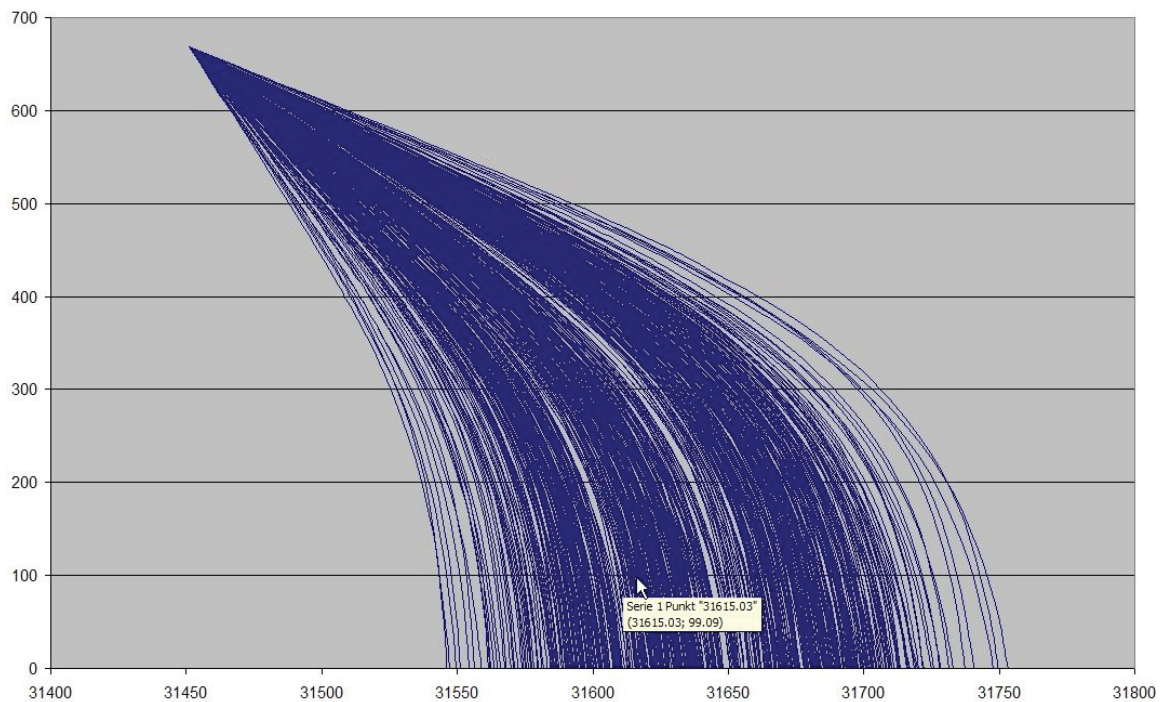


Figure 6.9 Bomblet trajectories for M26 cluster rocket. The ejection takes place at a height of 760 m.

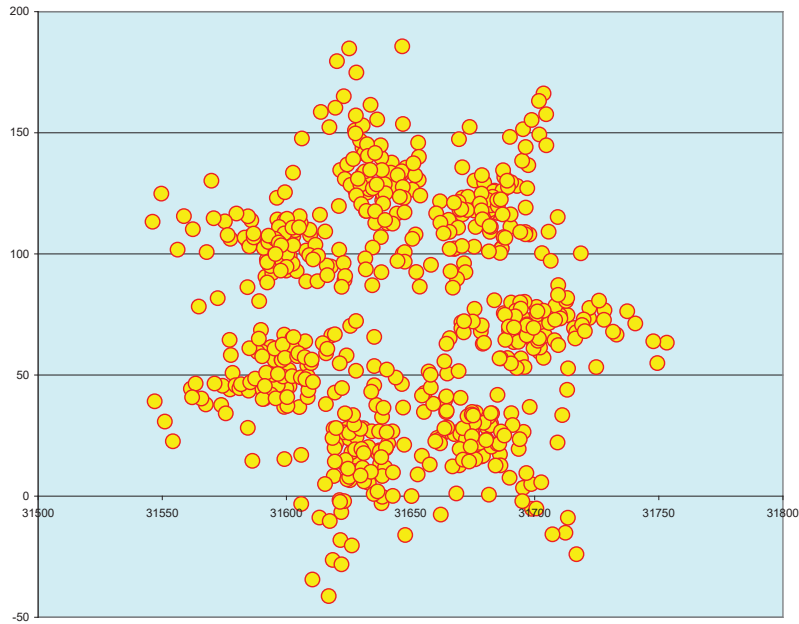


Figure 6.10 Dispersion pattern of M26 cluster munition rocket

6.8.2 Descent phase

The ballistics of the submunition is usually a quite simple process that can be modelled by 2-dimensional ballistic models. Most of the submunition has some kind a stabilizer, like a ribbon or streamer, or flaps or fins avoiding any chaotic rotation of the munition.

There are also some examples of a two stage descent phase, where initially a number of packages containing several submunitions (literally sub-submunitions) are thrown out. The packages are then set to open after a certain time at which the true submunitions are released.

7 Rocket payloads

7.1 Fragmentation high explosive charges

This is the classical and simplest kind of warhead. The payload is just a batch of high explosive intend to detonate at impact with the ground, or in some cases a few meters above ground. Apart from the explosive charge, the warhead contains a fuze with a detonator to initiate the high explosive charge. Before 1970, almost all rocket artillery warheads were of this kind.

Explosives like TNT or RDX confined in a metallic container have their primary effect by ejecting fragments and, to less extent, by emitting a pressure wave in order to destroy structures and incapacitate humans.

7.2 Enhanced effect warheads

Some explosives or explosive mixtures have a blast pressure character different from that of a conventional explosive.

In some cases, it may be desirable to have warheads with an enhanced pressure wave. Actual targets could be urban areas, people in shelters with strong overhead protection. There are basically two ways to achieve this – by thermobarics or by fuel-air explosives.

7.2.1 Fuel-air explosives (FAE)

Fuel-Air Explosives (FAE) in military munitions are based on the same principles that cause many accidental explosions in buildings, silos and industries – deflagration or detonation reactions of highly combustible materials in mixture with air. Military FAE however use these principles intentionally for generating intensive air blast and heat impulses for destruction of ground forces (personnel and vehicles), infrastructure, and to set off mines in a mine field.

The main advantage of FAE systems in general is the fact that only a part of the explosive energy has to be delivered at the target. Additional energy is extracted from the oxygen in the air. The combustible part are usually dispersed and mixed with the air by a smaller explosive charge and ignited at a stage when the mixture with air is supposed to be optimal.

The combustible part is often one of the following compounds:

- ethylene oxide (C_2H_4O)
- propylene oxide (C_3H_6O)
- decane ($C_{10}H_{22}$)
- kerosene (C_nH_{2n+2})
- mixture of 51% methyl acetylene (C_3H_4), 26% propane (C_3H_8) and 23% propadiene (C_3H_4)

The blast effect of a FAE charge may be 2 – 3 times greater than the same amount of TNT.

U S Army implemented FAE in a rocket system called SLUFAE (Surface Launched Unit, Fuel Air Explosive) using the rocket M130 carrying 45 kg FAE. The rocket had a calibre of 345 mm and a weight of 85 kg. Its range was quite short as it was primarily intended for clearing minefields. The development started in the 1970s, but the system never entered production.[17]

FAE warheads are not yet very widespread, but it is known that the Russian Uragan and Smerch systems have FAE-ammunition. It is not known whether these munitions have been exported. Also the Russian TOS-1 Buratino⁶ 220 mm system, fired from a modified main battle tank, has FAE payloads.

⁶ Buratino is a Russian fairy-tale figure whose parallel is the American Pinocchio



Figure 7.1 220 mm TOS-1 systems firing FAE rockets

7.2.2 Thermobaric explosives

FAE may be called a two stage explosive, involving dispersion and detonation. Its relative, the thermobaric explosive (TBX) is more of a one stage explosive like conventional ones. Thermobaric explosions involve a conventional detonation followed by rapid burning of detonation products with the surrounding air in a deflagration regime close to the detonation. The initial detonation disperses detonation products and unreacted fuel into the air where detonation products, the fuel and the ambient oxygen continue to burn. The reactions of detonation products reinforce the pressure wave from the initial detonation and create a long-lasting moderate wave that will travel down streets and corridors and around corners.

This technology has been implemented in Russian munitions for around two decades. Some Western countries are also in the process of acquiring this technology.

The original TBX was a mixture of magnesium powder and isopropyl nitrate (IPN) surrounding a conventional explosive charge. Later aluminium powder has replaced the magnesium and liquids like nitramine, ammonium nitrate, ammonium chlorate or ethyl nitrate have been applied.

The effect TBX may give a pressure pulse which is twice as high and with a longer duration than that of TNT. In addition, an extensive flame zone with around 0.7 s duration is also created.

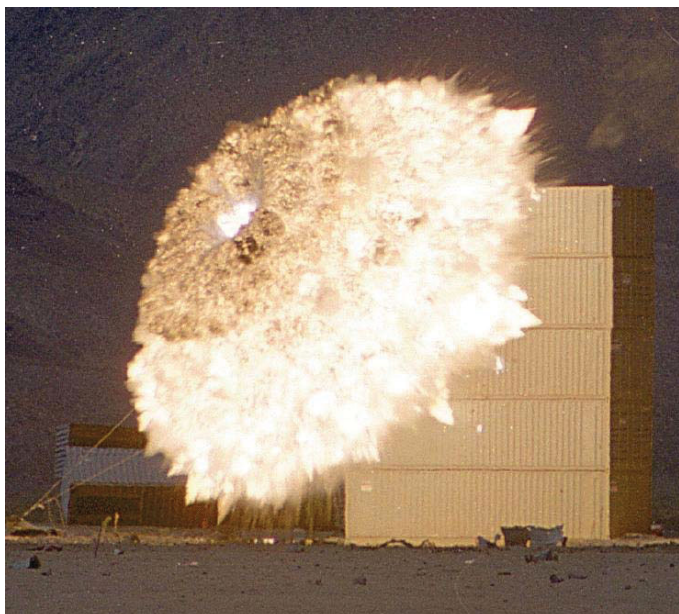


Figure 7.2 Explosion of a thermobaric charge [18]

7.3 Submunition payload

Submunition payloads are also known as cargo payload and even as cluster warhead. The first type of submunition was probably mines, either of the anti-personnel or the anti-tank type. Later many other type have been deployed including

- explosive and fragmenting bomblets (ICM – Improved Conventional Munition)
- explosive and fragmenting bomblets with a shaped charge (DPICM – Dual Purpose Improved Conventional Munition)
- incendiary bomblets
- subunits generating electromagnetic noise (ECM – Electronic Countermeasure)
- anti-tank mines
- anti-personnel mines
- advanced anti-armour submunitions

Submunitions are normally ejected from the carrier at a certain altitude, ensuring an adequate dispersion of the bomblets without compromising the precision of the delivery. In some systems, the time of ejection is controlled by the fire control system specifying or actively setting the timing of the fuze. In some occasions it may be useful to override this setting in order to minimize the dispersion or to reach targets situated behind high crests. An automated fuze setting set by the fire control system can easily be circumvented by specifying a false target altitude.

The maximum spread of the submunition is mainly determined by the mass and, to some extent, the size of the submunition units. If the expulsion takes place at an altitude that ensures that the submunition reaches the natural free fall velocity, the impact velocity will also be determined by the mass and size of the submunition. Expulsion at an altitude exceeding the optimum height is

pointless as it will just marginally increase the dispersion of the submunition, but decrease the accuracy of the bombardment.

The table below shows some examples of typical ballistic properties of common submunition units.

Sub-munition	Carrier	Type	Mass (kg)	Cross-section (cm ²)	Expulsion height (m)	Free-fall velocity (m/s)
M77	MLRS/M26	DPICM	0.23	14	~500	40
KB-1	M67 Orkan	DPICM	0.25	14	~500	(40)
9N235	Smerch	AP	1.9	33	n/a	(70)
SPBE	Smerch	SFW	15.6			30
M74	ATACMS	AP	0.59	270	~1000	50
PTM-3	Uragan	AT	4.9	1750		70

Table 7.1 Ballistic properties of some typical submunition rocket systems

The Russian SPBE submunition is a Sensor Fuzed Warhead that is designed to engage targets that have characteristics associated with armoured vehicles. The sensors are a suite of radiometry, radar, infrared at different wave-lengths, and laser. Usually two or three of these are found in a warhead. The submunition are expelled at high altitude, say 1000 m, and is decelerated by different devices before it enters the search phase 200 – 300 meters above ground. Its shape ensures that the movement of the warhead is nutative⁷ so that it scans the ground along an inward spiralling track. When a possible target is found the warheads ejects at solid projectile weighing around 1 kg and with a speed of around 2000 m/s against the top of the target. Against an armoured vehicle a hit should implicate 20 – 50% probability of a kill.

This kind of submunitions is in development for different types of ammunition for artillery and bombs. However, Russia is so far the only nation that has applied this technology in rocket artillery munition. There were plans to develop a MLRS projectile with this submunition, but these plans seems to have been put aside.

⁷ A *nutation* is a movement where the axis of rotation deviates from the natural axis of the object. In the present case this deviation is around 30°.



Figure 7.3 The search mode of a Sensor Fuzed Warhead



Figure 7.4 Some submunitions in rocket artillery payloads

The performance for submunitions are described in [19].

7.4 Incendiary payload

Some warheads may have the ability to burn and to create fire as its primary effect. It is well known that white phosphorus (WP) has this ability in addition to creating smoke screens. Other materials with incendiary effect are thermite (aluminium powder mixed with iron oxide), and magnesium powder. Liquid hydrocarbons can also be used.

FAC and TBX warhead are sometimes called incendiary warheads, which may be somewhat inaccurate. As indicated above, those warheads should rather be called explosive.

Incendiary warheads are not very widespread as rocket artillery ammunition, but incendiary bomblets have been used in cluster munitions in combination with explosive bomblets.

7.5 Chemical payloads

It is well known that U S Army acquired large amounts of chemical rockets for their 115 mm M91 towed launcher in the 1950s and 1960s. It is probable that such developments also took place in other nations. The rocket was called M55. It was never used in combat and was declared obsolete in 1981. It could carry 4 – 5 kg of either GB (Sarin) or VX agent. Both are nerve gases. [20]

In 1998, U N inspectors found 122 mm rockets with nerve gas in Iraq. It is probable that such ammunition was used during the attack on the Kurdish village of Halabja in 1988 killing more than 5000 civilians. [21]

8 Lethal effects

8.1 Lethal area

Quantifying the effect of warhead is quite complicated. Apart from the effect of being directly hit by the warhead, the effects at distance are the following three:

- *Blast effects* may be the easiest effect to quantify, as the pressure and impulse from an explosion is a function of the charge size and distance. Other factors are of secondary importance.
- *Fragment effects* are more complicated. Firstly it is a problem to assess the initial state of the fragments, i.e. their initial velocity, their weight distribution and their shape. Secondly, the aerodynamic performance is not known with certainty. Thirdly, there is some uncertainty about the effect fragments have when entering a human body. Finally, the exposed area and the posture of the human body are to some extent random.
- *Incendiary effects* are also complicated to describe. They will depend on environment, the victim's clothing, and incendiary components. The short term effect may be benign and vague, while the long term effect could be fatal. Compared to the previous effects, this is of lesser importance and will not be discussed further herein.

Whatever the effect is, it can be quantified by a two-dimensional function $p(x,y)$ which is the probability of being affected by the weapon when the position of the target is given by the ground coordinates (x,y) . The position of the bomblet can be set as origin $(0,0)$, although it is not a necessary premise.

When this injury probability function has been established, the effect of the munition can be stated as a single quantity called lethal area. However, the term *lethal* may sound more dramatic than it is. In military context this means *incapacitation* which may not necessarily imply lethality. This term is defined as

$$A_L = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} p(x, y) dx, dy$$

The interpretation of the lethal area in practical terms is the size of the area that is completely affected by the warhead. In military terms, if the number of targets per area is known to be σ , then the number of targets destroyed by the warhead is found as:

$$N = A_L \sigma$$

Example: A 155 mm artillery shell is known to have a lethal area of around 800 m² against unprotected soldiers in an upright posture. The density of such soldiers in a target area is assumed to be 20 soldiers per hectare, or 0.002 soldiers per square meter. The number of soldiers incapacitated by this warhead will then be 800 m² x 0.002 soldiers/m² = 1.6 soldiers.

When trying to estimate the probability of being incapacitated when being a distance x from the detonation, then the following expression can be used when the lethal area A_L is known.

$$P(x) = \exp\left(-\frac{\pi x^2}{A_L}\right)$$

Example: Returning to the previous example with a lethal area of 800 m²; the probability of being incapacitated at 3 m distance will be 97%, at 10 m it will be 68%, at 20 m 21%, and at 40 m 0.01%.

When multiple warheads are spread out over a footprint area A_F , there will be more or less overlap between lethal areas originating from different warheads or bomblets. As there is no need to kill a target more than once, the total lethal area will become less than the sum over individual areas. The expression for the cumulative lethal area of a cluster bomb containing N bomblets with individual lethal areas A_L each then becomes:

$$A_{L,total} = A_F \left[1 - \exp\left(-\frac{NA_L}{A_F}\right) \right]$$

This formula presupposes that the bomblets are uniformly distributed over the footprint; if not the total lethal area will be even more diminished.

Of course, these approaches can be applied for any warhead against any target, also for quantifying the humanitarian effect of a cluster munition.

8.2 Fragmentation

Fragments usually originate from the casing surrounding the explosive charge of a bomb or a shell. Fragments may come in all sizes and shapes. When the casing has a smooth and even surface, both at the inside and outside, the casing will splinter by so-called natural fragmentation. The fragments will then usually get quite irregular shapes, and cover a wide variety of sizes. A typical shape is the elongated one as in the left figure below, but any shape is possible. Prefragmented ones have a more regular shape as shown in the right picture



Figure 8.1 Examples of fragments. Left – a natural fragment, right – prefragmented fragments[17]

Prefragmentation is made by having grooves or scores on the inside or outside of the shells. The casing is split up preferably along these grooves. Alternatively, spherical particles of a hard or heavy metal can be embedded in a matrix of a softer or lighter material. The spheres will then be the main injuring mechanism. Heavy spherical fragments will also have a far longer range than light or irregularly shaped fragments.

The effect of fragments on humans is determined by their mass and velocity and to a lesser extent by their size and shape.

The initial velocity of the fragments is given by the so called Gurney's equation

$$v_0 = \frac{\sqrt{2E}}{\sqrt{\frac{M}{C} + k}}$$

where v_0 is the initial velocity. M is the mass of the fragmenting material. C is the mass of the explosive. E is the energy content per mass of the explosive. k is a shape factor of the charge. Its value is 0.5 for a cylindrical charge and 0.6 for a spherical charge. The numerator, $\sqrt{2E}$, the Gurney velocity, is found in table 6.1. These values are valid for ideal charges (i.e. perfectly spherical or cylindrical). In reality there will be deviations from these values due to variations in the casing thickness and radius, and due to other non-ideal shapes. However the Gurney equation may serve as a good estimate of the maximum speed of the fragments. Initial fragment velocities are usually between 800 and 2000 m/s.

All fragments, ejected from a certain part of the warhead, get the same initial velocity, independent of the size. The velocity of small fragments will subsequently decrease far more rapidly than larger fragments. This fact can most easily be illustrated by the so called *half-distance* defined as the distance over which the velocity of the fragment will be halved. As an example, consider a fragment with initial velocity of 1200 m/s and a half-distance of 30 m. After a travel of 30 m the velocity will be 600 m/s, after 60 m it will be 300 m/s, after 90 m it will be 150 m/s and so on. Actual values of the half-distances are shown in the Table 8.1 below. As most shells eject either natural shaped fragments or spherical fragments, and accounting for the difference in air drag for these two shapes, the table below addresses both these shapes.

Fragment mass	Natural shape (steel)	Spherical shape (steel)	Spherical shape (tungsten)
10 mg	4 m	8 m	14 m
100 mg	8 m	17 m	30 m
1g	20 m	40 m	70 m
10 g	40 m	80 m	150 m
100 g	80 m	170 m	320 m

Table 8.1 Performance of fragments in air in terms in distances travelled to reach 50% of their initial velocity

The direction of the ejected fragments is exclusively determined by the geometry of the charge. In most cases the direction of the fragments will be close to the normal⁸ to the surface of the fragmenting body. When the detonation wave sweeps along the inner surface of the body, the direction will be slightly diverted along the direction of propagation. This deviation is, however, usually less than 10°[22].

Many warheads have a predefined fragment mass of 0.1 to 0.2 grams. This is considered the optimum fragment size if the main purpose is to defeat unprotected soft targets [23]. The optimum size is a compromise between having a few massive, long ranging fragments, or a high number of small and short-ranged ones.

⁸ At right angle to the surface.

The effective direction of ejection is of course also dependent upon the velocity of descent which is added vectorially to the ordinary ejection velocity. A fall velocity of several hundred meters per second will divert the fragments into a more forward facing trajectory that may affect the performance of the ammunition.

Another factor that is very dependent on distance is the hit probability. Let us consider a case where a shell detonates ejecting N fragments. Disregarding the velocity loss and the curved trajectory of fragments, the probability that a person will be hit by any of these fragments can be found by the following formula

$$P = 1 - \exp\left(-\frac{NA}{4\pi r^2}\right)$$

where A is the body area exposed to the charge and r is the distance from the shell. The formula presupposes that N is a large number. Figure 8.2 shows how the hit probability decreases with distance for a typical case of a shell ejecting 1000 fragments. The exposed area of the person is set to 0.5 m^2 , which is a typical value for an adult person. The figure also shows that at 200 m distance the probability of being hit is quite marginal.

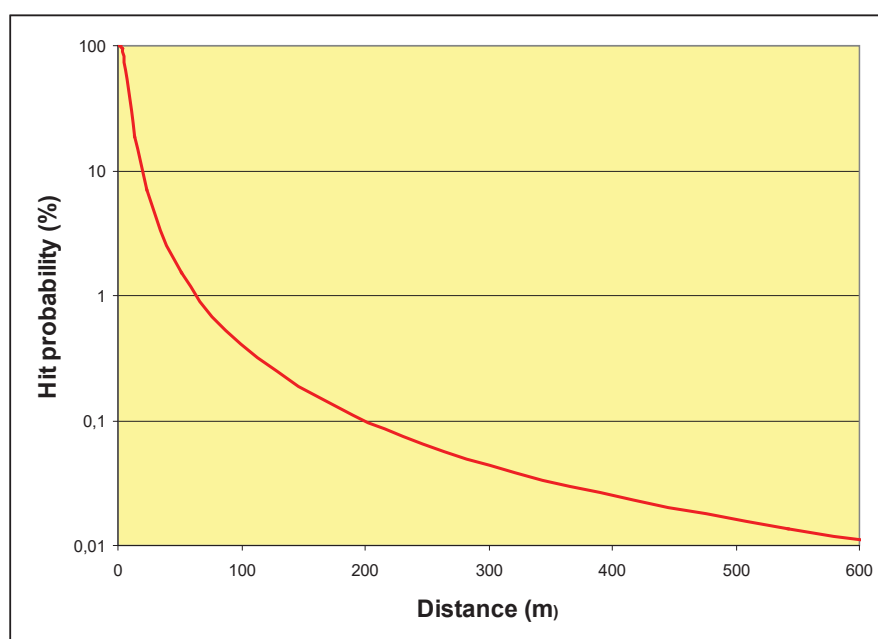


Figure 8.2. Hit probability as a function of distance to a shell ejecting 1000 fragments.

The fragment's capacity for perforation of armour plates is shown in the following Figure 8.3. It shows the velocity required to perforate armour steel plates of 1 mm and 3 mm thicknesses. When these data are combined with the deceleration of fragments in air it can be shown that the ability of fragments to perforate armour is very limited.

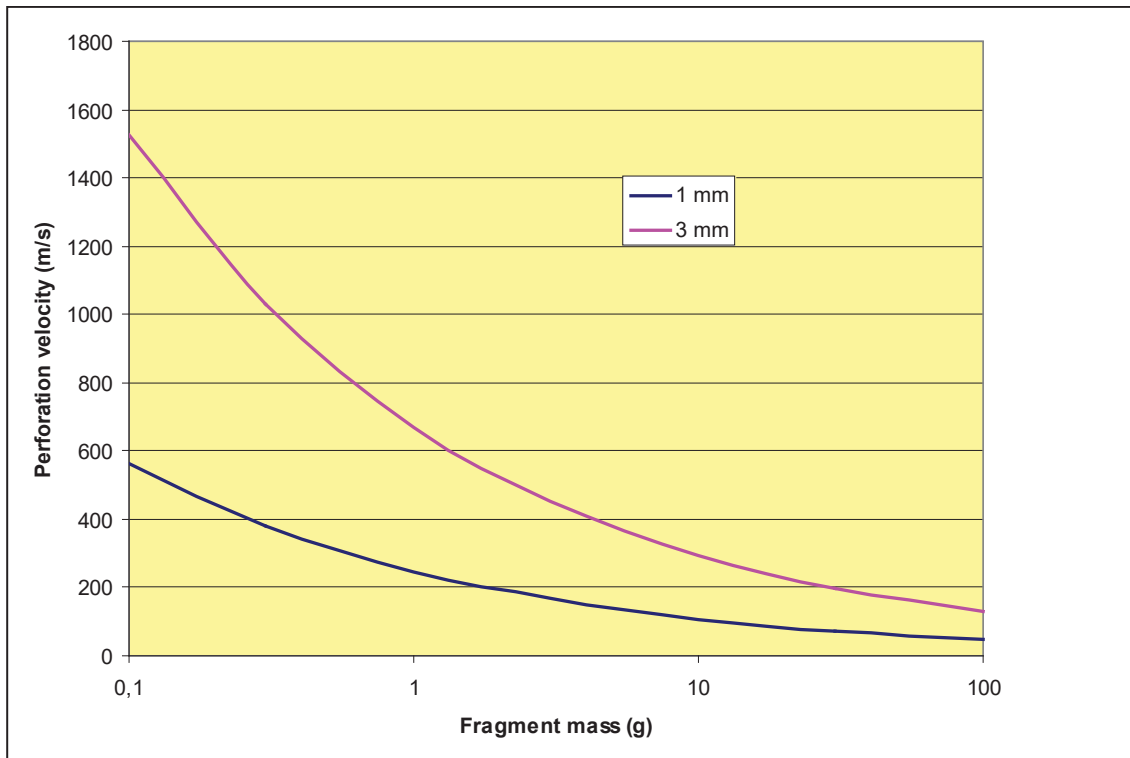


Figure 8.3 Armour perforation capacity of naturally shaped fragments

8.3 Blast

The blast effect of warheads is believed to be the most important effect when suppression of enemy fire is the purpose of the fire mission.

Table 8.2 below shows the basic characteristics of the most common military explosives.

	Density (kg/m ³)	Detonation velocity (m/s)	Detonation pressure (MPa)	Gurney velocity* (m/s)	TNT equivalent factor
Comp B	1742	7920	29.5	2350	1.15
HMX	1903	9110	39.0	2970	1.26
Octol	1843	8480	34.2	2830	1.23
RDX	1806	8700	33.8	2451	1.19
TNT	1654	6930	21.0	2097	1.00

Table 8.2 Properties of some common explosives

* see section 8.2

The blast effect from an explosive detonation is characterized by a shock wave that propagates outwards from the detonation point. The speed of propagation is initially very high and supersonic (several km/s). Depending on the size of the charge, the speed eventually drops to the sonic level, and the wave becomes an ordinary pressure wave.

The quantitative characteristics of a shock wave are its *peak pressure* and its *duration*. The general shape of the shock wave is shown in Figure 8.4 below. Here the duration is the length of the initial positive part of the pressure.

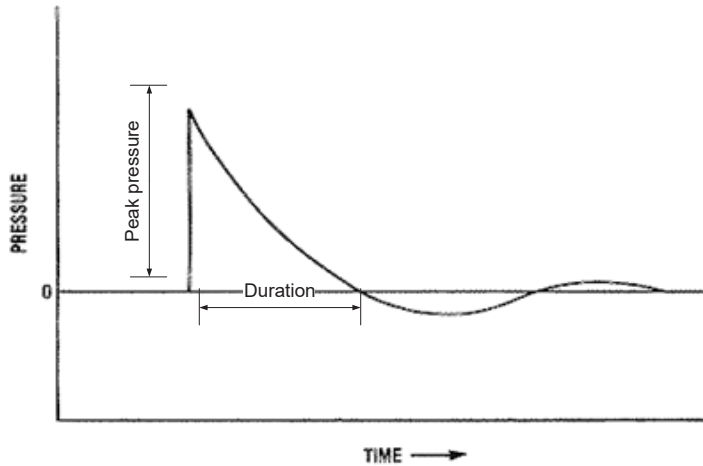


Figure 8.4 A shock wave profile showing peak pressure and duration.

The peak pressure is the height of the discontinuous front, while the duration is the time length of the positive phase. These two parameters, which we may call p and t respectively, are both scaled according to the size of the charge. The principle behind scaling is shown in Figure 8.5 below where κ is the geometric one-dimensional scaling factor of the charge.

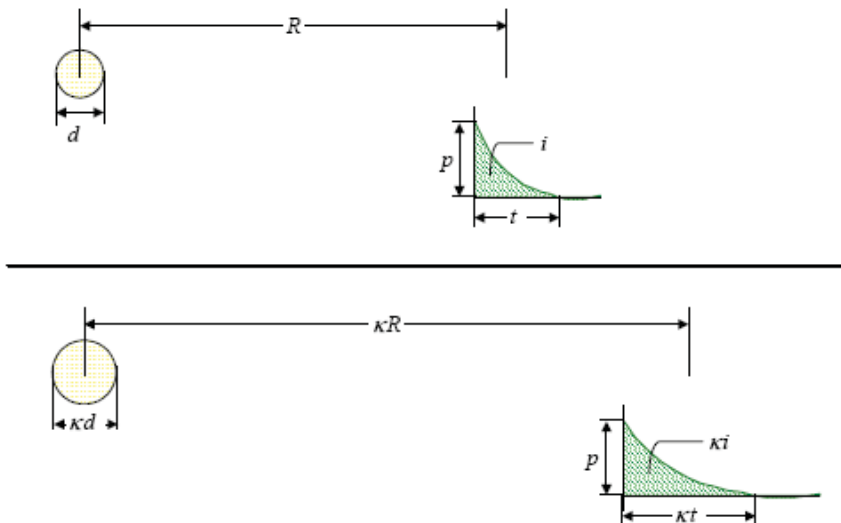


Figure 8.5 Scaling of blast wave effects

The essence of the scaling is that the distance and duration both scale with the charge size, while the peak pressure remains constant at scaled distances. This also implies that the impulse in the shock wave scales with the charge size.

An encased charge will have a somewhat reduced pressure compared to a bare charge. If the casing has a weight twice the weight of the explosive, the pressure will be reduced by more than 50%. We can define an effective explosive mass C' which is less than the actual mass explosive C . The formula to be used here is

$$C' = \left(0.2 + \frac{0.8}{1 + M/C} \right) C$$

where M is the mass of the casing.⁹ C' is then the effective explosive mass generating the blast wave.

8.4 Examples of performance

Some of the effects described above may be hard to compare, especially against complex or composite targets. In order to exemplify the performance the human body may be easiest one to use.

As explained in section 8.1, ordinary warheads have a combination of fragment effects and blast effects. The concept of lethal area is the common way to quantify the effect. In an open environment the fragments dominate the damage inflicted on the target. Blast effects are of secondary importance. In closed space environment, the blast effect may be the most effective one. However, as rocket artillery is designed for area targets, which for obvious reasons have to be open space targets, fragments will be the most important effect for most targets. For guided systems, which may have a point target role, blast warheads may be viable. The following tables give typical values for lethal areas for some typical systems.

System	Explosive mass (kg)	Lethal area (m ²) (point fuze)	Lethal area (m ²) (proximity fuze)
107 mm spun	1.3	450	550
122 mm finned	6.4	700	850
160 mm finned	9	1050	1200
220 mm finned	52	1700	1950
240 mm spun	42	1500	1700
300 mm finned	75	2400	2600
333 mm spun	60	2400	2700
610 mm finned	~200	5300	5600

Table 8.3 Typical performance data for some high explosive rocket warheads

⁹ Putting a casing around the explosive will have the same effect as downscaling the dimensions of the explosive by a factor equal to the third root of the expression inside the parentheses.

System	Number of bomblets	Dispersion area (ha)	Bomblet type	Bomblet lethal area (m ²)	Total lethal area (m ²)
122 mm	39	(1.5)	MZD-2	17	650
160 mm	104	3.1	M85	41	3500
227 mm	644	4.0	M77	19	10200
300 mm	646	(2.5)	KOBE	20	10500
610 mm	980	(4.0)	M74	30	25000

Table 8.4 Typical performance data for rocket delivered cluster munition warhead. Numbers in parentheses are assumptive.

8.5 Comparisons between conventional artillery, rocket artillery and mortars

The following graphs briefly show some comparisons in terms of ammunition weight, range and accuracy for some selected but typical systems. For the purpose of comparison, mortars and conventional howitzers are also included. Furthermore, we have also distinguished between fin stabilized and spin stabilized systems, as the latter category has used in light rocket systems, but is also inferior in terms of range.

Figure 8.6 shows the relations between calibre and range of the systems. The most noticeable feature is that guns, mortars and spin stabilized rockets all have limited range. Especially for guns and mortars, it may be claimed that they have reached their limit in terms of range. This limit is determined mechanical and propulsive constraints. For rockets, and especially for fin stabilized rockets, such a limit hardly exists, as the graph could have extended to include strategic and intercontinental systems.

Guns and fin stabilized rockets roughly increase their range in proportion to the calibre. Spin stabilized have, as mentioned earlier, an aerodynamic limitation as it is very difficult to spin-stabilize long slender bodies. Thus spin stabilized rocket have to keep a rather small length to diameter ratio. This factor subsequently limits the payload to fuel ratio.

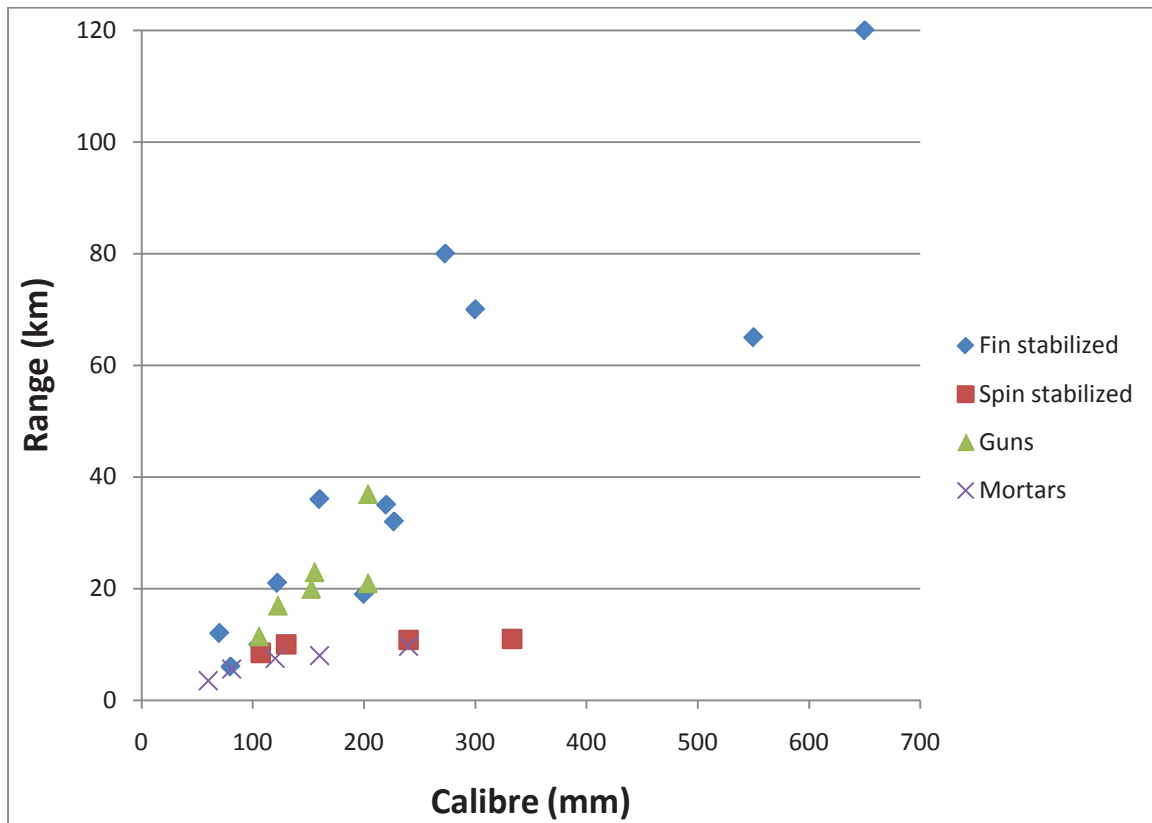


Figure 8.6 Maximum range as a function of the calibre. A few extremely long range systems are not included here.

Figure 8.7 shows the same systems as shown in figure 8.6, but here the system weight as a function of calibre is plotted. The categorization of systems is the same as in figure 8.6. As the figure shows, there is no strong correlation between calibre and system weight for rocket systems. For guns and mortars, this correlation is quite strong, but rocket system may have very different weights due to the number of rockets carried by the vehicle. Some systems have a single rocket, while others may have 40 rockets ready to fire.

No rockets system seems to have a system weight exceeding 45 tons. This limit is due to mobility. A heavier system put a heavy load on roads and bridges and on the strategic mobility by rail.

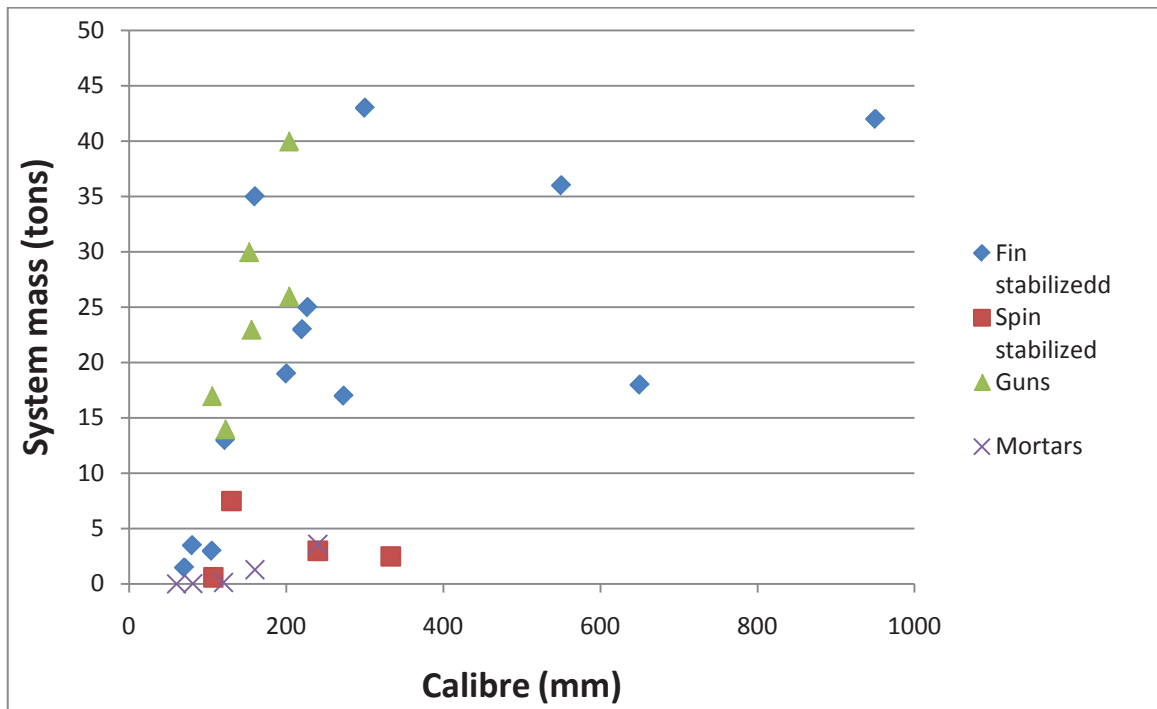


Figure 8.7 System mass as a function of calibre

9 Improved systems

As mentioned before, rocket artillery is a relatively simple system. Compared to cannons or howitzers, a workable rocket launcher can be made without any strict requirements on strengths or tolerances in the construction. Even the rockets themselves can be made in moderately advanced workshops provided that the requirements for firing accuracy are relaxed.

Building and firing rockets is an acknowledged and fully legal hobby in many countries. Consequently there is an abundance of literature available on subjects like ignition, propulsion, stabilization and aerodynamic design.

9.1 Explosives

The explosive may be the easiest component to get. In war-ridden areas there is abundant access to Explosive Remnants of War (ERW) from abandoned ammunition stores, unexploded ordnance (UXOs) and booty. The high explosive content can with acceptable risk be melted and recasted into new charges and warheads.

Secondary explosives can also be home made based on components that may be readily available. Recipes of explosive are available from a wide variety of sources – anarchists, terrorists, hobbyists etc. However, the most authoritative, as well as safest, source may be the technical manual [23] on improvised explosives that was issued by the U S Department of the Army during the Vietnam war. Although dated, it is still an invaluable source on how to make your own explosive out of simple ingredients, and in a relatively safe manner.

One of the most popular high explosives is ANFO which is an abbreviation for the mixture of ammonium nitrate and fuel oil. Ammonium nitrate is an ordinary fertilizer which is available in most countries while the oil can be regular diesel fuel. However, ANFO may be hard to bring to detonation and requires a small lump of TNT or another high explosive to react with high order.

Primary explosives are in general more difficult and risky to make, but the technical manual mentioned above also provides recipes for that. Primary explosives are only needed in small quantities, and they can also be acquired by disassembling left-behind fuzes.

9.2 Propellants

Unlike most high explosives, rocket propellants contain curing compounds and can not be melted out of abandoned ammunition and reused in other systems.

The Qassam rockets manufactured by the Hamas at the Gaza strip are made with TNT high explosive warheads and a propellant made of fertilizer, potassium nitrate (KNO_3) and cane sugar. Depending on the quality of ingredients and of the mixing and curing process, such propellants can reach a specific impulse (see chapter 6.1) of 90 – 120 s. This is approximately half of what is achieved by ordinary propellant. Still it is adequate for producing workable rockets.

Sugar syrup propellant

100g KNO_3 , finely powdered
40g cane sugar
30g corn syrup

The KNO_3 is placed in a pan and heated to 200 degrees in a conventional oven. This is to keep it from cooling down the sugar syrup too much when it is added.

Warm KNO_3 mixes in easier and allows a longer working time.

Sugar and corn syrup are placed in a 1-quart Pyrex measuring pitcher, mixed together, and heated in a microwave oven on "high" until the liquid is perfectly clear.

Heavy shirt, face mask, and gloves are used to make the body more flame-resistant, just in case.

Sugar syrup is stirred to eliminate any "hot spots." Then the KNO_3 added, and everything is stirred vigorously with a wooden spoon. Whilst stirring, mouth of glass container is pointed away from face and other things of importance, just in case.

Upon cooling, this propellant tends to be somewhat crumbly and more brittle than recrystallized propellant. Heating to 200 degrees F does not soften it like recrystallized. But heating to 250 to 270 degrees brings it to a near-liquid state, at which point it can be stirred and then kneaded as it cools a bit.

Figure 9.1 One of many recipes found on the Internet on how to make your own rocket propellant. (Plain copy of the text) [24]

It should also be noticed that if potassium nitrate is in scarcity, it can be made by heat treating wood ash with alcohol. This recipe, and other recipes are documented in the U S Army Technical Manual on improvised munition.[25]



Figure 9.2 Improvised rocket fuel being poured into a plastic casting container to cool and cure. The container is then cut away and the casting is placed inside the rocket. [26]

9.3 Fuzes

The fuzes of an improvised rocket do not have to be very sophisticated. A simple device consisting of a firing pin aligned with a detonator can be made quite easily. The firing pin is forced into the detonator at impact and the only safety precaution could consist of a safety pin (e.g. like that on a hand grenade) that is withdrawn just before launch. The firing pin can be merely restrained by a helical spring that resists the acceleration during launch and boost, but not the forces imparted at impact with the ground.

9.4 Rocket bodies

The main challenge of making a rocket may be the strength of the motor casing including the nozzle and the nozzle-tube interface.

While the grain is burning the pressure inside the motor may be as high as 10 MPa (100 atm.). To make a 120 mm tube able to withstand this pressure, a wall thickness of 6 mm is adequate if aluminium is used and 4 mm if steel is used. If high strength alloys are used the thickness can be reduced further

9.5 Launchers

An improvised launcher does not have to be very sophisticated. A simple gutter or tube supported by a bipod or tripod will be sufficient provided that it is heavy and rigid enough to be stable

during launch. The rigidity or stability is crucial for the accuracy of the firing. However, for systems not intended for precision firing, this is not an issue.

9.6 Fire control system

In order to obtain a reasonable accuracy of an improvised system, some kind of fire control input data (FCI) has to be in place. However, such a system requires extensive testing and monitoring of a high number of rockets to give reliable data. Such data will mainly consist of aerodynamic data and motor performance data at different ambient temperature. The absence of such data will seriously affect the accuracy of the weapon. In addition, geographical and meteorological inputs are also a requirement for an FCI.

However, when firing small or medium sized rockets onto an extended area in a terror mode, a rigid FCI may not be required. When firing a rocket at some kilometres distance into a large urban area, the probability that the rocket will hit something, or at least create the desired havoc, will be quite large.

9.7 The Qassam rockets

The Hamas organization, which currently governs the Gaza strip, has an inventory of rocket artillery that partially belongs to the term *improvised*. Hamas has some rockets produced in China (PRC), but they also produce a suite of home made rockets called Qassam (or Kassam) which has been in service since 2001 and which are frequently launched into Israel.

The first version of Qassam was rather primitive, reaching approximately just 3 km. By 2007 the range of the same size rocket had increased to 10 km. Due to the improvised nature of the production, it is hard to exactly quantify the parameters of the rockets. Current sources mostly operate with three sizes (classes) of Qassam rockets as given in the table below. [27]

	Qassam I	Qassam II	Qassam III
Diameter	60 mm	150 mm	170 mm
Weight	5.5 kg	32 kg	90 kg
Length	79 cm	180 cm	> 200 cm
Range	3 km	8 -10 km	10 km
Explosive payload	0.5 kg	5 - 7 kg	10 kg

Table 9.1 Basic properties of Qassam rockets

There is also supposed to be a recently developed Qassam IV rocket capable of reaching 15 – 17 km.



Figure 9.3 Preparations for firing Qassam II rockets

Some of the warheads on the Qassam rockets seem to be mortar bombs that are fixed to the extension

9.8 IRAM

IRAM has become the acronym for Improvised Rocket Assisted Munition. As the name indicates the clue is here to adapt any ammunition for which the proper launching platform is unavailable onto the front of a rocket. Thereby the original potential of the munition is regained although not with the same precision of delivery. The warhead will then be of high standard while the rocket may be of inferior quality. This method became popular with IRA in Northern Ireland in the 1980. In 2008 it was also seen among the Mahdi Army in Iraq. [28]

The munition that is most easily adapted to this kind of improvisation is, above all, mortar munitions, but small calibre artillery, rocket propelled grenades and hand grenades could also be candidates. The rocket propelled grenades RPG-7 is very widespread, but this warhead will not function in this role unless its self-destruct function is disabled. Otherwise, the warhead will self-destruct after 3 – 4 seconds of flight..

Vehicle Overview



Team concluded that Special Group criminals utilized 14 IRAMs, fired from a cargo truck, with 14 improvised rocket tubes setup in the bed with remote initiation to attack FOB Loyalty on April 28.

Figure 9.4 Wreckage from Iraq containing launchers for IRAM

An IRAM can also be made with improvised warhead. In Iraq big propane tanks have been used for this purpose. These are heavy warheads for which the range with rockets will be limited. They can be characterized more like remotely launched IEDs.

9.9 Other examples

Only fantasy may limit the possibility of making improvised rocket artillery, as the following two pictures show



Figure 9.5 Young Hezbollah soldiers manning an improvised vehicle intended for both indirect and direct rocket fire. The type of indirect rocket is not identified.
http://community.livejournal.com/shushpanzer_ru/?skip=20&tag=2007



Figure 9.6 A small truck discovered in the Basrah area in Iraq displaying built-in rocket launching tubes in the floor of the platform. It is supposed that this unit is able to fire 122 mm BM-21 rockets. [29]

Another special example is shown below where a primitive rack, a piece of sheet metal and a car jack are put together to make a launcher for a 107 mm spin stabilized rocket.



Figure 9.7 Improvised launcher for 107 mm rocket [Colin King]

Launchers can be made with even less sophistication than this. The next picture shows a “battery” of 107 mm launcher pads that is simply dug out in the soil. The accuracy of such a system will, of course, be terrible, but the method may be satisfactory if the target is a larger area a few kilometres away. In this particular case, the target was a US regional depot south of Mosul, Iraq.

107 mm spin stabilized rockets are, despite their limited range, very popular for improvised systems. The rocket is light (less than 20 kg), but with a powerful warhead. It is very robust, as it can be handled very roughly without losing performance. It can easily be carried by one man and is easy to hide. Moreover, spin stabilized rockets are less in need of accurate and sophisticated launchers than fin stabilized rockets. As we have seen, finned rockets also have to spin, although slowly, in order to compensate for some inherent inaccuracies. They have to draw their spin from the launcher, which put certain requirements on the launcher. Spin stabilized rockets draw their spin from themselves and are thus in less need for launcher quality.



Figure 9.8 107 mm rocket with extremely simple launch pads[20]

The picture below shows a rocket with an apparently 122 mm nozzle section with quite large fins. It is claimed to be a Qassam rocket found in Israel [30]. As this is originally made with wrap-around fins, the picture indicates that this is an incomplete replica of the 122 mm, or a reused motor section on which the original fins have been missing or damaged.



Figure 9.9 Finned and spin stabilized rocket wreck found in Israel.

10 Organization

Rocket artillery is not just the rockets, the launchers, the carrying vehicles and the crewmen. Without a supporting organization the rocket artillery may be of feeble use. The need for ammunition supply is obvious, so is also the supply of fuel, lubricant, water, food and spare parts. However, the most important component may be the collection information on where any potential targets are located. Without such information, artillery will just become a logistic burden without ability to exploit its truly tremendous potential. This fact was bitterly experienced by the Iraqi Army in 2003. The Iraqi inventory of rocket artillery was very impressive, but they were quite unable to locate targets and were just serving as tempting targets for the coalition forces. [31]

Like conventional gun artillery, rocket artillery has both an offensive and defensive role. The ability to engage in counter-battery fire may not be as good as for gun artillery, due to the lack of precision. On the other hand its ability to inflict damage on an extensive target area with a short time is surely impressive. As a consequence of this, multiple rocket forces are considered as a vital part to be organized at a high level, usually at divisional level or higher.

According to OPFOR FM 100-60 [32] the artillery group of the mechanized divisions (DAG – Divisional Artillery Group) has three battalions of 152 mm howitzer and one battalion of 122 mm MRL. The latter has 18 launchers organized in three batteries. In a battery, in addition to the 6 launchers, there are 2 command vehicles, 6 trucks, 5 officers and 56 enlisted men[33].

A battalion of light artillery rockets has the following requirement on manpower and vehicles according [34]:

- 18 launcher vehicles
- 8 command and control vehicles
- 24 close-in defence units
- 41 support trucks
- 8 vans
- 36 trailers
- 16 rangefinders
- 32 GPS receivers
- 28 radios
- 23 officers
- 234 enlisted men [32;33]

The number of men directly dedicated to a launcher is mostly between 3 and 8. The most automated systems require less crew, while towed systems require a lot of manpower.

On the corps or army level there is one artillery brigade of howitzers only and an artillery regiment with either 122 mm or 220 mm organized in three battalions.

300 mm MRL is considered a national asset and will be organized on an army group level in the event of a war. The army group will then contain an artillery division in which there will be an MRL brigade with 4 MRL battalions of either 220 mm or 300 mm. An artillery division may be designated to a particular army as the Army Artillery group (AAG). Each battalion has 3 batteries. The 220 mm has 6 launchers in each battery while 300 mm units have just 4 launchers.

At each level the howitzer seem to outnumber the MRL by 3 to 1.

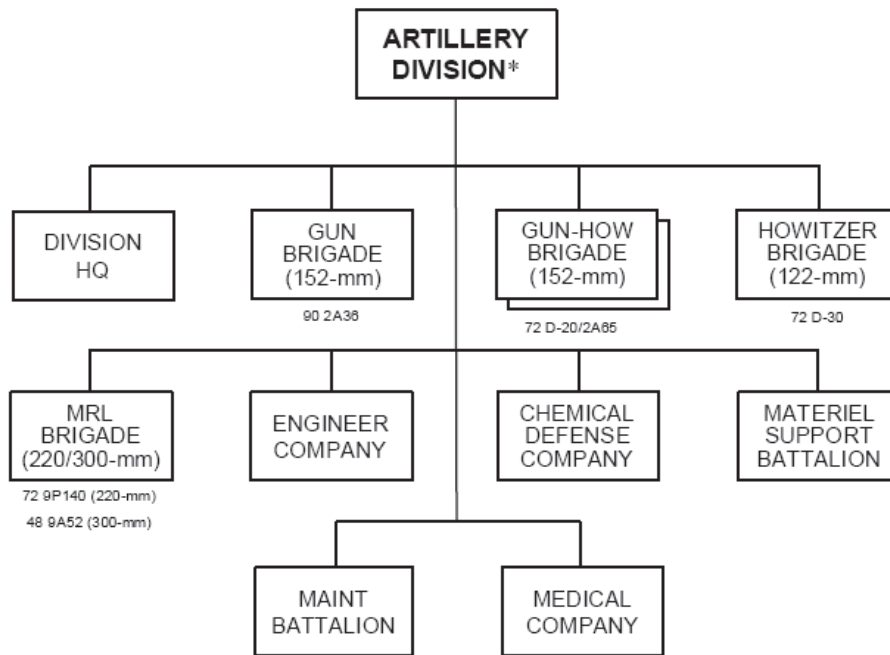


Figure 10.1 Organization of an artillery division [25]

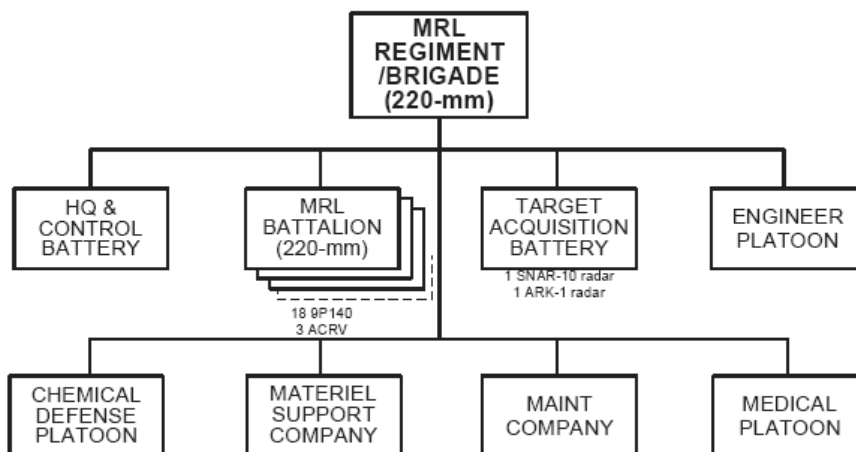


Figure 10.2 Organization of rocket brigade [25]

Rocket battalions have the same manpower requirement as battalions with self-propelled howitzer. As comparison, a towed artillery battalion has around 10% higher manpower demand.

Traditionally, on the battlefield, the launchers were deployed with 15 – 20 m between each in a battery. However, improved FCS and communications leaves an opportunity to extend the separation. Within a battalion, the spacing between the batteries is 1 – 2 km.

The DAG may be located 3 – 6 km behind the forward edge of battle area (FEBA). For the AAG this distance may be increased to 8 km. It is of course paramount to keep this distance as small as possible in order to exploit the range of the systems. [35].

Tactical missiles may be organized on army level as separate SSM brigades with 12 – 24 launchers and a manpower of 1000 – 1500 men.

Considering insurgency forces, and referring to OPFOR 7-100.4 [34], 122 mm MRL may be organized with one battery subordinated to a brigade tactical group and as a part of a composite artillery battalion.

In a smaller insurgent group the single tube launchers may be found in so-called direct action cells together with light mortars and grenade launchers. Such a cell may consist of 13 men with 6 men assigned to the mortar and 6 men assigned to the rocket launcher. The single tube may be either 9P132 122 mm or 107 mm Type 63 or Type 85.

11 Some scenarios

This chapter describes some generic scenarios involving rockets and adapted to the question of defence of military camps. The camp chosen for these scenarios is a camp used in a previous Norwegian study [36]. The camp is dimensioned for a single company and has an internal perimeter of 130 x 170 m². It is outlined in the figure below. The blue dotted line is the external perimeter which has a size of around 250 x 210 m². The camp is intended to accommodate 154 officers and soldiers plus 14 visitors, interpreters and other external personnel.

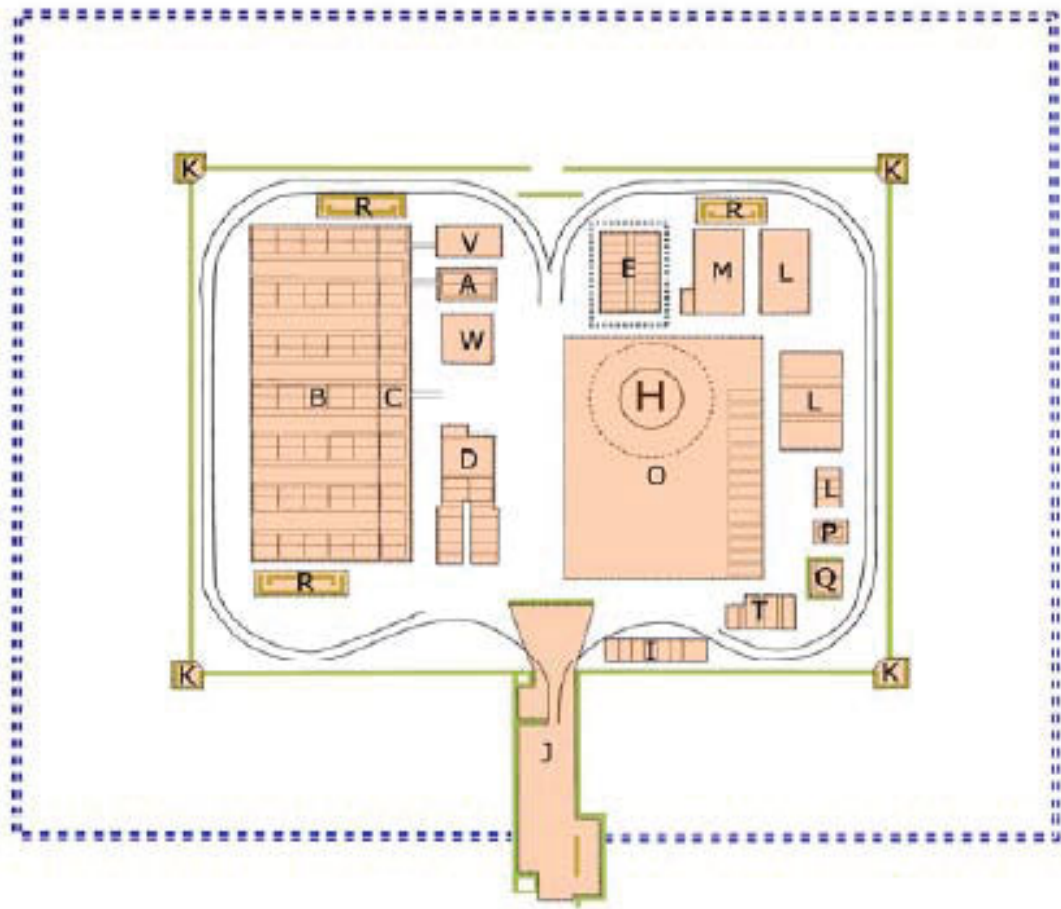


Figure 11.1 Possible layout of a company camp

The following table shows a breakdown of the area used in the camp.

Code	Type	Container area (m ²)	Outdoor area (m ²)
A	VIP accommodation	60	
B	Common accommodation	1125	2000
C	Laundries and wet rooms	310	
D	Kitchen and Cantina	300	
E	Offices	215	
I	Guard	70	
J	Entrance control		600
K	Observation towers	60	
L	Storages	120	500
M	Vehicle maintenance	10	300
O	Outdoor activities / cleaning	210	2400
P	POL site	15	
Q	Weapons and ammo depot	40	
R	Shelter area	150	
T	Power station	75	
V	Sports and fitness area		100
W	Welfare	140	

Table 11.1 Space distributions of the different functions in the camp

The total used area sums up 2900 m² of indoor area and 5900 m² of dedicated outdoor area out of a total area of 22900 m² inside the inner perimeter including the entrance control area

<p>Scenario 1 Light fire – one BM-21 launcher stationed at a distance of 15 km from the camp and firing HE munition.</p>	<p>The launcher contains 40 rockets each having a fragmenting warhead of 18 kg. Anticipated lethal area is 400 m² against unprotected standing personal. All 40 rockets are fired within a period of just 20 seconds. The flight time is 39 s. The firing is supposed to take place during calm and stable weather conditions. The mean point of impact deviates just 50 m from the target centre. The salvo dispersion has a standard deviation of 90 m both along and across the line of fire.</p> <p>The rockets impact at a speed of around 300 m/s and at an angle with the ground close to 35 deg.</p>
<p>Scenario 2 Cluster fire – a group of 6 9P132 single tube launchers at 6 km range firing ammunition each containing 39 MZD-2 DPICM munition. Each launcher will fire three rockets each.</p>	<p>Due to reloading the fire will be distributed over 2 – 3 minutes, with a steadily decreasing intensity. However the first volley of 6 rockets may come quite simultaneously. The rockets will eject in total 702 bomblets. Of these around 300 will hit inside the outer perimeter and will be quite evenly distributed inside this area.</p> <p>The rockets eject their cargo at an altitude of 500 m. The bomblets hit the ground after 8 – 10 seconds. Around 40 bomblets are expected to remain on the ground as UXOs.</p>
<p>Scenario 3 Heavy fire – a battery of 6 Falaq-1 launcher units firing at 5 km range with HE munition.</p>	<p>Each launcher vehicle has 6 rockets ready to fire. All 36 rockets are fired within a period of 15 seconds. All rockets will probably hit inside the perimeter, around 10 rockets will fall inside the inner perimeter. They arrive with a speed of 250 m/s and at an angle of fall of 15°. Each rocket carries around 20 kg of high explosives and has a lethal area of around 1400 m².</p>
<p>Scenario 4 Close fire – a group with 2 12-tube 107 mm launchers firing at 1.5 km range using HE munition.</p>	<p>The 24 rockets arrive with a speed of 350 m/s and with a low trajectory attitude of 8 – 10°. The salvo arrives within a period of 15 seconds. Almost all rockets will fall inside the perimeter.</p>

12 The future of rocket artillery

The intention of this report has been to describe all aspects of rocket artillery technology and especially those related to their use against permanent camps in order to understand the problems of defending the camps against this threat.

The advantage of rocket artillery is its ability to deliver a massive firepower at long range with a relatively simple technology, as long as no guidance devices are applied. Its main drawbacks are, however, its lack of precision, and its inability to engage close-in targets by direct fire. The ideal target for this weapon is large areas of unprotected or lightly protected infantry units.

Contemporary rocket artillery is a product of WWII when Soviet forces, after a very hasty development, used this weapon en masse and successfully against large opposing infantry units.

During the Cold War, the concept was retained in the Eastern Bloc which continued to improve its rocket inventory with increasing range. In the west, the development was slow, but made a boost by the development of MLRS during the last two decades of the Cold War. However, the objective was still to defeat large targets at long distance.

Lack of precision made the weapon attractive for deployment of wide-area indiscriminate payloads like cluster munitions. Such munition was also adapted to the role of defeating armoured units. However, the success of this approach was limited as the armour protection of such units improved.

In the post Cold War era, the role of Rocket Artillery has been maintained. In terms of numbers deployed, there is less rocket artillery now than 15 years ago, but this can be seen to follow a general decrease in armed forces worldwide.

Mortars have been considered as the “poor man’s artillery”, albeit with limited firing ranges. Rocket artillery may equally deserve the characterisation of “the poor man’s artillery”. It is a comparatively simple system, has longer ranges and may cover an area exceeding any other system having a comparative degree of sophistication. This assessment is supported by the fact that ever more nations, and mostly third world nations, acquire rocket artillery.

In the recent decade we have seen the use of rocket artillery by non-state parties, especially in the Middle-East and adjacent areas. The target is not primarily large infantry units, but infrastructural node point or simply urban areas. For the latter, the goal is apparently not to hit a specific target but just to hit something in order to inflict havoc and fear. In this role, medium sized, improvised, inaccurate rockets serve the purpose. Unfortunately, rocket artillery is an almost ideal weapon for this purpose and there is reason to believe that the gap between improvised systems and regular systems will close as the skill and experience of the manufacturers and operators improve.

Unguided rocket artillery is probably at the end of its development potential. The main limiting factors of progress are not in technology, but environment. The lack of precision is mainly due to wind and especially the rather unpredictable wind during the boost phase.

Guided artillery rockets should be expected to fill in at ranges where the lack of precision for unguided rockets is a problem. The accuracy of today’s guided rockets is in the area of 10 – 30 m or better. The ability to defeat buildings is probable on the verge of becoming realistic. The ability to gain direct hits at parked vehicles may also soon be available. However, the ability of hitting moving vehicles is not that easy to achieve because of the long and curved trajectory. For that purpose the rockets must carry advanced seeking and guiding devices. In this role, advanced jet-fuelled cruise missiles may be an alternative.

We have during the last 5 years seen large scale use of rocket artillery at least four times

- the Hezbollah – Israeli conflict in Southern Lebanon in 2006
- the Russian – Georgian conflict in 2008
- the continuous use of rockets by Hamas onto Israel, especially until the beginning of 2009
- on the eve of the Sri Lankan civil war in 2009

This relative frequent use demonstrates that rocket artillery is still a capability to be taken seriously. However, rocket artillery was initially designed for large scale conventional war, where the target areas are large and densely populated with individual targets are abundant. After the end of the Cold War such targets have become a rarity.

On the other hand rocket artillery have several properties that are attractive to non-state party forces and insurgency groups:

- the technology is simple, robust, inexpensive and can be made without strict tolerances
- it can be made in primitive workshop
- it can be handled by a poorly educated crew
- it is light and mobile
- there is an easy access to launchers and ammunition in many areas

As long as the requirement on accuracy, consistency and reliability are relaxed, rocket artillery may be the ideal kind of weapon. Such improvised are not the tool for winning a battle, but it well suited to in the role of creating havoc, imposing fear, and thereby terrorizing large areas.

Defence against rocket artillery is a challenge. Locating the launch site and attacking the launch crew have to be made before any rockets are fired. This is a fire-and-forget weapon and the launch site may be abandoned before the rocket hits the target. The only realistic alternative is then to destroy or neutralize the rocket before impact. Although this aspect is beyond the scope of this report, but the aspects of simplicity and robustness, as mentioned above, adds to that problem.

References

- [1] Haverdings W, "The Mortar Reference Book," TNO-DV 2007 A181, 2007.
- [2] A. Schombert, "This New Ocean: The History of Space Flight," University of Oregon, 2009.
- [3] Jonhson W, "The Rise and Fallof of Early War Rockets," *Int. Journal of Impact Engineering*, vol. 15, no. 4, pp. 365-383, 2009.
- [4] C. Bishop (editor), *The Encyclopedia of Weapons of World War II*. London: Barnes & Noble Books, 1998.
- [5] "Reaktivnaya Artilleriya Krasnoy Armii 1941 - 1945," *Frontovaya Illyustratsiya*, no. 3-2005 2005.
- [6] C. Bellamy, *Absolute War - Soviet Russia in the Second World War*. New York: Alfred A Knopf, 2007.
- [7] A. B. Shirokorad, *Entsiklopediya Otechestvennogo Raketnogo Oruzhiya 1817 - 2002* 2002.
- [8] P. Griffith, *The Ultimate Weaponry*. London: Sidgwick & Jackson, 1981.
- [9] "Missile Grid Fins," 2009.
- [10] *Design of Aerodynamically Stabilized Free Rockets* U S Department of the Army, 1990.
- [11] *Fuzes* U S Department of the Army, 1994.
- [12] G. P. Sutton and O. Biblarz, *Rocket Propulsion Elements*. New York: John Wiley & Sons, 2001.
- [13] W. S. Chaplin, "TRANSM - The MLRS Air Vehicle Trajectory Simulation Program, Vols I - III," LTV Missiles and Electronics Group, 4-52100/9R-30, 1989.
- [14] E. Slover, "Naval Ordnance and Gunnery; Vol 1 - Naval Ordnance," 2009.
- [15] J. W. Recce, G. A. Lindholm, and W. A. Tomb, "Launch tube and rocket interaction for an aerodynamically neutral spin-stabilized free rocket," Auburn University, AD-779494, 1974.
- [16] "Destroying the "Mother of All Arsenals": Captured Enemy Ammunition Operations in Iraq," FM 6-16 ed Washington DC: Department of the Army, 1961.
- [17] "345 mm HE rocket M130 SLUFAE," 2008.
- [18] "Thermobaric weapons - killer extraordinaire," 2009.
- [19] O. Dullum, "Cluster weapons - military utility and alternatives," FFI-Report 2008-02345, 2008.
- [20] "115 mm Chemical rocket M55," 2009.
- [21] "Iraq inspectors reports: Antrax, missiles, nerve gas... all," 2009.
- [22] M. Held, "Splitterballistik (in German); Explosivestoffe; Vol 12," 12 ed 1967.

- [23] O. Dullum and F. Klouman, "Beregninger av sårbarhetsreduksjon for personell ved bruk av forskjellige lettvekts beskyttelsesmaterialer - spesielt Kevlar (in Norwegian); IR VM-66," FFI,1979.
- [24] "Sugar syrup Propellant," 2008.
- [25] "Improvised Munitions Handbook," U S Department of the Army, TM 31-20, 1969.
- [26] "Building Qassam Rockets in Gaze," 2008.
- [27] "Qassam Rocket Specifications," 2008.
- [28] B. Roggio, "Mahdi Army uses "flying IEDs" in Baghdad," 2008 ed 2008.
- [29] "Improvised rocket launcher system from Iraqi insurgents," 2009.
- [30] "Katyusha and Qassam Rockets," 2008.
- [31] W. Murray and M. R. H. J. Scales, *The Iraqi War* Harvard University Press, 2003.
- [32] *Armor- and Mechanized-based Opposing Force - Organization Guide*. Washington D C: U S Department of the Army, 1997.
- [33] D. Isby, *Weapons and Tactics of the Soviet Army* Jane's, 1990.
- [34] *Opposing Force - Organization Guide* U S Department of the Army, 2008.
- [35] J. F. J. Holcomb, "Soviet artillery utilization," Soviet Army Studies Office, Fort Leavenworth, KS,AD-A216371, 1988.
- [36] A. Bjerke, T. Berger, C. L. Hodneborg, and O. Busmundrud, "Sikring og beskyttelse av leire i internasjonale operasjoner (Securing and protecting camps in international operations) (in Norwegian)," Forsvarets forskningsinstitutt,FFI/RAPPORT-2002/04656, 2009.
- [37] W. Kokinakis and J. Sperrazza, "Criteria for Incapacitating Soldiers with Fragments and Flechettes,"BRL Report no. 1269, 1965.
- [38] "Common Risk Criteria for national Test Ranges - Inert Debris," Range Commanders Council, U S Army White Sands Missile Range, NM,2002.
- [39] Feinstein M L, D.I.Haugel, W.F.Kardatzke, and A. Weinstock, "A Personnel Casualty Study; IITR Project No. J6067," AD 842 573 ed 1968.
- [40] O. Dullum and Lien Svein, "MLRS - Data og vurdering (in Norwegian),"FFI/NOTAT-93/4019, 1993.
- [41] *Afghanistan Ordnance Identification Guide*. Indian Head, MD: Naval Explosive Ordnance Technology Division, 2004.
- [42] *Iraq Ordnance Identification Guide*. Indian Head, MD: Naval Explosive Ordnance Technology Division, 2004.
- [43] "Civilians under Assault - Hezbollah's Arsenal," 2007.

- [44] D. Richardson and D. C. Isby, "Lessons learned: post-conflict assessment reveals evidence of new Israeli weapons and tactics," March 2009 ed 2009.
- [45] "Missiles and Mortars," 2009.
- [46] "The Taliban's military forces (prior to hostilities)," 2009.
- [47] "Strategy and Weapons," 2009.
- [48] "BM-21! He thought," 2009.
- [49] C. F. Foss (editor), *Jane's Armour and Artillery* Jane's Publishers, 2008.
- [50] L. Ness and A. G. e. Williams, *Jane's Ammunition Handbook* Jane's Publishers, 2008.
- [51] *OPFOR Worldwide Equipment Guide* TRADOC DCSINT Threat Support Directorate, 2001.
- [52] A. W. Hull, D. R. Markov, and S. J. Zaloga, "Soviet/Russian Armor and Artillery design Practices: 1945 to Present," TM 31-20 ed London: Greenhill Books, 1999.
- [53] A. H. Cordesman and M. Kleiber, *Iran's Military Forces and Warfighting Capabilities* Greenwood Publishing Group, 2007.
- [54] *OPFOR Battle Book*. Ft. Leavenworth: Threat Supprt Directorate, TRADOC, DCSINT, 2001.
- [55] M. Pincolski, *Precision Guided Missiles and Rocket Program Review* Precision strike annual programs revies, 2007.

Appendix A Abbreviations

AAG	Army Artillery Group
AP	Anti-Personnel
AT	Anti-Tank
ATACMS	Army Tactical Missile System
BB	Base-burn (or base-bleed)
BM	Boyevaya Mashina (War Machine)
CBRN	Chemical Biological Radiological Nuclear
CCB	Centre Core Burster
DAG	Divisional Artillery Group
DOF	Degrees Of Freedom
DPICM	Dual Purpose Improved Conventional Munition
ECM	Electromagnetic Countermeasure
EFP	Explosively Formed Projectile
ERW	Explosive Remnants of War
FAE	Fuel-Air Explosive
FEBA	Forward Edge of Battle Area
FCI	Fire Control Input
FCS	Fire Control System
FIROS	Field Rocket System
FROG	Free Rocket Over Ground
HE	High Explosive
HMX	High Melting Explosive
ICM	Improved Conventional Munition
IDF	Israel Defence Force
IED	Improvised Explosive Device
ILL	Illumination
IPN	Isopropyl Nitrate
IRA	Irish Republican Army
IRAM	Improvised Rocket Assisted Munition/Mortars
LAR	Light Artillery Rocket
LARS	Light Artillery Rocket Systems
MPMM	Modified Point Mass Model
MRL	Multiple Rocket Launcher
MLRS	Multiple Launch Rocket System
NASA	National Air and Space Administration
OEF	Operation Enduring Freedom (2001 -)
OIF	Operation Iraqi Freedom (2003 -)
OPFOR	Opposing Force
PMM	Point Mass Model

RAP	Rocket Assisted Projectile (or Propulsion)
RDX	Research Department Explosive
SFW	Sensor Fuzed Warhead
SLUFAE	Surface Launched Unit, Fuel Air Explosive
SRBM	Short Range Ballistic Missile
SSM	Surface-to-Surface Missile
TBX	Thermobaric explosive
TCS	Trajectory Correction System
TGW	Terminally Guided Warhead
TNT	Trinitrotoluene
UXO	Unexploded Ordnance
WAF	Wrap-Around Fins
WHE	WarHead Event

Appendix B Accuracy of long range artillery

B.1 Sources of inaccuracy

- Launcher position
- Target position
- Launcher alignment
- Launch release force
- Launch velocity variation
- Launch tip-off
- Temperature and air pressure
- Aerodynamic errors
- Boost phase wind
- Ballistic phase wind
- Fuze error

B.2 Meteorological models

The most critical meteorological parameter for is the wind. For any system firing at distances beyond 10 – 15 km the wind is the most contributing factor to the overall lack of accuracy. The simplest approach to wind is the so-called Didion's¹⁰ equation then says that

the deviation due to sideways wind is equal of the sidewind velocity multiplied with the time loss caused by axial air drag

Most artillery systems have a meteorological unit allocated to the parent battalion. This unit will monitor the wind, temperature and air pressure up to a required altitude. However, these meteorological data may have been sampled several kilometres from the actual trajectory, and several hours before the firing took place. Consequently, it is not the wind speed itself that determine the accuracy, but the change in wind from the time and position of the sampling to those of the firing. The variability, i.e. expected change of the wind, is strongly dependent of the following three parameters

- *altitude* – The wind tends to become increasing stable with altitude. At low altitude, e.g. below 500 m, the wind is very unstable and may change dramatically in a matter of 5 – 15 minutes. It is also heavily influenced by the terrain structure and even the vegetation. At high altitudes, like in the stratosphere, the stability is very good and the wind may be very stable on a time scale of many hours, even days. It is assumed that the altitude variability increases as the inverse cubic root of the altitude.
- *wind speed* – The variability increases with the average wind speed. The variability during a gentle breeze is far less than during a gale. When spectral models of the wind is

¹⁰ Named after the French artillery general Isidore Didion (1798 – 1878)

considered, it can be shown that the variability increases with the wind speed raised to $4/3$.

- *time and distance* - There is an equivalence between time and space variability. It is usually assumed that one hour time variability is equivalent to the 30 km space variability. The variability will increase as the cubic root of time (or space)

The following table shows the expected variability after 2 hours (or 60 km) and different altitudes and different wind speeds. Please note that the variabilities may be come larger than the average wind velocities as the velocity here must be considered as a vector.

Altitude	Gentle breeze (5 m/s)	Moderate gale (18 m/s)	Strong gale (25 m/s)
100 m	3.3	10.2	28.3
500 m	1.9	5.9	16.5
1000 m	1.5	4.7	13.1
2000 m	1.2	3.7	10.4
5000 m	0.9	2.8	7.7
10000 m	0.7	2.2	6.1
20000 m	0.6	1.7	4.8

For rockets, the wind induced deviation is most pronounced during the boost phase due to the high rate of acceleration. After the boost phase is over the wind influence is more moderate. However the wind near the top of the trajectory becomes quite important as the rocket spends more time near the top due to the shape of the trajectory and because the velocity is at a minimum in that region. The wind influence during the descending part of the trajectory is even more moderate than the ascending part because the remaining trajectory is short and any wind deviation will have a short time to work.

Appendix C Lethality models

Fragments are the dominating effect of artillery warheads, including those of rocket artillery. hence, lethality models will focus on that effect.

There are several ways to quantify the effects of fragments on the human body. Such a model requires the following components

- criteria for a fragment to be able to penetrate the human skin
- the probability of an incapacitating injury if the body is penetrated
- injury criteria have to depend on which part of the body is hit

C.1 Sperrazza's model

This is quite detailed vulnerability model based on the U S Army experiences during the Vietnam War and probably also the Korean War. The model is documented in a paper by Kokinakis and Sperrazza¹¹ [37]. In mathematical terms the model is based on the following expression of probability

$$P_{kill}(m, v) = 1 - \exp \left[-a \left(mv^{3/2} - b \right)^n \right]$$

The expression gives the probability of kill (inability to serve as a soldier) when hit by a fragment with velocity v and mass m . The parameters a , b and n are adapted to experimental and empirical data obtain through firing made on goats and, to some extent, on human cadavers. The values of the parameters may be given for body as a whole or for any major body part. Separate sets of a , b and n are also made for different clothing, for different fragment shapes and for different tactical roles. As an example, the table below shows the set for a fully clothed soldier with helmet, in a defensive role and exposed to randomly shaped steel fragments

¹¹ This work was originally classified as *Secret*, but it is now downgraded to *Unclassified*

Body part	a	b	n	r*
Head & Neck	0,19866	0,21808	0,57884	0,0651
Thorax	0,43317	0,49068	0,27859	0,1304
Abdomen	0,13200	0,47433	0,48523	0,1065
Pelvis	0,02766	0,39800	0,77314	0,1156
Arms	0,15519	0,33258	0,45662	0,2045
Legs	0,12437	0,34239	0,47749	0,3778
Entire body	0,15368	0,34239	0,45106	1,0000

Table C.1 Set of parameters for a soldier in winter uniform exposed to random fragment and in a defensive role. SI-units are used. The number of digits in the numbers does not reflect the accuracy of the model.

* r is a relative exposed area of the respective body part.

As another example consider the following graph showing a soldier with practically no clothes, and in an assault role. In this role the locomotive body parts is given more emphasize. The model uses two separate assault modes – assault < 30 seconds, and assault < 5 minutes – were the time gives time maximum time between the hit and the moment at which the incapacitation takes place.

In order not to be considered incapacitated, the soldier must be able to run, to use his weapon, to see, to hear and to communicate with his fellows.

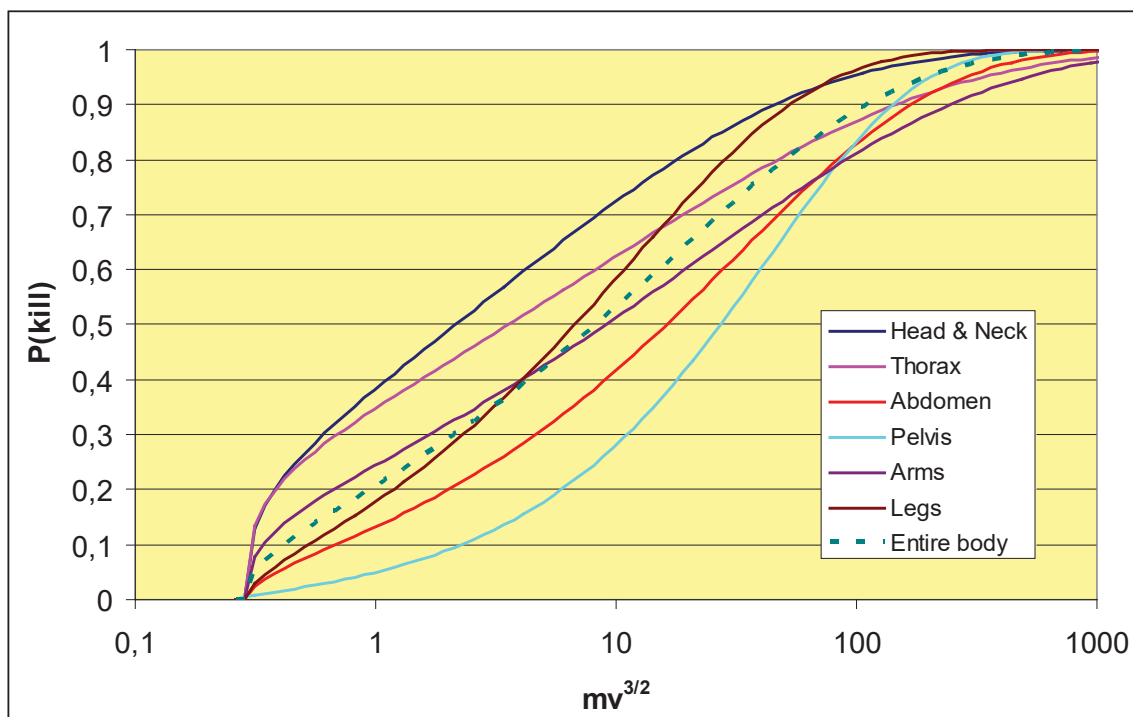


Figure C.1 Sperrazza/Kokinakis criteria for nude soldier in assault mode (< 30 seconds) exposed to random steel fragments. Head & Neck is shown as the most vulnerable body part.

C.2 Feinsein's model

Starting with the first criterion, according to Lewis[38], the probability of skin penetration for a fragment with kinetic energy K and cross section area A . The empirical formula for this probability is

$$P(\text{SkinPenetration}) = \left[1 + \exp \left(34.19 - \ln \left(\frac{2K}{A} \right) \right) \right]^{-1},$$

where SI-units are strictly applied.

A criterion according to Feinsein is used herein[39]. The probability of injury when being hit by a fragment with kinetic energy K is given by the following, quite complex expression containing a log-normal distribution

$$P(\text{injury} | K) = \int_0^K \frac{1}{x\beta\sqrt{2\pi}} \exp \left[-\frac{(\ln x - \ln \alpha)^2}{2\beta^2} \right] dx$$

When the probability of being injured by a given fragment is known, the total probability of injury when hit by several, say n , fragments is

$$P = 1 - \prod_{i=1}^n (1 - p_i),$$

where the index i designates the individual fragments.

The vulnerability model according to Feinsein divides the human body into three parts: the head, the thorax, and the rest of the body (abdomen, arms, legs). The reason for this rather rough division is believed to be that each of the parts has a quite uniform vulnerability.

There are other criteria for vulnerability of warfighters which use the term incapacitation. This implies that the soldier has received an injury that makes him unable to perform his duties. These criteria, however, are not dramatically different from Feinsein's criteria.

The parameters for each body part are given in the table below

Part	α (J)	β	Area (%)
Head	75	1.32	9
Thorax	60	1.45	23
Abdomen & limbs	130	1.54	68

Table C.2 The parameters of Feinsein's model

The parameter α indicates the energy level where the probability of kill is 50%, while β is a measure for the width of the region where the probability goes from close to zero to almost 100%.

The actual kill probabilities are plotted below

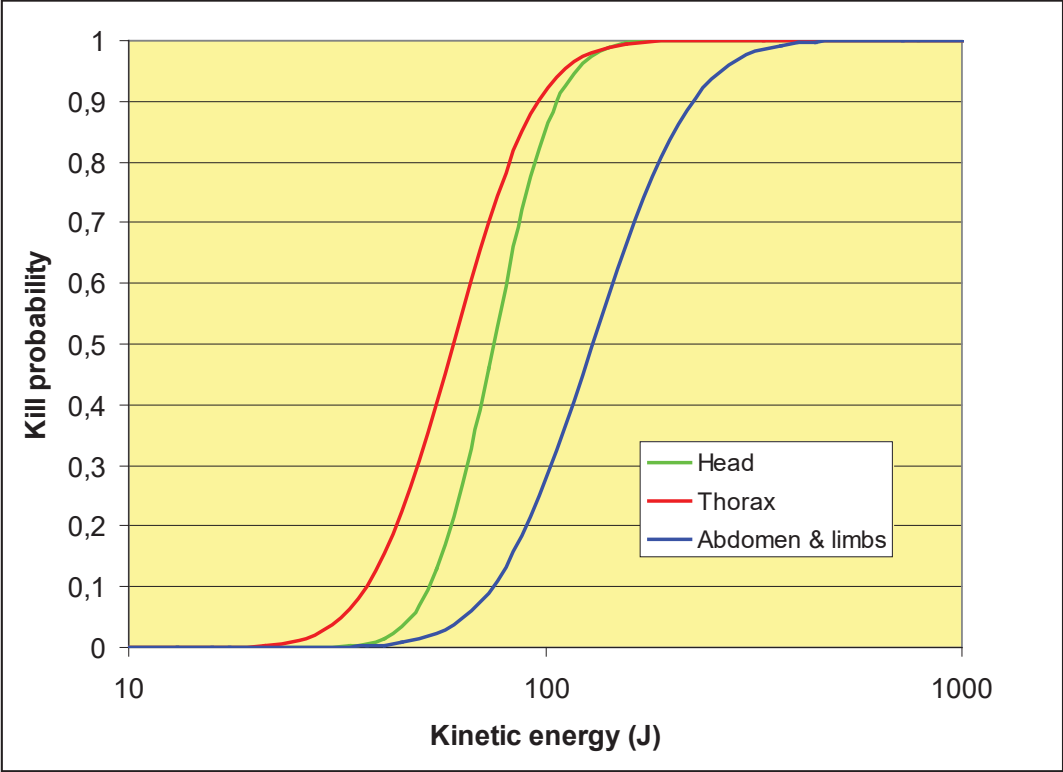


Fig C.2 Graphical presentation of the Feinsein model

Appendix D Details on some typical systems

	Qassam-1	9K132	Grad 9M22	LAR-160	Uragan 9M27F	MRLS M26	Smerch 9M55K
Diameter of fuselage (mm)	60	122	122	160	220	227	300
Rocket length (m)	0.79	1.905	2.87	3.31	4.83	3.94	7.6
Mass at launch (kg)	5.5	45.8	66.35	110.0	280.4	306.2	800
Fuel mass		(10.7)	20.45	(34.4)		98.4	(227)
Max. range at std. cond. (km)	3	10.8	20.4	34	34	32	70
Muzzle velocity (m/s)			50			60	(50)
Max velocity (m/s)	(200)	450	715	1022		818	(1030)
Motor thrust (kN)						125	(220)
Burn time (s)				(1.5)		1.5	(2.0)
Specific impulse (s)	(140)	(240)	(240)	(240)	(240)	239	(240)
Axial mom. of inertia (kgm²)		(0.105)	(0.152)	(0.434)	(2.09)	2.43	(11.1)
Transv. mom. of inertia (kgm²)		(11.1)	(36.8)	(80.8)	(440.6)	320.1	(3112)
Spin rate at launch (rps)						10.76	
Final spin rate (rps)						6 - 7	

Table D.1 Basic data for some selected types of rocket artillery. Numbers in parentheses are assumptive.

D.1 Aerodynamic data

Most current artillery rockets belongs either to one of the following two types

- long rockets with a length to diameter aspect ration in the order of 20 with wrap-around fins near the rear end and with moderate spin
- spin stabilized rockets without fins and with a length to diameter aspect ratio in the range of 5 to 7

As an indication of the value aerodynamic coefficients consider the following table.

Aerodynamic coefficient	140 mm spin stab.	227 mm fin stab.
Drag coefficient at 0.9 Mach	0.31	0.15
Drag coefficient at 1.1 Mach	0.57	0.39
Drag coefficient at maximum velocity	0.56	0.34
Lift coefficient at 0.9 Mach	2.3	3.6
Lift coefficient at 1.1 Mach	2.5	4.5
Lift coefficient maximum velocity	2.7	2.2
Overturning moment at 0.9 Mach	0.74	2.1
Overturning moment at 1.1 Mach	1.92	2.7
Overturning moment at maximum velocity	1.8	1.2
Pitch damping moment at 0.9 Mach	-15.7	-12
Pitch damping moment at 1.1 Mach	-96.7	-16
Pitch damping moment at max. velocity	-116	-9.5
Spin damping moment at 0.9 Mach	-0.04	-0.14
Spin damping moment at 1.1 Mach	-0.04	-0.16
Spin damping moment at maximum velocity	-0.04	-0.08

Table D.2 Typical values for the most important aerodynamic coefficients

D.2 Error budget

Most sources that give the accuracy of rocket systems present the round-to-round accuracy or random error contribution. The accuracy turns out to be around 1 – 2% of the firing range. Such a value is actually quite good, but is somewhat removed from reality as the systematic error contribution may exceed the random errors to become the dominating errors. Systematic errors can be minimized by accurate launcher and target positioning and, above all, advanced wind monitoring systems especially in the vicinity of the launcher and the boost trajectory of the rocket.

D.2.1 Systematic errors

Using MLRS as an illustration of systematic errors, consider the table below. It is believed that these numbers are representative for any un-guided system fired at the same ranges.

Error source	12 km	20 km	30 km
Temperature deviation	8/0	10/0	14/0
Manufacturing inaccuracies	18/10	28/14	45/26
Aiming errors	0/17	0/28	4/14
Fuze timing errors	9/0	9/0	6/0
Wind induced errors	40/65	48/122	83/230
Atmospheric temperature and pressure	20/0	32/0	58/0
Total systematic error	50/68	66/126	112/235

Table D.3 Error budget for the M26 systematic errors (in meters). Numbers show probable error in meter along (before the slash) and across (after the slash) the line of fire[31]

D.2.2 Random errors

Error budget requires detailed information of a specific system, which in general is not available. The following table is taken from [40] describing the values for the M26 rocket of MLRS. It shows the random error along and across the line fire when firing at normal condition at three different ranges.

Error source	12 km	20 km	30 km
Shear bolt strength	2/0	3/0	7/0
Motor impulse	35/0	55/0	89/1
Grain temperature	15/0	18/0	27/0
Rocket mass	8/0	20/0	37/0
Nozzle inclination	0/20	1/27	6/52
Transversal centre of gravity	0/0	0/9	2/18
Longitudinal centre of gravity	0/0	0/0	0/0
Time fusing	9/0	15/0	20/0
Fin angle	0/0	0/0	0/2
Fin release	0/0	0/2	5/4
Air drag	20/0	45/0	95/0
Tip-off	3/83	4/160	44/314
Aiming	0/23	1/38	14/57
Boost wind	10/70	6/76	6/143
Coast wind	14/14	17/17	24/24
TOTAL ERROR	48/114	80/184	149/355

Table D.4 Error budget for M26 random errors (in meters). Numbers show probable error in meter along (before the slash) and across (after the slash) the line of fire[31]

D.3 Trajectories and firing tables

In order to illustrate the ballistics of rocket artillery, we have worked through the ballistics for some of the most common rocket artillery systems. The calculations are based upon the TRANSM model developed by LTV for simulating the MLRS rocket [13]. This model requires a high number of input parameters, of which many are not known. However, many of these parameters have a minute effect on the trajectory. The most critical input parameters are:

- size and mass of rocket
- fuel mass
- specific impulse
- burn characteristic
- air drag coefficients

Even some of these parameters may be unknown, but based on design and other constraints, assumptive values can be used and adjusted to give the expected values for known performances like the maximum range and others.

Six different systems have been simulated. These are

- a 60 mm Qassam rocket
- a 107 spin stabilized rocket
- a 122 mm short rocket
- the 122 mm 9M22U as used in BM-21
- the 160 mm rocket as used in LAR-160
- the 220 mm 9M27F as used in Uragan
- the 227 mm MLRS M26 rocket
- the 240 mm Falaq-1 rocket
- the 300 mm 9M55K rocket used in Smerch

D.3.1 60 mm Qassam fin stabilized

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
1.0	8.5	5.4	32	187	7.4
1.5	12.6	8.4	78	170	12.7
2.0	17.6	11.8	159	156	19.7
2.5	23.6	15.8	291	146	28.6
3.0	34.3	22.2	579	141	43.3
3.1	44.8	28.2	945	145	56.4

Table D.5 Suggestive firing table for a 60 mm Qassam rocket

D.3.2 107 mm spin stabilized rocket

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
2	8.0	6.6	41	318	4.9
2.5	9.3	8.2	66	303	6.5
3	10.7	9.9	101	291	8.4
3.5	12.2	11.7	147	279	10.6
4	13.7	13.6	199	269	12.8
4.5	15.4	15.6	259	259	15.4
5	17.3	17.8	353	250	18.2
5.5	19.3	20.0	454	242	21.3
6	21.6	22.6	582	235	24.8
6.5	24.1	25.3	735	230	28.7
7	27.0	28.3	929	226	33.0
7.5	30.5	31.8	1185	224	38.1
8	35.0	36.2	1541	224	44.0
8.5	46.0	45.9	2500	233	56.2

Table D.6 Suggestive firing table for 107 mm spin stabilized rocket

D.3.3 122 mm short (6 feet)

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
2	4.6	5.3	26	405	3.1
3	6.3	8.0	64	358	5.3
4	8.3	11.1	129	314	8.5
5	10.6	14.5	227	288	12.3
6	13.3	18.1	371	277	16.7
7	16.5	22.3	574	262	22.0
8	20.3	27.0	856	251	28.2
9	24.9	32.4	1249	244	35.3
10	31.2	39.4	1861	244	43.9
10.8	46.0	54.1	3515	260	59.5

Table D.7 Suggestive firing table for 122 mm short rocket

D.3.4 122 mm 9M22U for BM-21 Grad (9 feet)

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
5	3.5	8.5	69	540.9	3.7
6	4.3	10.5	110	490.6	5.0
7	5.2	12.6	165	442.6	6.7
8	6.3	15.2	245	403.1	8.9
9	7.5	17.8	345	368.2	11.6
10	8.8	20.6	469	339.8	14.5
11	10.4	23.8	640	318.4	18.2
12	12.2	27.2	853	306.5	22.2
13	14.2	30.8	1114	299.3	26.4
14	16.5	34.7	1442	294.7	30.8
15	19.0	38.8	1833	292.9	35.2
16	21.9	43.3	2312	293.8	39.7
17	25.1	48.1	2886	297.4	44.2
18	28.7	53.4	3573	303.7	48.5
19	33.3	60.1	4515	311.6	53.3
20	39.2	68.3	5803	318.0	58.6
20.47	47.0	78.8	7600	324.1	63.6

Table D.8 Suggestive firing table for 122 mm 9M22U rocket

D.3.5 160 mm LAR

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
12	5.6	17.4	323	444	9.0
13	6.3	19.7	423	403	11.2
14	7.3	22.3	550	369	13.9
15	8.3	25.2	711	339	17.2
16	9.5	28.3	912	320	20.9
17	10.8	31.4	1148	310	24.7
18	12.2	34.6	1421	305	28.4
19	13.8	38.1	1754	303	32.3
20	15.5	41.7	2132	303	36.1
21	17.3	45.4	2558	304	39.7
22	19.2	49.2	3034	307	43.1
23	21.2	53.2	3565	309	46.5
24	23.3	57.3	4153	312	49.6
25	25.6	61.8	4834	314	52.8
26	27.9	66.4	5552	316	55.8
27	30.3	71.2	6341	318	58.6
28	32.9	76.4	7242	320	61.4
29	35.6	82.0	8227	322	64,0
30	38.6	88.2	9379	324	66.6
31	41.5	94.1	10552	326	68.3
32	44.6	100.2	11863	330	69.7
33	47.9	106.5	13324	335	70.8
34.2	55.6	120.7	16916	353	73.0

Table D.9 Suggestive firing table for 160 mm LAR rocket

D.3.6 220 mm 9M27F for BM-27 Uragan

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
9	5.1	13.0	177	588	5.4
10	5.7	14.8	231	553	6.5
11	6.3	16.5	291	523	7.6
12	7.0	18.4	368	492	9.0
13	7.8	20.6	465	463	10.7
14	8.7	22.9	584	436	12.7
15	9.6	25.2	714	414	14.7
16	10.6	27.7	870	394	17.0
17	11.7	30.4	1054	376	19.6
18	12.9	33.2	1270	362	22.3
19	14.2	36.2	1520	349	25.3
20	15.6	39.3	1806	340	28.4
21	17.1	42.6	2132	334	31.6
22	18.7	46.0	2501	330	34.8
23	20.4	49.5	2915	329	37.9
24	22.1	53.0	3351	329	40.8
25	24.0	56.8	3864	330	43.8
26	25.9	60.6	4403	332	46.6
27	28.0	64.7	5027	335	49.4
28	30.1	68.8	5681	338	51.8
29	32.4	73.2	6429	344	54.2
30	34.9	77.9	7279	352	56.4
31	37.5	82.8	8201	360	58.5
32	40.5	88.3	9309	369	60.6
33	44.3	95.1	10772	381	62.8
34	52.2	108.6	18825	407	66.7

D.3.7 227 mm M26

Range (km)	Elevation (°)	Fuze time (s)	Apogee (m)	HOB (m)	Velocity (m/s)	AOF (°)
7	9.6	9.25	646	640	650	-2.2
8	9.6	10.84	669	668	614	-0.8
9	9.6	12.53	672	669	580	0.8
10	9.6	14.33	672	641	548	2.6
11	9.6	16.24	672	579	517	4.6
12	9.6	18.28	672	480	488	6.8
13	10.2	20.44	758	470	461	8.7
14	11.0	22.73	884	489	438	10.7

Range (km)	Elevation (°)	Fuze time (s)	Apogee (m)	HOB (m)	Velocity (m/s)	AOF (°)
15	11.9	25.16	1033	510	416	12.9
16	13.0	27.73	1207	530	397	15.2
17	14.1	30.44	1409	551	380	17.8
18	15.3	33.30	1642	572	366	20.6
19	16.6	36.31	1909	592	355	23.6
20	18.1	39.48	2215	613	346	26.7
21	19.6	42.79	2561	633	340	29.9
22	21.2	46.46	2952	654	336	33.2
23	23.0	49.89	3392	674	334	36.5
24	24.9	53.68	3886	695	334	39.7
25	26.9	57.66	4441	716	336	42.8
26	29.1	61.83	5061	736	339	45.8
27	31.4	66.25	5763	761	344	48.7
28	34.0	70.99	6568	795	351	51.4
29	36.9	76.16	7507	829	360	54.2
30	40.2	82.17	8657	863	370	57.0
31	44.8	90.06	10287	896	386	60.3
31.5	50.9	99.98	12526	930	406	64.0

Table D.10 Firing table for M26 MLRS rocket

The M26 MLRS rocket may serve as typical example of a large calibre medium range rocket with a high number of submunitions.

D.3.8 240 mm Falaq-1 spin stabilized rocket

Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
3	8.8	8.9	79	321	6.7
3.5	9.9	10.5	114	308	8.4
4	11.2	12.2	158	298	10.2
4.5	12.6	13.9	212	290	12.2
5	14.0	15.8	277	280	14.4
5.5	15.6	17.8	357	272	16.9
6	17.2	19.8	446	265	19.3
6.5	19.0	21.9	555	259	22.1
7	21.0	24.3	685	254	25.1
7.5	23.1	26.7	834	249	28.3
8	25.6	29.5	1026	246	32.0
8.5	28.3	32.5	1248	244	35.8

9	31.5	35.9	1531	243	40.1
9.5	35.7	40.2	1928	245	45.4
10	45.5	49.5	2936	254	55.8

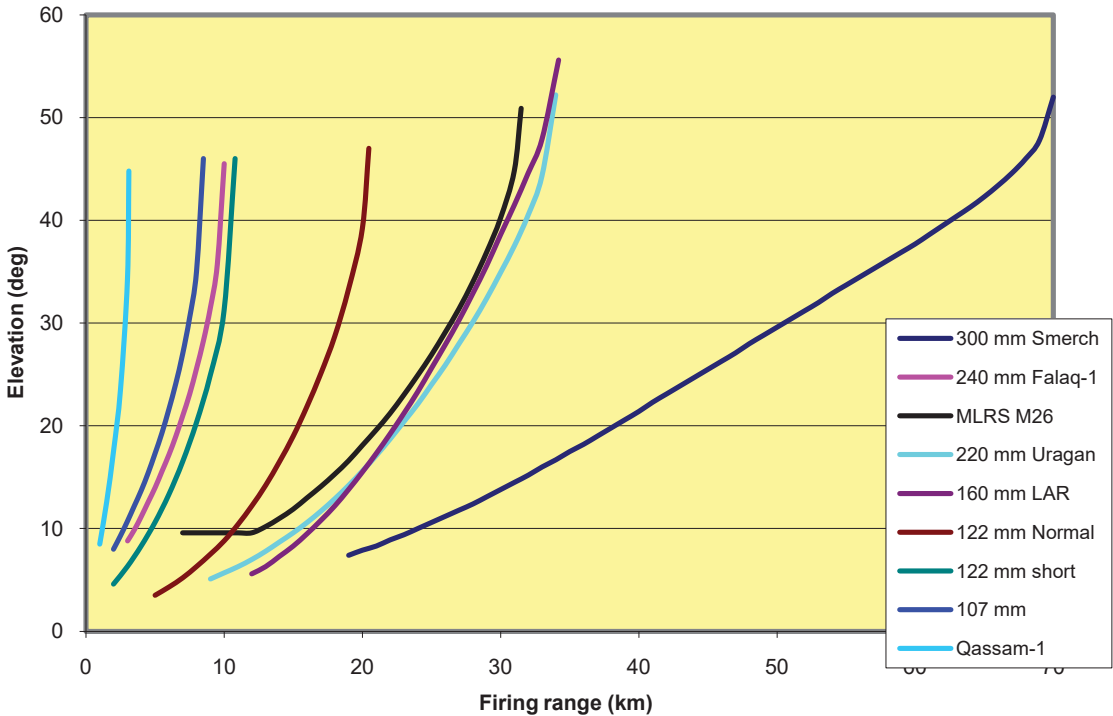
D.3.9 300 mm 9M55K for BM-30 Smerch

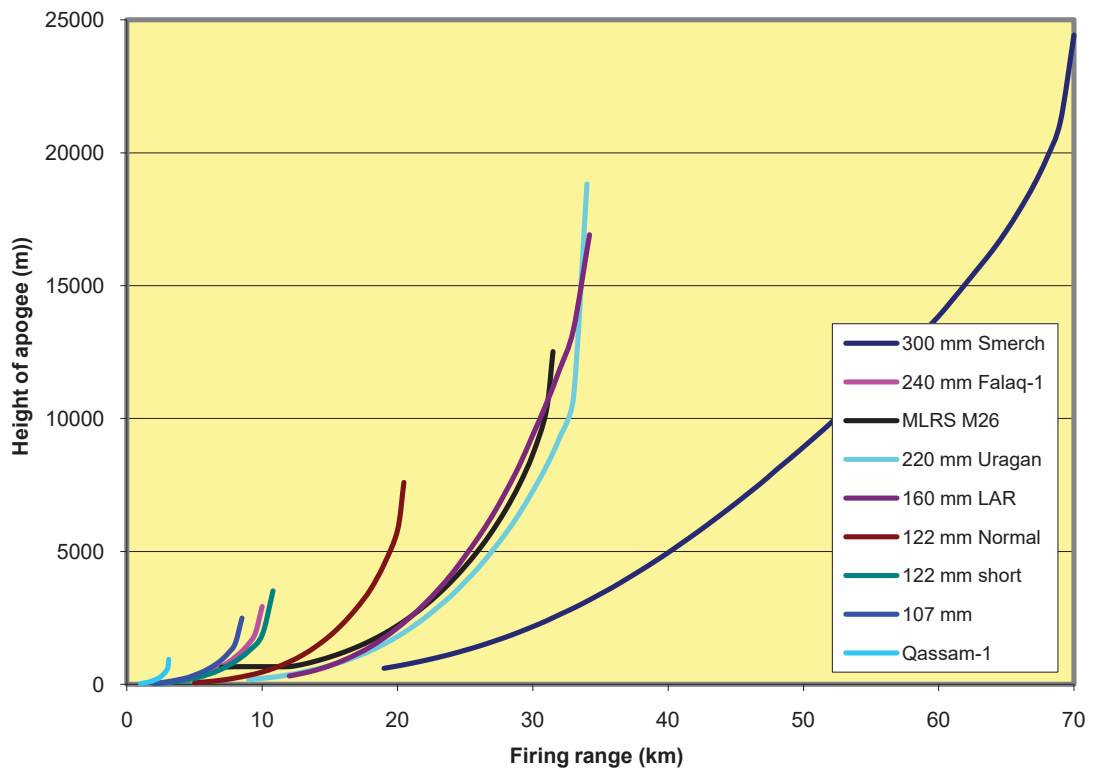
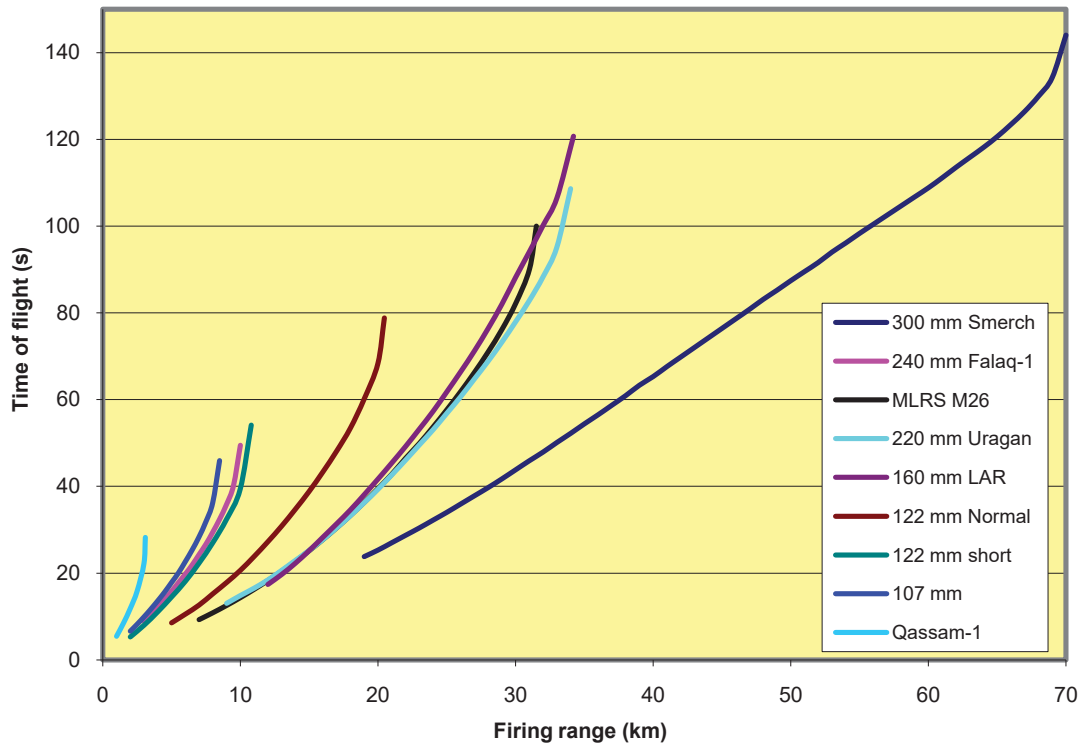
Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
19	7.4	23.8	607	642	9.1
20	7.9	25.3	695	622	10.0
21	8.3	27.0	793	604	11.0
22	8.9	28.7	901	586	12.0
23	9.4	30.4	1018	570	13.1
24	10.0	32.2	1146	554	14.2
25	10.6	34.0	1288	540	15.4
26	11.2	35.9	1438	527	16.6
27	11.8	37.8	1604	515	17.9
28	12.4	39.7	1779	504	19.2
29	13.1	41.7	1971	494	20.6
30	13.8	43.8	2176	486	22.0
31	14.5	45.9	2392	478	23.4
32	15.2	47.9	2633	472	24.8
33	16.0	50.1	2869	466	26.2
34	16.7	52.2	3128	462	27.2
35	17.5	54.4	3403	458	29.1
36	18.2	56.5	3683	455	30.4
37	19.0	58.7	3988	453	31.8
38	19.8	60.9	4299	452	33.1
39	20.6	63.3	4623	452	34.4
40	21.4	65.3	4958	452	35.6
41	22.3	67.6	5311	452	36.8
42	23.1	69.8	5669	454	38.0
43	23.9	72.0	6042	455	39.1
44	24.7	74.2	6425	458	40.1
45	25.5	76.4	6814	460	41.1
46	26.3	78.6	7218	463	42.0
47	27.1	80.8	7627	466	42.9
48	28.0	83.1	8072	470	43.8
49	28.8	85.2	8494	474	44.6
50	29.6	87.4	8929	478	45.3
51	30.4	89.5	9372	482	46.0
52	31.2	91.6	9824	486	46.7

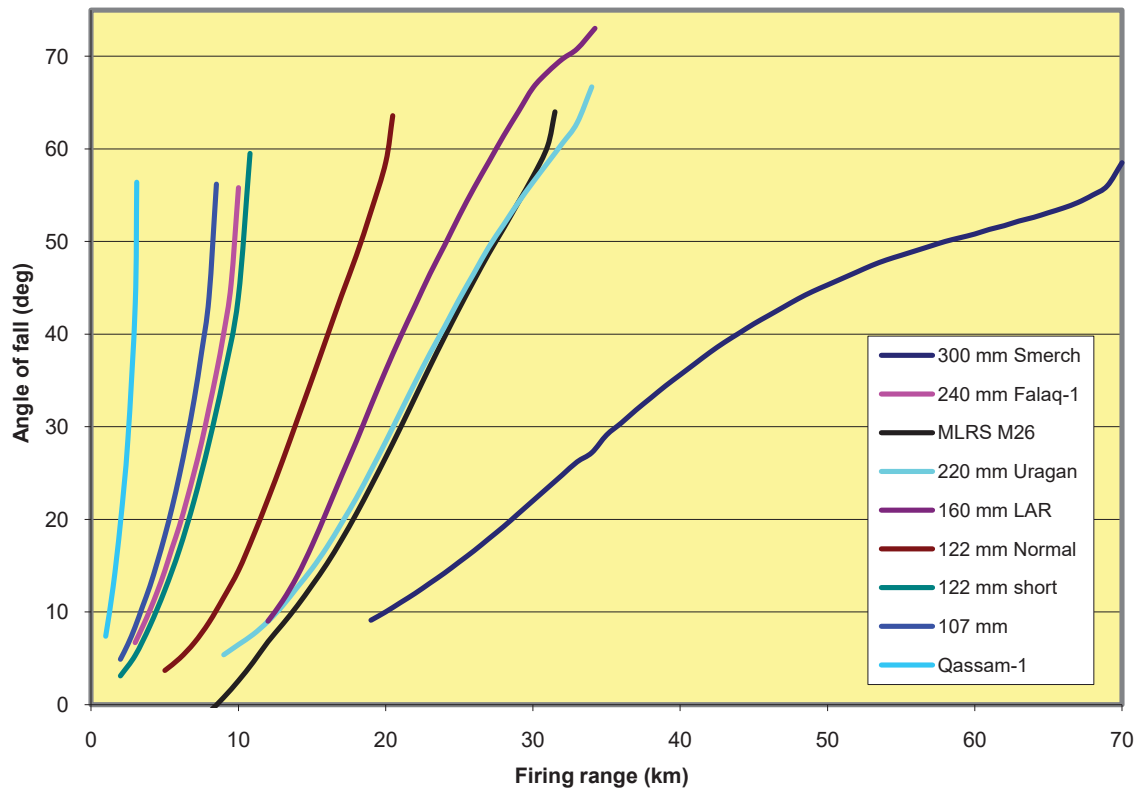
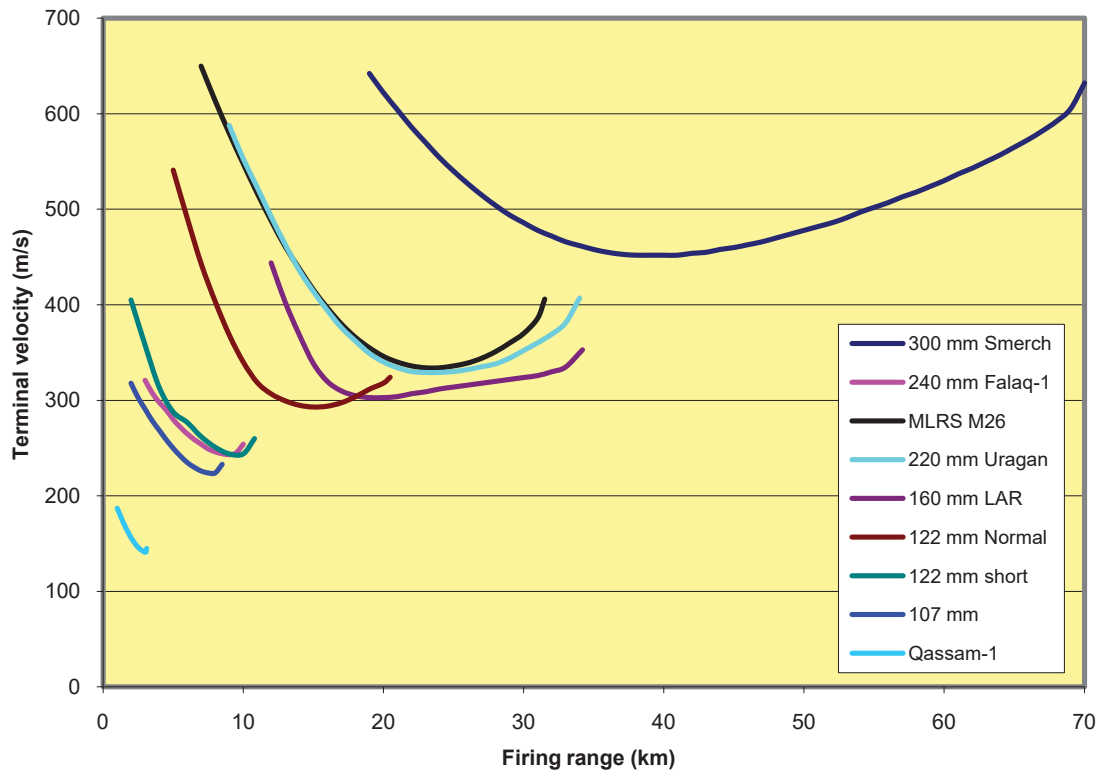
Range (km)	Elevation (°)	TOF (s)	Apogee (m)	Velocity (m/s)	AOF (°)
53	32.0	94.0	10319	491	47.4
54	32.9	96.1	10818	497	48.0
55	33.7	98.3	11301	502	48.5
56	34.5	100.4	11793	507	49.0
57	35.3	102.5	12294	513	49.5
58	36.1	104.6	12805	518	50.0
59	36.9	106.7	13325	524	50.4
60	37.7	108.8	13855	530	50.8
61	38.6	111.1	14457	537	51.3
62	39.5	113.5	15078	543	51.7
63	40.4	115.8	15705	550	52.2
64	41.3	118.1	16343	557	52.6
65	42.3	120.6	17062	565	53.1
66	43.4	123.4	17865	573	53.6
67	44.6	126.4	18753	582	54.2
68	46.0	129.9	19806	592	55.0
69	47.8	134.2	21179	605	56.0
70	52.0	144.0	24427	632	58.5

Table D.11 Suggestive firing table for 300 mm Smerch rocket

D.4 Graphical displays of ballistic tables







Appendix E Russian ammunition nomenclature

Russian nomenclature for munitions can be quite confusing especially when it comes to such complex systems as rocket artillery. Basically the GRAU index (see below) is used, but other and less strict systems are also used. In addition, the Russians tend to give their most popular ordnance nicknames that eventually may become an official part of the name

The GRAU index (Главное ракетно-артиллерийское управление – Main Agency of Missiles and Artillery) has names that consist of three parts:

- a number from 1 to 17 indicating the category of equipment (e.g. artillery, air-defence, missiles)
- a letter signifying the class of equipment with the category (e.g. launcher, missile, warhead)
- a number with up to 3 digit signifying a particular model

In addition variants of the model may be differentiated by adding an additional letter and digit at the end.

As an example, consider the BM-21. The system has GRAU-number 9K51; the vehicle is 2B5; the launcher is 9P132, the main ammunition is 9M22; the ammunition transport vehicle is 9T530; the warhead itself could have a 9N number and so would also any submunitions have. However, the latter two items do not have a number that is known.

- Equipment for rocket artillery mainly belongs to category 9.
- The system including vehicle and launcher usually have class P or sometimes A.
- The launching unit usually has class K. However is the vehicle is inseparable from the launching unit (i.e. special built vehicle) the whole system has class K
- The rocket itself has class M.
- If the warhead is a separate unit (i.e. interchangeable warhead) is has class N
- Any submunition in a warhead may also have class N

A list of GRAU indexed equipment for rocket artillery in the following pages.

2Б2 - vehicle BM-14M 140 mm MRL
2Б2P - vehicle BM-14MM 140 mm MRL
2Б5 - vehicle BM-21 122 mm MRL Grad
2Б7 - vehicle BM-13HM 132 mm MRL
2Б7P - vehicle BM-13HMM 132mm MRL
2Б17 - vehicle BM-21-1 122 mm MRL Grad

2П13 - СПУ Br-230 tactical rocket complex Luna
2П16 - СПУ S-123A tactical rocket complex Luna
2П17 - Т3М S-124A tactical rocket complex Luna
2П21 - СПУ Br-226-II tactical rocket complex Luna

3М16 (9М16) - 122-mm rocket projectile MRL Grad with cluster warhead (5 POM-2 mines)

3Φ1 - 240-mm explosive charge MD-24F c blast warhead for MRL M-24

3X1 - 240-mm explosive charge MS-24 for chemical warhead for MRL M-24

8T137JI – modification of tactical rocket system Luna

8Y012 – Cable for remote firing of MRL BMD-20, BM-24, BM-14

8Y017 – Pneumatic starter ПИЦ for MRL

8Y31 - vehicle BM-24

8Y32 - vehicle BM-14

8Y33 - vehicle BMD-20

8Y34 - vehicle BM-24T

8Y36 - vehicle BM-14-17

8Y36M - vehicle BM-14-17M

9A51 - MRL vehicle Prima

9A52 - MRL vehicle Smerch

9A52-2 - MRL vehicle Smerch (M)

9A52-2T - MRL vehicle Smerch (M), Tatra chassis

9A349 – self-aiming anti-tank munition Motiv-3M

9B63 – automatic inertial system for guided rocket 9M79 Tochka

9B64 – command gyroscopic device for rocket 9M79 Tochka

9B65 – diskette analog computer for rocket 9M79 Tochka

9B66 – circuit board rocket 9M79 Tochka

9B67 – hydraulic feeding station rocket 9M79 Tochka

9B68 – lower steering unit – 2 ea. rocket 9M79 Tochka

9B69 – upper steering unit – 2 ea. rocket 9M79 Tochka

9B149 – turbo charger power supply for rocket 9M79 Tochka

9B150 – guidance unit for rockets 9M79 Tochka

9B151 – resistance unit in 9B149 for rocket 9M79 Tochka

9B152 – gas turbine unit in 9B149 rocket 9M79 Tochka

9B171 - onboard system management for 300 mm for rocket projectile system Smerch

9B172 – electronic timer for 9B171

9B174 – apparatus for electronic measurement 9B171

9B191 - onboard system management 300 mm for rocket projectile systems Smerch

9B217 – apparatus unit TZM 9T29M2

9B232 – apparatus unit TZM 9T29M2

9B242 – regulatory unit in 9B149 rocket 9M79 Tochka

9B616 – hydraulic drive for rockets 9M79 Tochka

9B877-1Б – angular speed gauges for tactical rocket 9M723

9B57M-1 - computer KP 9S445M

9B69 – test unit for rocket complex 9K714

9B120 – impulse meter

9B370M – firing monitor for BM-21

9B391 – operator's console for launcher 9P129 complex 9K79

9B394 – remote console for launcher 9P129 complex 9K79

9B396 – ground based monitor for launcher 9P129 complex 9K79

9B818-820 – automatic control and monitoring unit for tactical rocket complex Tochka

9B818-820-1 - automatic control and monitoring unit for a tactical rocket complex Tochka-U

9B844 – service vehicle for tactical rocket complex Tochka

9B844M – service vehicle tactical rocket complex Tochka-U

9B932-1 – test and control unit for. 9B172

9Д12 - solid fuel rocket engine OTR 9M71, 9M72

9Д19 - solid fuel rocket engine TR type 9M21

9Д140 - solid fuel rocket engine

9Д158 - solid fuel rocket engine 122 mm for rocket projectile type 9M28

9Д159 - solid fuel rocket engine 220 mm for rocket projectile type 9M27

9K51 - MRL Grad
9K52 - tactical rocket complex Luna-M
9K52M - tactical rocket complex Luna-Z
9K52M2 - tactical rocket complex Luna-M2
9K54 - rocket complex Grad-B
9K55 - MRL Grad-1
9K57 - MRL Uragan
9K58 - MRL Smerch
9K59 - MRL Prima
9K79 - tactical rocket complex Tochka
9K79-1 - tactical rocket complex Tochka-U
9K510 – illumination rocket "Illyuminatsiya"
9K711 - operational-tactical rocket complex Uran
9K714 - operational-tactical rocket complex Oka
9K720 - operational-tactical rocket complex Tender (Iskander)

9M16 (3M16) - 122-mm rocket projectile MRL "Grad" with cluster warhead (5 POM-2 mines)
9M21 (3P11) - tactical rocket Luna-M complex 9K52
9M21A (9M21Д) - TP 9M21 with propaganda warhead 9N18A
9M21Б - TP 9M21 with nuclear warhead AA-52
9M21Б1 - TP 9M21 with nuclear warhead AA-38
9M21Г (9M21Х) - TP 9M21 with chemical warhead 9N18Г
9M21Е (9M21У) - TP 9M21 with practice warhead 9N32Е
9M21Е1 - TP 9M21M1 with practice warhead 9N36Е
9M21Е3 – TP 9M21 with practice warhead 9N32Е
9M21Е4 – TP 9M21 with practice warhead 9N36Е
9M21К (9M21-OF) - TP 9M21 with cluster warhead 9N18-OF
9M21M - tactical rocket Luna-3 complex 9K52M
9M21M1 - tactical rocket Luna-M1 complex 9K52
9M21M2 - tactical rocket Luna-M2 complex 9K52M2
9M21ТФ - TP 9M21 with heavy explosive warhead
9M21Ф - TP 9M21 with explosive warhead 9H18F
9M21Ф2 - TP 9M21M1 with explosive warhead 9H18F2
9M22 - 122 mm rocket projectile M-21-OF MRL type Grad with HE/frag warhead
9M22Д - 122 mm rocket projectile MRL type Grad with propaganda warhead
9M22К2 - 122 mm rocket projectile MRL type Grad with cluster warhead (3 PTM-3 mines)
9M22M - 122 mm rocket projectile for unit Grad-P
9M22С - 122 mm rocket projectile M3-21 MRL type Grad with incendiary warhead
9M22У - 122 mm rocket projectile M-21-OF MRL type Grad with HE/frag warhead
9M22У2 - 122 mm rocket projectile MRL type Grad with HE/frag warhead
9M23 - 122 mm rocket projectile Leyka MRL type Grad with chemical warhead
9M23M - 122 mm rocket projectile MRL type Grad with chemical warhead
9M24 - tactical rocket complex Reseda
9M25 - tactical rocket Luna-3M complex 9K52M
9M27 - 220 mm rocket projectile MRL 9K57
9M27Д - rocket projectile Absats - 9M27 with propaganda warhead
9M27К - rocket projectile 9M27 with cluster warhead (30 fragmenting submunition)
9M27К1 - contains incendiary submunition
9M27К2 - rocket projectile Inkubator - 9M27 with cluster warhead (24 mines PTM-1)
9M27К3 - rocket projectile 9M27 with cluster warhead (312 mines PFM-1S)
9M27С - rocket projectile Abrikos - 9M27 with incendiary warhead
9M27Ф - rocket projectile 9M27 with explosive warhead
9M28Д - 122 mm rocket projectile MRL type Grad with propaganda warhead
9M28К - 122 mm rocket projectile MRL type Grad with cluster warhead (3 mines PTM-3)
9M28С - 122 mm rocket projectile MRL type Grad with incendiary warhead
9M28Ф - 122 mm rocket projectile MRL type Grad with separate explosive warhead
9M42 - 122 mm rocket projectile system 9K510
9M43 - 122 mm rocket projectile MRL type Grad with smoke warhead
9M51 - 220 mm rocket projectile MRL 9K57 with fuel air warhead

9M52 - TP 9M21M2 with HE/frag warhead
 9M53Φ - 122 mm rocket projectile MRL type Grad with HE/frag warhead
 9M55K - 300 mm rocket projectile MRL 9K58 with cluster warhead (72 fragmenting submunition)
 9M55K1 - 300 mm rocket projectile MRL 9K58 with cluster warhead (5 self-aiming submunition 9A349 Motiv-3M)
 9M55K4 - 300 mm rocket projectile MRL 9K58 with cluster warhead (25 PTM-3 mines)
 9M55K5 - 300 mm rocket projectile MRL 9K58 with cluster warhead (646 shaped charge submunition)
 9M55C - 300 mm rocket projectile MRL 9K58 with termobaric warhead
 9M55Φ - 300 mm rocket projectile MRL 9K58 with HE/frag warhead
 9M59 - 220 mm rocket projectile MRL 9K57 with cluster warhead (9 PTM-3 mines)
 9M61 – remotely piloted flying device for T90-11 for 300 mm for rocket projectile 9M534
 9M79 - tactical rocket complex Tochka
 9M79-1 - tactical rocket complex Tochka-U
 9M79-1Б - TP 9M79-1 with special warhead
 9M79-1K - TP 9M79-1 with cluster warhead
 9M79-1Φ - TP 9M79-1 with explosive warhead
 9M79K - variant with cluster warhead 9N123K
 9M79M - tactical rocket complex Tochka-M
 9M79P - tactical rocket complex Tochka-P
 9M79Φ - TR 9M79 with explosive warhead
 9M79ΦP - TR 9M79P with explosive warhead
 9M217 - 122 mm rocket projectile MRL type Grad with cluster warhead (2 self-aiming submunitions)
 9M218 - 122 mm rocket projectile MRL type Grad with cluster warhead (45 dual-purpose submunition)
 9M334 – four-rocket module complex 9K331
 9M519-1...7 - complex 122 mm rocket projectile Liliya-2 MRL type Grad for постановки радиопомех
 9M521 - 122 mm rocket projectile MRL type Grad with HE/frag warhead
 9M522 - 122 mm rocket projectile MRL type Grad with отделяемой HE/frag warhead
 9M525 - 300 mm rocket projectile MRL 9K58 with cluster warhead (72 fragmenting submunition)
 9M526 – 300 mm rocket projectile MRL 9K58 with cluster warhead (5 self-aiming submunitions)
 9M527 - 300 mm rocket projectile MRL 9K58 with cluster warhead (25 PTM-3 mines)
 9M528 - 300 mm rocket projectile MRL 9K58 with separate HE/frag warhead
 9M529 - 300 mm rocket projectile MRL 9K58 with fuel air warhead
 9M530 - 300 mm rocket projectile MRL 9K58 with explosive warhead
 9M531 - 300 mm rocket projectile MRL 9K58 with cluster warhead (646 shaped charge submunitions)
 9M533 - 300 mm rocket projectile MRL 9K58 with cluster warhead (5 self-aiming submunitions)
 9M534 - 300 mm rocket projectile MRL 9K58 with remotely piloted flying device
 9M714 - OTR system Oka
 9M714Б - OTR 9M714 with special warhead
 9M714K - OTR 9M714 with cluster warhead
 9M714F – fragmenting-explosive warhead for 9M714
 9M723K1 - OTR complex Tender (Iskander)

9H16 - warhead
 9H18A (9H18Д) - propaganda warhead TP 9M21A (9M21D)
 9H18Г - chemical warhead TR 9M21G (9M21Kh)
 9H18K (9H18-ОФ) - cluster warhead TP 9M21K (9M21-OF) with 42 fragmenting-explosive submunition
 9H21Φ - explosive warhead TP 9M21Φ
 9H21Φ2 - explosive warhead TP 9M21Φ2
 9H24 - fragmenting submunition for cluster warhead
 9H32 - nuclear warhead TP 9M21B with charge AA-21
 9H32E - practice warhead for 9M21E
 9H32M - nuclear warhead with charge AA-52 for TR 9M21
 9H36 - nuclear warhead with charge AA-38 for TR 9M21
 9H36E - practice warhead for 9M21E1
 9H38M - nuclear warhead TP 9M21M with charge AA-38
 9H39 - nuclear warhead TP 9M21 with charge AA-60
 9H39 - nuclear warhead TP 9M79Б with charge AA-60
 9H56 - chemical warhead for rocket projectile
 9H57 - chemical warhead for rocket projectile
 9H58 - chemical warhead for rocket projectile

9H65 - nuclear warhead TR 9M79B with charge AA-80
 9H65 - nuclear warhead TR 9M79B1 with charge AA-86
 9H123Г - chemical warhead TR 9M79
 9H123Г2-1 - chemical warhead TR 9M79
 9H123K - cluster warhead TR 9M79K, 9M79-1K with 50 submunition 9N24
 9H123Ф - fragmenting-explosive warhead TR 9M79F, 9M79-1F
 9H123Ф-1 - fragmenting-explosive warhead TR 9M79FR with passive radar homing warhead
 9H128Д - propaganda warhead for rocket projectile 9M27Д
 9H128K - cluster warhead for rocket projectile 9M27K with 30 fragmenting submunition 9N210
 9H128K2 - cluster warhead for rocket projectile 9M27K2 with 24 mines 9N211
 9H128K3 - cluster warhead for rocket projectile 9M27K3 with 312 mines 9N212
 9H128C - incendiary warhead for rocket projectile 9M27S
 9H128Ф - explosive warhead for rocket projectile 9M27F
 9H138 - warhead for rocket projectile 9M55K with fragmenting submunition
 9H139 - cluster warhead for rocket projectile 9M55K with 72 fragmenting submunition 9H235
 9H150 - separate fragmenting-explosive warhead for rocket projectile type 9M55
 9H152 - cluster warhead for rocket projectile 9M55K1 with 5 self-aiming submunition Motiv-3M
 9H174 - thermobaric warhead for rocket projectile type 9M55
 9H176 - cluster warhead for rocket projectile 9M55K5 with 646 dual-purpose submunition
 9H210 - fragmenting submunition for cluster warhead
 9H211 - anti-tank mine ИТМ-1 for cluster warhead
 9H212 - anti-personnel mine ПФМ-1С for cluster warhead
 9H215 - passive radar homing warhead for TR 9M79R
 9H230 - chemical submunition
 9H235 - rebounding fragmenting submunition Poprygunya for cluster warhead
 9H310 - warhead hull 9H123F rocket 9M79F Tochka
 9H311 - hull for cluster fragmenting warhead 9N123K ракеты 9M79K Tochka
 9H516 - cluster warhead for rocket projectile 9M27K1 with осколочными submunition 9N235
 9H519 - chemical warhead for rocket projectile
 9H524 - cluster warhead for rocket projectile 9M59 with 9 PTM-3 mines
 9H528K3 - cluster warhead for rocket projectile
 9H539 - cluster warhead for rocket projectile 9M55K4 with 25 PTM-3 anti-tank mines

9П112 - Self-propelled launcher Бр-237 complex 9К52 (tracked)
 9П113 - Self-propelled launcher Бр-231 complex 9К52 (wheeled)
 9П113М - Self-propelled launcher complex 9К52М
 9П113М2 - Self-propelled launcher complex 9К52М2
 9П114 - Self-propelled launcher Бр-257 complex 9К53
 9П125 - military vehicle BM-21В MRL "Град-В"
 9П129 - Self-propelled launcher complex 9К79
 9П129М-1 - Self-propelled launcher complex 9К79-1
 9П132 - portable launcher ПУ ТKB-042 Grad-P (Partizan) for 122 mm for rocket projectile 9M22M
 9П138 - combat vehicle MRL Grad-1
 9П139 - combat vehicle MRL Grad-1 (tracked)
 9П140 - combat vehicle MRL Uragan
 9П612 - device for remote installation of initiators 9Еh260-1
 9П618-1М - аппаратура дистанционного ввода данных в БСУ 9В191
 9П71 - Self-propelled launcher complex 9К714
 9П78 - Self-propelled launcher Astrolog complex 9К720
 9П78-1 - Self-propelled launcher complex 9К720
 9П81 - Self-propelled launcher complex 9К720

9С83 - meteorological station
 9С445 - reference point
 9С445М - command node complex 9К52
 9С473 - staff command vehicle
 9С482 - navigational vehicles ПУ-12 (with variants)
 9С522 - staff command vehicle system 9К720
 9С619 - data transmission unit for radar data processor
 9С738 - staff command vehicle Pled

9C766M1 – rear units maintenance vehicle
 9C910 – automatic guidance unit
 9C920 – information distribution unit complex 9K720

9T114 – airport storage handler for container 9Ya236
 9T127 - airport storage handler complex 9K79
 9T133 - airport storage handler for контейнеров 9Ya234
 9T29 – auxiliary transport vehicle complex 9K52
 9T29-1 - auxiliary transport vehicle complex 9K52
 9T29M - auxiliary transport vehicle complex 9K52M
 9T29M2 - auxiliary transport vehicle complex 9K52M2
 9T215 - transport vehicle for ракетных частей ОТР 9M76
 9T218 - auxiliary transport vehicle complex 9K79
 9T218-1 - auxiliary transport vehicle complex 9K79-1
 9T218-1M - auxiliary transport vehicle complex 9K79-1
 9T219 - transport vehicle for warhead ОТР 9M76
 9T222 - transport vehicle complex 9K79 и 9K79-1
 9T230 - auxiliary transport vehicle complex 9K714
 9T232M - auxiliary transport vehicle MRL Prima
 9T234 - auxiliary transport vehicle MRL Smerch
 9T234-2 - auxiliary transport vehicle MRL Smerch
 9T234-2T - auxiliary transport vehicle MRL Smerch (Tatra chassis)
 9T238 - transport vehicle for rocket complex 9K79 (with variants)
 9T239 - transport vehicle
 9T240 - transport vehicle complex 9K714
 9T250 - auxiliary transport vehicle complex 9K720
 9T254 - transport vehicle MRL Grad
 9T33 - transport vehicle complex 9K33
 9T35 – crane for complex 9K76
 9T315 – overload support arm for rocket, warhead complex 9K79
 9T316 – overload support arm rocket, warhead complex 9K79
 9T325 - complex такелажного оборудования
 9T450 - auxiliary transport vehicle MRL Grad-1
 9T452 - auxiliary transport vehicle MRL Uragan
 9T460 - rack for MRL
 9T52 – rocket complex rig
 9T53 – crane for auxiliary transport vehicle 9T29M2
 9T55 – overload support construction for rocket and warhead complex 9K79
 9T55A - rocket complex rig
 9T57 - rocket complex rig
 9T62 – isothermal vehicle for rocket and warhead complexa 9K79
 9T63 – isothermal vehicle for rocket and warhead complexa 9K79
 9T64 – support beam for rocket and warhead complex 9K79
 9T66 – support beam for rocket and warhead complex 9K79
 9T610 – isothermal vehicle for rocket and warhead complexa 9K79

9Ф19 – mobile technical repair base MRL
 9Ф25 – computer simulator for rocket complexes Tochka, Tochka-U
 9Ф110 - mobile technical repair base
 9Ф117 - process equipment unit
 9Ф222 – machine storage
 9Ф223 - transport vehicle warhead complex 9K52
 9Ф32 - transport vehicle
 9Ф37 – rack system MRL Grad
 9Ф37Б - rack system MRL Grad
 9Ф37В - rack system MRL Grad-B
 9Ф37М – unified rack complex for MRL Grad, Grad-1, Prima, Damba
 9Ф342-344 - rig
 9Ф370 - special arsenal complex for equipment and tools for Tochka
 9Ф370-1 - special arsenal complex for equipment and tools for Tochka-U

9Ф374 – welding equipment at auxiliary transport vehicle for 9Т29М2
9Ф381 – special arsenal complex for equipment and tools MRL Uragan
9Ф625 – computer simulation complex self-propelled launcher complex Tochka
9Ф625-1 - computer simulation complex self-propelled launcher complex Tochka-U
9Ф647 – education and training unit Sizyak in complex Smelchak
9Ф689 – target arrangement Bobr for MRL Grad
9Ф817 – training and practice complex MRL Uragan
9Ф819 - complex special arsenal complex for equipment and tool MRL Smerch
9Ф827 – education and training unit MRL Smerch
9Ф839 - 122 mm rocket projectile – air target imitator complex 9F689
9Ф839-1 - 122 mm rocket projectile - air target imitator complex 9F689
9Ф839-2 - 122 mm rocket projectile - air target imitator complex 9F689
9Ф840 – education and training arrangement MRL Smerch

9Х11 - charge solid fuel rocket engine 9D12
9Х15 - powder charge solid fuel rocket engine
9Х18 - charge solid fuel rocket engine 9D19
9Х37 - explosive charge submunition 9H210
9Х111 - charge solid fuel rocket engine for rocket projectile 9M22
9Х111М2 - charge solid fuel rocket engine for rocket projectile 9M22U
9Х111М3 - charge solid fuel rocket engine for rocket projectile 9M22U2
9Х151 – fuel charge DAP-15V impeller unit rocket 9M79 Tochka
9Х164 - charge solid fuel rocket engine for rocket projectile 9M27
9Х226 – ignitor safety unit (for incendiary 9Kh249)
9Х249 – fuel ignitor charge 9Kh151 rocket 9M79 Tochka

9Э92 - safety and arming unit
9Э96 - safety and arming unit
9Э117 – safety and arming mechanism for warhead 9N123F(K) rocket 9M79F(K) Tochka
9Э118 –no contact fuze for warhead 9N123F rocket 9M79F Tochka
9Э128 – contact fuze for warhead 9N123F rocket 9M79F Tochka
9Э132 - safety and arming unit
9Э136 - fuze Prosvetitel' for OFS 3OF30, 152 mm and 122 mm OFS
9Э29 - fuze warhead 9N18F
9Э210 - mechanical fuze MRV for for rocket projectile 9M22, 9M23
9Э231 - fuze for rocket projectile 9M22M
9Э234M - safety and arming unit
9Э236 - fuzing device
9Э244 - mechanical fuze for rocket projectile 9M27F
9Э245 – 120 seconds remote tube for rocket projectile 9M27K
9Э246 - fuze for submunition 9N210
9Э246M - fuze for submunition 9N210
9Э260 - electro-mechanical head proximity-contact fuze 122 mm for rocket projectile
9Э260-1 - electro-mechanical head PD - proximity fuze 122 mm for rocket projectile 9M53F
9Э265 – fuzing device
9Э268 - safety and arming unit 300 mm for rocket projectile
9Э269 - safety and arming unit 300 mm for rocket projectile
9Э271 - fuze
9Э272 - fuze for fragmenting submunition
9Э273 – fuzing device
9Э285 - electro-mechanical head PD - proximity fuze 301B 122 mm for rocket projectile
9Э310 – proximity (radio-localizing) fuze 122 mm for rocket projectile 9M23
9Э326 – radio warhead 9N123K rockets 9M79K Tochka
9Э328 - proximity fuze Gibrid
9Э343 - proximity fuze Polufinal
9Э428 – guidance head self-aiming submunition
9Э436 – guidance head OTR 9M722

9Я26М – transport container warhead AA-52 for TR 9M21
9Я224М – transport container warhead AA-38 for TR 9M21

9Я230 – transport container OTR 9M76
9Я234 - transport container rocket motor part of complex Tochka
9Я236 - transport container warhead complex Tochka
9Я248M - container for for rocket projectile MRL Uragan
9Я281 - transport container for rocket module 9M334
9Я43 - transport container
9Я616 - transport container for rocket motor part of complex Luna-M2
9Я634 - transport container for warhead 9N18F, 9N32E and 9N36E
9Я665 - transport container for warhead 9N18E


Appendix F Rocket artillery in Iraq and Afghanistan

The following data is taken from the EOD guides that U S Navy have issued for the forces in Afghanistan [41] and Iraq [42].

The pictures are not to scale.

F.1 Afghanistan

	Type 63. Chinese 107 mm HE for MD-21
	R107 North Korean
	9M28F
	9M22U. Standard rocket for BM-21 Grad
	9M22M Standard rocket for portable system Grad-P
	9N128K2 AT mine dispensing warhead on 9M27K2 for Uragan
	9N128F HE/Fragmenting warhead on 9M27F for Uragan
	9M27K1
	9M27K3 AP mine dispensing rocket
	KB-1 submunition from 262 mm rocket
	PTM-1 scatterable AT mine delivered by BM22 Uragan

	<p>POM-2S AP mine delivered with 9M18 122 mm rocket</p>
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F.2 Iraq

	<p>Type 63 . Chinese 107 mm HE for MD-21</p>
	<p>Type 63-1 Chinese 107 mm Incendiary for MD-21 and MJ-1</p>
	<p>Type 63-2, Chinese 107 mm HE for MJ-1</p>
	<p>Type 81, Chinese 122 mm HE for MJ-4 and MJ-4A</p>
	<p>Firos, Italian 122 mm HE</p>
	<p>9M22U, Russian 122 mm HE for BM-21 Grad</p>
	<p>M77 DPICM bomblet delivered with M26 MLRS</p>

Appendix G Rockets and rocket launchers operated by non-state parties

G.1 Hezbollah

The Hezbollah organization, representing the Shia muslims in Southern Lebanon, made use of their stock of rocket artillery most recently during the war in Lebanon in 2006. Hezbollah is supposed to have received most of its inventory of ordnance from Iran through Syria, as a major part of their inventory is of Iranian origin. However, some quite modern Russian or Chinese systems are also found probably received directly from Syria. The whole arsenal is supposed to constitute around 13000 rockets.

The table below shows the types that are believed to be in stock. The number of each type is too uncertain to be given here.

Type	Calibre (mm)	Range (km)	Warhead (kg)
Haseb*	107	9	8
BM-21	122	20	21
Type 90	122	30	
BM-27	220	40	100
Fadjr-3	240	45	45
Shahin I (Ra'ad I)	333	13	190
Shahin 2	333	29	190
Fadjr-5 (Khaibar-1)	333	75	90
Falaq-1	240	11	50
WS-1	302	80	150
Fateh-110	170	>200	500
Arash	122	20	18
Oghab	230	45	70
Zelzal-2	610	400	600

Table G.1 *Rockets in the inventory of Hezbollah*

*) Haseb is an Iranian version of the Chinese Type 63, which again was a copy of the Russian BM-12

During the war in 2006 close to 4000 rocket were fired into Israel. Hezbollah itself claims that twice that number was fired. According to Human Rights Watch [43] the following six types were used:

- 1111 of 122 mm rockets of unspecified types
- 246 of 122 mm enhanced range rocket, probably Type 90
- 86 of 220 mm Uragan
- 6 of 240 mm Falaq-1 spin stabilized rockets
- 6 of 240 mm long range Fadjr-3 rockets
- 31 of 302 mm rockets probably WS-1

In addition 107 mm Haseb rockets were probably also used. The list above is not complete since it does not sum up to 4000 rockets. It contains only examined sites of strike.



Figure G.1 Hezbollah preparing the launch of a rocket – probably the Shahin-1

G.2 Hamas

The Hamas organization in the Gaza strip is known to have a wide variety of rockets, both for direct fire and indirect fire. The Qassam rockets are the most renown. They are described in chapter x.x as improvised systems.

The Gaza conflict that started in late December 2008, proved that Hamas was in possession of 122 mm Grad rockets reaching beyond 20 km range, even as far as 40 km. It is not known what kind of launcher has been used. The length and size of these rockets would make them hard to

smuggle. However, it may be possible to divide the long range motor of Grad into three parts. The fourth part would then be the warhead, which is rather small on that rocket.[44]

The Hamas is also claimed to have other rockets as well. The data about these are scarce and hard to verify. However according to an Israeli source [45], Hamas or other Palestinian organizations like Islamist Jihad, Jenin Martyr’s Brigade and Fatah, are in possession of rockets as shown in the table below. It should be emphasized that this source may not have total credibility.

It has been claimed that Hamas is in possession of 70 km range Fajr rockets. These rockets are 10 m long and it would be very challenging to smuggle and conceal such ordnance. This claim has not been confirmed.[44]

Name	Weight (kg)	Length (cm)	Calibre (mm)	Range (km)	Warhead (kg)
Haseb	19	84	107	9	8
Nasser 3 (long)	30	160	90	9	9 – 10
Nasser 3 (short)	25	125	90	6	9 – 10
Nasser 4	40	180	115	9	9 – 10
Quds 2A	23.5	150	90	6	8
Quds 2B	33.5	110	115	7	8
Quds 3A	35	130	102	8.5	6 – 7
Quds 3B	42	200	127.5	9	8
Hawkeye				55	15 – 20
Kafah				17	
Arafat				8	

Table G.2 Rockets in the inventory of Hamas

Recognizing that quite unsophisticated rockets with obviously low accuracy are quite effective as weapons of terror, Palestinian organizations seems to be very active in developing new versions of their rockets with ever increasing range.

G.3 Taliban

Before Operation Enduring Freedom starting late 2001 which toppled the Taliban regime in Afghanistan, it was known that Taliban had a considerable inventory of rocket artillery. It consisted primarily of the old Soviet Russian systems 122 mm BM-21, the old 132 mm BM-13-16, the spin stabilized BM-14 and 220 mm BM-14-17. [46;47] The number is uncertain, but possibly in the range of 50 – 80 units.

It is not known for certain how many of these unit still are in Taliban service, but the majority of inventory was obviously lost or destroyed during Operation Enduring Freedom. However, there

have been reports indicating that some units of BM-21 have been used in the aftermath of that operation. Among those was a claim that BM-21 was applied in an air defence role. However, BM-21 or any other rocket artillery is very ill-suited for such a role. [48]

Appendix H Current launcher systems


This appendix describes, in some detail, the current rocket system that is believed to be in operation. For many systems, the operational status is not known with certainty. However, the possibility that some of these systems can be revived should not be excluded.



The list is not complete. Especially, several North Korean and Iranian systems are excluded due to lack of available information.


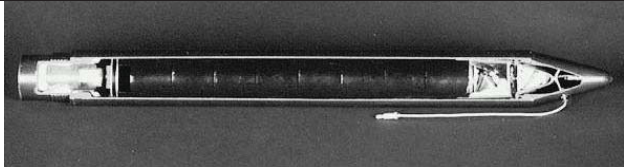
The systems are ordered according to the calibre of the system.

For country abbreviations, see appendix J.



The main sources for this section are Jane's Armour and Artillery (JAA) [49] and Jane's Ammunition Handbook (JAH) [50]. Some information are also taken from World Equipment Guide 2001 [51], and the book by Hull et al [52]

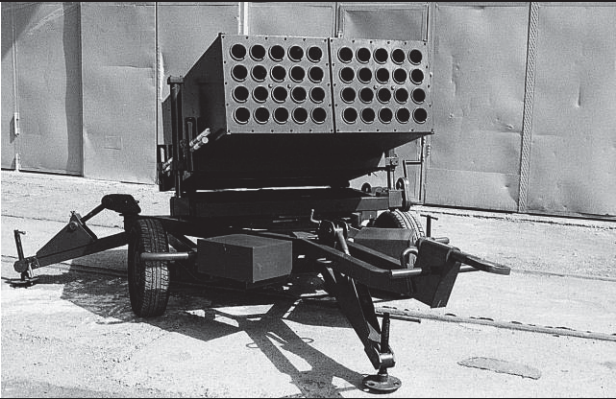
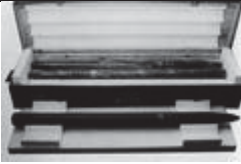
Firos	BPD Difesa e Spezio	Italy
Calibre 51 mm		
Carrier: ACMAT Jeep		
No. of tubes/rails: 48		
Range 6.5 km		
Ammunition types		
HE		
HE – preformed fragments		
AT/AP – shaped charge		
Smoke		
Spotting		
Training smoke		
Used by: MEX	<p>Rocket mass 4.8 kg; warhead 2.2 kg Velocity 515 m/s at burnout at 1.1 s Firing rate 10 rockets/s</p>	

S-5		Soviet Union
Calibre 57mm		
Carrier: Light truck		
No. of tubes/rails:20		
Range - 4.5 km		
Ammunition types:		
HE		
		
Used by: UKR, BIH	<p>To large extent an improvised system The pod is an original direct fire rocket pod for the Mi-24 Hind helicopter</p>	



LAU97	Forges de Zeebrugge	Belgium
Calibre 70 mm		
Carrier: VLRS 4.15 LRM		
No. of tubes/rails: 40		
Range 0.7 - 9 km		
Ammunition types		
FZ-100 Cargo		
FZ-49 Anti-Armor		
FZ-71 Anti-personnel		
M257 ILL		
		
Used by: UAE, INA	<p>A ground launched version of the air-launched HYDRA system. Cargo warhead contains 9 DPICM 0.48 kg each. The rocket weighs about 6.2 kg</p>	



Source: JAA

SBAT-70		Brazil
Calibre : 70 mm		
Carrier: Towed		
No. of tubes/rails:36 or 42		
Range - 7.5 / 12 km		
Ammunition types		
HE		
		
Used by: BRA	Rocket mass 14.6 kg; warhead 3.2 kg Velocity 700 m/s Developed in U SA as Slammer-6	


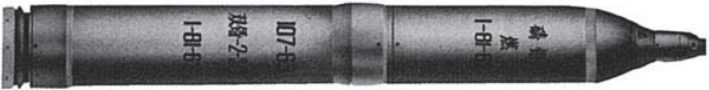
TF M95 Heron		Croatia
Calibre:70 mm		
Carrier: Towed		
No. of tubes/rails: 40		
Range -8 km		
Ammunition types		
HE		
ILL		
Smoke		
Incendiary		
Training		
Used by: CRO	Rocket mass 10 kg; warhead 3.7 kg Velocity 400 m/s (enhanced version 550m/s) A modified version has a range of 10 km	

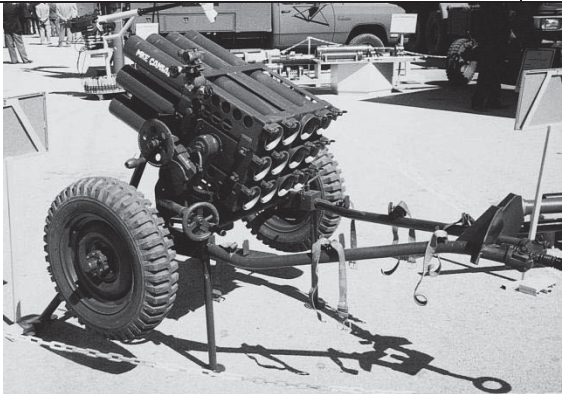
JAH


S-8		Soviet Union
Calibre: 80 mm		
Carrier: Light/medium truck		
No. of tubes/rails: 20		
Range - 6 km		
Ammunition types		
HE		
		
Used by: UKR, ABK	<p>An half-improvised system applying the rocket pod of the S-8 system used av Russian helicopters. Rocket vel. 450 m/s. Rocket mass 15.2 kg; warhead 7.4 kg.</p>	

PAMPERO	Fabrica Militar Fray Luis Beltran	Argentina
Calibre: 105 mm		
Carrier: MB unimog 4 x 4		
No. of tubes/rails:16		
Range - 10.1 km		
Ammunition types		
HE		
		
Used by: ARG	<p>Rocket weight 28.5 kg, length 1,467 m; burn-out velocity 530 m/s</p>	

JAA; JAH

Type 63	NORINCO	DR Korea
Calibre: 107 mm		
Carrier: Towed or jeep mounted		
No. of tubes/rails: 12		
Range - 8.5 km		
Ammunition types		
HE		
Incendiary		
ECM		
		
Used by: ALB, BUF, CMB, DRC, JOR, LIB, MYA, NIC, PAK, SUD, SYR, UGA	Spin stabilized (6 nozzles). Launch velocity 34 m/s Rocket mass 14 kg Previously known as H-12 Variants made in IRN, NKO, RSA	

T-107	MKEK / Roketsan	Turkey
Calibre: 107 mm		
Carrier: Towed		
No. of tubes/rails: 12		
Range - 8.5 km		
Ammunition types		
HE (TR-107)		
HE (TRB-107 – prefragm.)		
Used by: TUR The launcher may also be placed on a light vehicle	Spin stabilized rocket, mass 19.5 kg, length 0.84 m Warhead 8.5 kg, 1.25 kg TNT Max. velocity 370 m/s	

108-R	Avibras,	Brazil
Calibre: 108 mm		
Carrier: Towed		
No. of tubes/rails: 16		
Range: - 9.1 km		
Ammunition types		
HE		
Used by: BRA (may be phased out)	Rocket mass 16.8 kg, warhead 7.8 kg, explosive 2.5 kg Rocket length 0.97 m. Max.velocity 440 m/s	


JAA

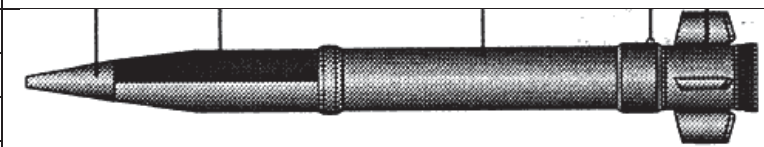
Kung-Feng VI		Rep China
Calibre: 117 mm		
Carrier: M52A1 (6 x 6)		
No. of tubes/rails:45		
Range: - 14.9 km		
Ammunition types		
HE		
Used by: ROC	Rocket mass 59.8 kg To be replaced by RT2000 Mk15	


RT2000 Mk15		Rep China
Calibre: 117 mm		
Carrier: M977 HEMTT		
No. of tubes/rails: 60		
Range -15 km		
Ammunition types		
HE		
Used by: ROC	Rocket mass 59.8 kg (same rocket as for Kung Feng IV A)	

<http://www.military-today.com/artillery/rt2000.htm>



<http://wiki.livedoor.jp/namacha2/d/117mm45%cf%a2%cf%5%bc%ab%cf%6%a5%ed%a5%b1%a5%cf%3%a5%cb%a4%a1%cf%6%b9%a9%cb%aa%b7%bf%a1%cf%7>

9K132 Grad-P	Kovrovsk Mech. Plant	Soviet Union
Calibre: 122 mm		
Carrier: Portable		
No. of tubes/rails: !		
Range 0.8 – 10.0 km		
Ammunition types		
HE		
Smoke		
Used by: RUS, EGY, HIZ Egyptian version is called PR-113	Rocket mass 91 kg, warhead 46 kg	




Sakr-30/36/40		Egypt
Calibre: 122 mm		
Carrier: Towed or truck		
No. of tubes/rails: 6 / 21/30/40		
Range - 20/36 km		
Ammunition types		
Sakr 10 (HE)		
Sakr 18 (HE)		
Sakr 30 (HE)		
D-4000 (smoke)		
D-6000 (smoke)		
Cargo (98 DPICM)		
Mines (5 AT mines)		
Used by: EGY		


SAKR Series 122 and 325 mm Multiple Launch Rocket Systems - Archived 8/2003; Forecast International, August 2002


BM-21 Grad		Soviet Union
Calibre: 122 mm		
Carrier:		
No. of tubes/rails: 40		
Range 1.6/5 – 20.75		
Ammunition types		
HE		
DPICM		
AT mines		
AP mines		
		
Used by: Numerous (see section H-1 and I)	This system and its variants are described further in section H-1	

Equiv PRC Type 81


Firos-25/30	Snia Viscosa	Italy
Calibre: 122 mm		
Carrier:		
No. of tubes/rails: 40		
Range: 8 – 25/34		
Ammunition types		
HE		
HE-prefragmented		
WP smoke		
AT-mines (6)		
AP-mines (22)		
DPICM (77)		
Used by: ITA	Rocket mass 58 / 65 (Firos-30)	

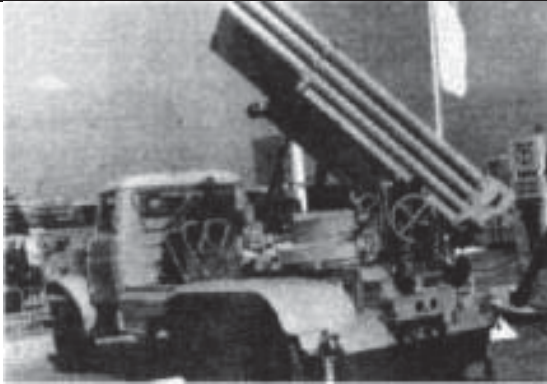

FIROS 51 and 122 mm Multiple Launch Rocket Systems - Archived 8/2003


Type 90 / KRL 122	Norinco	PR China
Calibre: 122 mm		
Carrier: XC2000 6 x 6		
No. of tubes/rails: 40		
Range: 12.7 – 32.7 km		
Ammunition types		
HE		
Used by: ARM, BAN, PRC	Another 40 rockets is transported on the vehicle. Rocket length 2.75 m. Long range version 40 km range	

T-122 Sakarya	Roketsan	Turkey
Calibre: 122 mm		
Carrier: XC2000 6 x 6		
No. of tubes/rails: 40		
Range: 3 – 40 km		
Ammunition types		
HE		
HE/Frag		
Used by: TUR, UAE	See table x.x	


JAH


Type 89	Norinco	PR China
Calibre: 122 mm		
Carrier: 12150L.		
No. of tubes/rails: 40		
Range: 15 - 40 km		
Ammunition types		
HE/Frag		
prefragmented		
DPICM		
AT mines		
AP mines		
Used by: PRC,	Another 40 rockets is transported on the vehicle. Rocket length 2.75 m.	

BM-11		Soviet Union
Calibre: 122 mm		
Carrier: Various		
No. of tubes/rails: 30		
Range: 5 – 20.75		
Ammunition types		
HE		
		
Used by: NKO	North Korean version of BM-21 with same rocket	



RM-70 /RM-75		Czech Rep
Calibre : 122 mm		
Carrier: Tatra 813 8 x 8		
No. of tubes/rails: 40		
Range: 1.6 - 20		
Ammunition types		
HE/Frag		
DPICM (56 AGAT)		
AT mines		
Ap mines		
Used by: ANG, CZE, FIN, GEO, GRE, LIB, MYA, PER, POL, ROM, RWA, SLK, SRI, UGA, YEM	See own 122 mm /BM-21 section below HE-version has 6.4 kg explosives	

Romanian version is called APR-40 and APR-21

LAROM BM-21		Romania
Calibre: 122 mm		
Carrier:SR-114		
No. of tubes/rails:		
Range - 20.75 mm		
Ammunition types		
HE		
Used by: ROM		Same rockets as BM-21 Grad


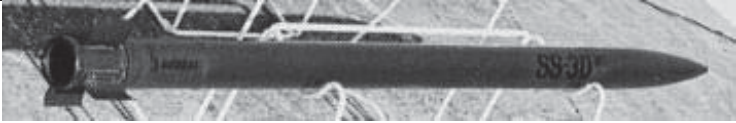
Lynx	IMI	Israel
Calibre: 122 / 160 / 300 mm		
Carrier:KamAZ-740		
No. of tubes/rails: 40 / 26 / 8		
Range - 21 / 45 / 150 km		
Ammunition types		
HE Frag		
Smoke		
Prefrag		
Incendiary		
AT mines		
Cluster		
Illumination		
Used by: AZB	<p>122 mm uses same rockets as BM-21 Grad</p> <p>160 mm uses same rockets as for LAR-160</p> <p>300 mm rocket weighs 450 kg; warhead 150 kg; Length 3970 mm; guided</p>	

http://www.military-today.com/artillery/azerbaijan_lynx.htm

Valkiri Mk I 22	Arm Scor	South Africa
Calibre 127 mm		
Carrier: Samil 20		
No. of tubes/rails: 24		
Range 8 – 22.7 km		
Ammunition types		
HE - 53.5 kg		
		
Used by: RSA	Remarks: Firing on less than 15 km requires drag rings	

<http://www.army-technology.com/projects/astros/specs.html>


Kung-Feng III/IV		Rep China
Calibre: 126 mm	No picture available	
Carrier: Tracked		
No. of tubes/rails: 40		
Range: - 9 km		
Ammunition types		
HE		
Used by: ROC	Limited information. Some sources claim that the calibre is 117 mm	

Astros II (SS-30)	Avibrás	Brazil
Calibre 127 mm	 <p style="text-align: center;">bxp45967 www.fotosearch.com</p>	
Carrier: Tectran 6x6 AV-LMU		
No. of tubes/rails: 32		
Range 9 – 30 km		
Ammunition types		
HE		
		
Used by: BAH, BRA, IRQ, MLA, QAT, KSA	Previously built in Iraq under licence as Sajil-30 Rocket length 3.9 m Weight 68 kg	


JAA/ JAH

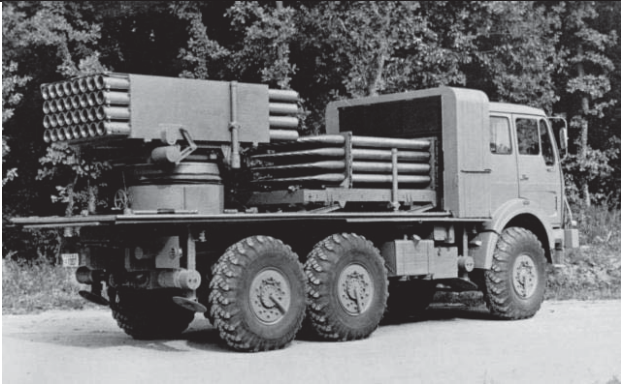
<http://www.army-technology.com/projects/astros/specs.html>

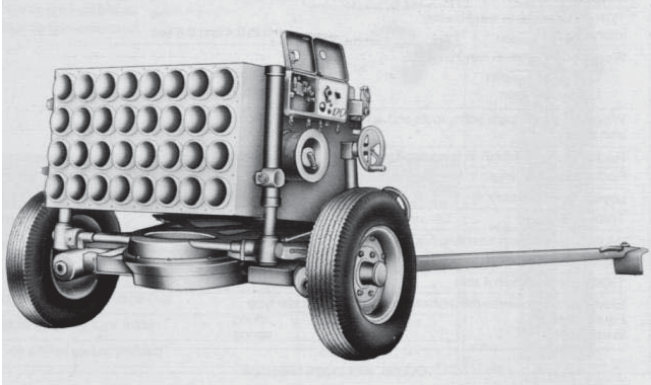
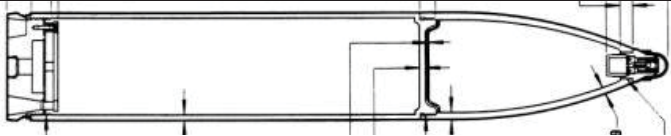
Valkiri Mk I 5	Arm Scor	South Africa
Calibre 127 mm	No picture available	
Carrier: Towed		
No. of tubes/rails: 12		
Range 5.5 km		
Ammunition types		
HE - 18 kg - prefragmented		
Used by: RSA	Remarks: Burnout velocity 250 m/s at 0.8 s Rocket mass 30 kg; length 1.4 m,	

Valkiri I	Arm Scor	South Africa
Calibre 127 mm		
Carrier: Samil 20 4 x 4		
No. of tubes/rails: 24		
Range 8 - 22 km		
Ammunition types		
HE - 18 kg - prefragmented		
Used by: RSA	Rocket length 2.68 m; weight 53 kg Production has ceased for the benefit of Bateleur	

<http://www.military-today.com/artillery/valkiri.htm>


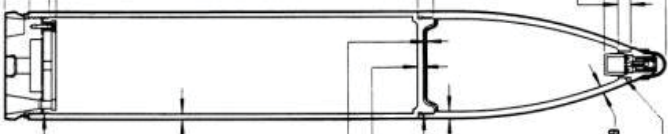
Bateleur	Arm Scor	South Africa
Calibre 127 mm		
Carrier: Samil 100		
No. of tubes/rails: 40		
Range 8 - 36 km		
Ammunition types		
HE - 18 kg - prefragmented		
Used by: RSA	Rocket mass 62 kg; length 2.95 m	


M77 Oganj		Serbia
Calibre 128 mm		
Carrier: FAP-2026		
No. of tubes/rails: 32		
Range 1.5 – 20.6 km		
Ammunition types		
HE		
DPICM		
Used by: BIH, CRO, SER A portable system is also available	Rocket length 2.6 m, Mass 66.8 m, warhead 19.5 m Max velocity 750 m/s	



M63 Plamen	SDPR, Belgrade	Yugoslavia
Calibre: 128 mm		
Carrier: Towed		
No. of tubes/rails: 32		
Range 3 – 8.5 km		
Ammunition types		
HE M85		
HE M87		
		
Used by: BIH, SER, CRO, MAC, SLV, CYP Portable variant: M71 Partizan	M63: length 0.814 m, rocket mass 23 kg, warhead 8 kg M87: length 0.96 m; rocket mass 25.5 kg, warhead 9.4 kg Max velocity 444 m/s, Spin stabilized system	


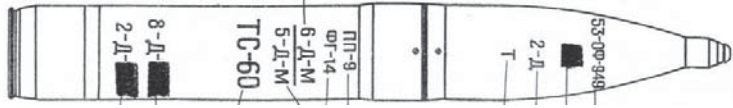
Type 82		PR China
Calibre: 130 mm		
Carrier: 6 x 6 truck		
No. of tubes/rails: 30		
Range - 10.1 km		
Ammunition types		
HE		
Enh. frag (2600 frags.)		
		
Used by: PRC, BAN	Spin stabilized rocket Rocket mass 32 kg; warhead 3 kg, length ~1 m Improved Type 63 system	



sinodefence



LOV RAK 24/128	RH ALAN	Croatia
Calibre: 130 mm (128 mm)		
Carrier: LOV APC		
No. of tubes/rails: 24		
Range: - 8.55 km		
Ammunition types		
HE M91		
HE M93		
		
Used by: CRO	Same rocket as for M85 Plamen M91 mass 23.2 kg, warhead 8.5 kg, fuel 4.5 kg M93 mass 26.0 kg, warhead 9.0 kg, fuel 7.5 kg M93 has 13 km range. Spin stabilized	



Kooyong	Daewoo Heavy Ind	Rep. Korea
Calibre 130 mm		
Carrier: KM809A1		
No. of tubes/rails: 36		
Range 10 – 32 km		
Ammunition types		
Mk 1 – 54 kg		
Mk 2 – 64 kg		
Used by: SKO	Remarks: Warhead weight 21 kg with 6.5 kg HE	


BM-13-16		SOV
Calibre: 132 mm		
Carrier: ZIL-151		
No. of tubes/rails: 16		
Range - 9.0 km		
Ammunition types		
HE		
		
Used by: CMB, EGY, SML, TLB, VIE	Rocket mass 93 kg; warhead 43 kg	



BM-14-16/17	Soviet Union	
Calibre: 140 mm		
Carrier: GAZ-63		
No. of tubes/rails: 16/17		
Range - 10.6 km		
Ammunition types		
HE (FG-14)		
Smoke		
Incendary		
		
Used by: ALG, CMB, CON, CUB, INA, KAZ, SML, TLB, VIE, YEM	Rocket length 1051 mm; mass 40.3 kg Warhead 7.65 kg, explosive 4.2 kg Velocity at launch 27 – 40 m/s; at burnout 400 m/s	

Teruel	Santa Barbara	Spain
Calibre 140 mm		
Carrier: Pegaso 3055 6x6		
No. of tubes/rails: 40		
Range 6 – 18/28 km		
Ammunition types		
HE		
Cargo – 42 ESPIN bomblets		
Cargo – 24 DPICM		
Cargo – 6 AT mines		
Smoke – 14 grenades		
		
Used by: SPA, GAB (Spain to replace by HIMARS)	Remarks: Two rocket versions – a standard 18 km range and an extended range 28 km	


VCLC-CAL	Thyssen-Henschel / IMI	Argentina
Calibre: 160 mm		
Carrier:		
No. of tubes/rails: 36		
Range 12 – 35 km		
Ammunition types		
HE		
		
Used by: ARG	No concrete information on the rocket, but probably the same as the Israeli 160 mm	


LAR-160	IMI	Israel
Calibre 160 mm		
Carrier: Various		
No. of tubes/rails: 36		
Range 12 – 34 km		
Ammunition types		
LAR Mk I		
LAR Mk II		
LAR Cargo		
ACCULAR Mk I		
ACCULAR Mk II		
ACCULAR Mk IV		
Used by: ISL, GEO, VEN	Remarks: LAR Mk II weighs 110 kg with 46 kg WH, length 3.31 m, burnout velocity is 1022 m/s. Cargo WH carries 104 M85 ACCULAR has a TCS in nose.	

LAROM LAR-160	Aerostar	Israel
Calibre: 160 mm		
Carrier:		
No. of tubes/rails: 28		
Range - 45km		
Ammunition types		
HE/Frag		
DPICM		
Used by: ROM	Joint development with IMI, Israel Rocket length 3.3 m, Weight 110 kg Warhead 46 kg (MKII)	

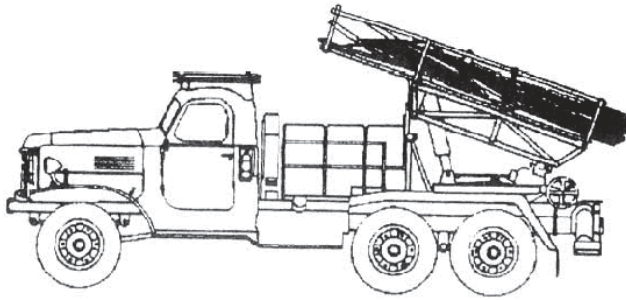

Rayo	FAMAE,	Chile
Calibre 160 mm		
Carrier: MAN SX2000		
No. of tubes/rails: 24		
Range - 45 km.		
Ammunition types		
HE 11 kg		
Used by: CHL	 Remarks: Rockets weigh 122.5 kg, length 3.5 m and reaches 1240 m/s after 2 seconds..	


http://www.acapomil.cl/investigacion/boletines/boletin_2000/03_Articulos_Gestion_de_Calidad/03_Art%EDculos_Gesti%F3n_de_calidad_por_medio_de_la_administraci%F3n_de_proyectos_e_ingenier%EDA_de_sistemas.htm


Astros II (SS-40)	Avibrás	Brazil
Calibre 180 mm		
Carrier: Tectran 6x6 AV-LMU		
No. of tubes/rails: 16		
Range 15 – 35 km		
Ammunition types		
HE-1		
DPICM (20 bomblets)		
Mines (AP or AT)		
Anti-tunway		
Used by: BAH, BRA, IRQ, MAY, KSA	<p>Rocket length 4.2 m Weight 152 kg Built in Iraq under licence as Sajil-40 Bomblet are probably 72 mm in diameter</p>	



RT2000 Mk30		Rep. China
Calibre: 180 mm		
Carrier: M977 HEMTT		
No. of tubes/rails: 27		
Range - 30 km		
Ammunition types		
HE		
Cluster		
Used by: ROC	<p>The vehicle can fire while moving.</p>	


<http://www.military-today.com/artillery/rt2000.htm>


BMD-20 (8U33)		Soviet Union
Calibre: 200 mm		
Carrier: ZIS-151		
No. of tubes/rails: 4		
Range - 18.75 km		
Ammunition types		
HE (MD-20F)		
HE (MD-24F)		
		
Used by: ETI, PRK	<p>Rocket weight 194 kg Burn-out velocity 535 – 590 m/s</p>	



Pinaka	Larsen & Toubro / Tata group	India
Calibre 214 mm		
Carrier: Tatra T-815		
No. of tubes/rails: 12		
Range 7 – 45 km		
Ammunition types		
HE		
Incendiary		
Cargo - AT mines		
Cargo - AP mines		
Cargo – DPICM bomblets		
Used by: IND	<p>Rocket weighs 276 kg with around 100 kg explosive. Full load salvo takes 44 s. Rocket length 4.9 m</p>	



TOS-1		Ryssia
Calibre: 220 mm		
Carrier: Tank chassis (T-72)		
No. of tubes/rails: 30 km		
Range: 0.4 – 3.5		
Ammunition types		
FAE (tetranite fuel)		
Used by: RUS	Incendiary warhead with FAE or Thermobaric content	

BM-27 Uragan	Splav	Soviet Union
Calibre: 220 mm		
Carrier:		
No. of tubes/rails:		
Range		
Ammunition types		
Varied ammo available		
See section H.x		
		
Used by: AFG, BLR, GUI, KAZ, MOL, RUS, TLB, TRM, UKR, UZB, YEM	Se special section H-2	

MLRS	Vought Corp.	USA
Calibre: 227 mm		
Carrier: M270 tracked veh.		
No. of tubes/rails: 12		
Range 7 - 32/40 km		
Ammunition types		
M26 (644 M77 DPICM)		
M26A1 (518 M77 DPICM)		
M26A2 (518 M85 DPICM)		
M30 (404 M101 DPICM)		
AT2 (28 AT2 mines)		
Used by: BAH, DEN, EGY, FRA, GER, ISL, ITA, JAP, NOR, ROK, TUR, UAE, UK, US	See appendix H-3 Tubes have 240 mm inner diameter	

MLRS		USA
Calibre: 227 mm		
Carrier: HIMARS		
No. of tubes/rails:6		
Range - 32 – 60 km		
Ammunition types		
M26 (644 M77 DPICM)		
M26A1 (518 M77 DPICM)		
M26A2 (518 M85 DPICM)		
M30 (404 M101 DPICM)		
AT2 (28 AT2 mines)		
M26 (644 M77 DPICM)		
Used by: SIN, UAE, US	Tubes have 240 mm inner diameter Further described in section H-3	


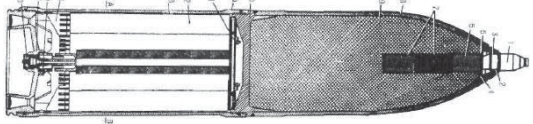
TOROS 230A	MKEK / SAGE	Turkey
Calibre: 230 mm		
Carrier: Various trucks		
No. of tubes/rails: 6		
Range 10 - 65 km		
Ammunition types		
HE/Frag		
		
Used by: TUR	Rocket mass 326 kg, warhead 120 kg Rocker length 4.1 m 4 WAFs	


Oghab	Parchin Missile Ind./AOI	Iran
Calibre: 230 mm		
Carrier: 6 x 6 truck		
No. of tubes/rails: 4		
Range - 34 km		
Ammunition types		
HE/Frag		
		
Long range version 45 km		
Used by: IRN	Max. velocity 750 m/s. Rocket length 4.82 m. Rocket mass 360 kg, 70 kg warhead, 128 kg propellant	

JAH



RT2000 Mk45	Rep. China
Calibre: 230 mm	
Carrier: M977 HEMTT	
No. of tubes/rails: 12	
Range - 45 km	
Ammunition types	
HE	
Cluster	
Used by: ROC (status uncertain)	The vehicle can fire while moving

<http://www.military-today.com/artillery/rt2000.htm>

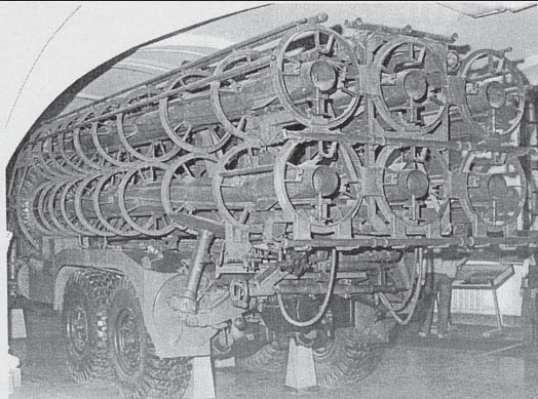
BM-24	Soviet Union
Calibre: 240 mm	
Carrier: ZIL-151/157	
No. of tubes/rails: 12	
Range - 10.2	
Ammunition types	
HE	
Smoke	
Chemical	
	
Used by: AFG, ALG, EGY, HEZ, ISL, SML, YEM	Warhead weight 60.8 kg; explosive 27.4 kg Rocket length 1124 mm; mass 112 kg

Fajr-3	Parchin Missile Ind./AOI	Iran
Calibre: 240 mm		
Carrier: MB 6 x 6		
No. of tubes/rails:12		
Range: 17 - 43 km		
Ammunition types		
HE/Frag		
Smoke		
Inc		
Chemical		
Used by: IRN, HEZ Believed to be equiv to north Koren M1985 and M1991	Rocket mass 407 kg; warhead 90 kg, explosive 42 kg Rocket length 5.2 m. 3 WAFs	

JAH, JAA, Shafir


Falaq-1	Aerospace Industries Organization	Iran		
Calibre: 240 mm				
Carrier:4 x 4 light jeep				
No. of tubes/rails: 4				
Range - 10.8 km				
Ammunition types				
				
Used by: IRN	Rocket length 1,32 m. Rocket mass 111 kg Warhead mass 50 kg The rocket is right spin stabilized with 16 nozzles A single launch tube be mounted on a tripod			


JAH, Cordesman[53]



Korshun 3P7 / BM-25		Soviet Union
Calibre: 250 mm		
Carrier: KrAZ-214 6x6		
No. of tubes/rails: 6		
Range - 55 km		
Ammunition types		
HE		
Used by: YEM (may now be phased out)	<p>The motor is supposed to be liquid based Rocket mass 375 kg, wahead 100 kg. Rocket length 5535 mm Burn time 7,8 s. Max. velocity 1002 m/s</p>	


Öst


The term BM-25 is also a tactical rocket system (North Korean), but is not related to 3P7


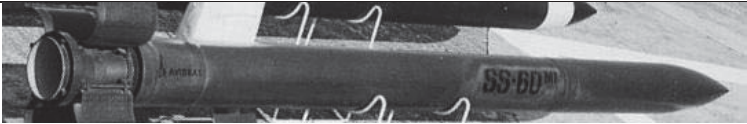
TOROS 260A	MKEK / SAGE	Turkey
Calibre: 260 mm		
Carrier: Various trucks		
No. of tubes/rails: 4		
Range 15 - 100 km		
Ammunition types		
HE/Frag		
Used by: TUR	<p>Rocket mass 410 kg, warhead 145 kg Rocker length 4.8 m 4 WAFs</p>	

M87 Orkan (R-262)		Serbia
Calibre 262 mm		
Carrier: FAP 2832 and others		
No. of tubes/rails: 12		
Range: 5 - 50 km		
Ammunition types		
Cargo – 288 DPICM bomblets		
Mines – 24 AT mines		
Used by: SER; BIH, CRO. System was developed jointly with Iraq, where it was known as Ababil-50	Remarks: Bomblet contain 420 spherical fragments. Rocket mass 390 kg, (mine-rocket 382 kg) Booster 10 kg, sustainer 130 kg (burns for 5 s) Burnout velocity 1200 m/s 3-step aerodynamic brake	

Type 83	Norinco	PR China
Calibre: 273 mm		
Carrier: Type 60-1 tracked		
No. of tubes/rails: 4		
Range 23 - 40 km		
Ammunition types		
HE/Frag		
80 km version available		
Used by: PRC, Iran produces its own variant called Oghab	 <p>Source: U.S. Naval EOD Technology Division</p>	<p>Rocket length 4.753 m Launch velocity 39 m/s; burnout velocity 810.5 m/s Rocket mass 484 kg</p>


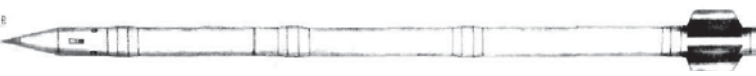
WM-80	Norinco	PR China
Calibre: 273 mm		
Carrier: TA-580 8 x 8 truck		
No. of tubes/rails:8		
Range 34 - 80 km		
Ammunition types		
HE/Frag		
Cargo (380 DPICM)		
Used by: PRC	<p>Launch velocity 40 m/s, burnout velocity 1140 m/s, apogee 31 km. Rocket length 4.582 m</p> <p>Rocket mass 505 kg, propellant 205.5 kg, warhead 150 kg, explosive 34 kg</p>	


MAR-290	IMI	Israel
Calibre 290 mm		
Carrier: Centurion/Sherman		
No. of tubes/rails: 4		
Range - 40 km		
Ammunition types		
Used by: ISL Status uncertain)	<p>Remarks: The rocket is launched from a rail with both rail and rocket inside a tube due to the fixed fins arrangement.</p>	

Astros II (SS-60/SS-80)	Avibrás	Brazil
Calibre 300 mm		
Carrier: Tectran 6x6 AV-LMU		
No. of tubes/rails: 4		
Range 20 – 80 km		
Ammunition types		
DPICM (65) 212 kg		
Mines (AP or AT)		
HE-I		
Anti-runway		
		
Used by: BAH, BRA, IRQ, MAY, QAT, KSA	.Built in Iraq under licence as Sajil-60 SS-80 has a range of 22 – 90 km Rocket length 5.6 m Weight 595 kg Bomblet is 390 mm long 130 mm in diameter	

JAH/JAA


<http://www.army-technology.com/projects/astros/specs.html>

BM-30 Smerch	Splav	Soviet Union		
Calibre: 300 mm				
Carrier:				
No. of tubes/rails: 12				
Range 20 – 70 km				
Ammunition types				
Various				
See section H.x				
				
Used by: ALG, AZB, BLR, IND, KUW, RUS, TRM, UAE, UKR	See special section H-4			


A-100	Norinco	PR China
Calibre: 300 mm		
Carrier: WS-2400		
No. of tubes/rails:10		
Range: 20 – (50-100)		
Ammunition types		
Frag-bomblets		
Mines		
HE/frag		
FAE		
DPICM		
Used by: PRC, PAK		

sinodefemce


<http://trishulgroup.blogspot.com/2008/09/pakistan-army-upgrades-its-field.html>

T-300 Kasirga	Roketsan	Turkey
Calibre: 302 mm		
Carrier: MAN 6 x 6		
No. of tubes/rails: 4		
Range 20 - 100 km		
Ammunition types		
HE/Prefrag		
Cluster		
Used by: TUR Turkish version the Chinese WS-1	Rocket length 4.7 m; weight 524 kg Warhead 150 kg	



Asian Defence


WS-1		PR China
Calibre: 302 mm		
Carrier: 6 x 6 or 8 x 8 truck		
No. of tubes/rails: 4		
Range: 40 -100 km		
Ammunition types		
Various		
Used by: PRC	Rocket length 4.737 m; mass 524 kg; warhead 150 kg Burnout velocity: 1250 m/s Accuracy 1 – 1.25%	



Sinodefence, Shapir

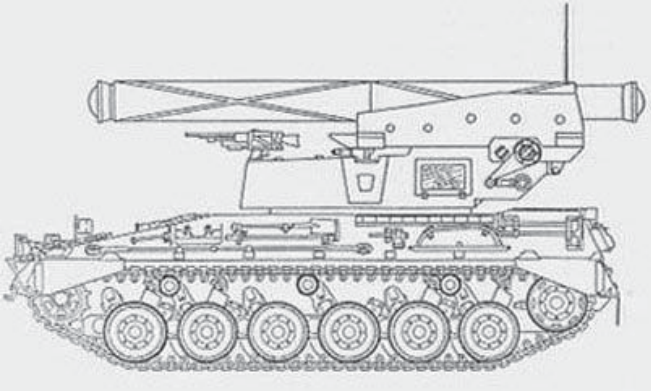
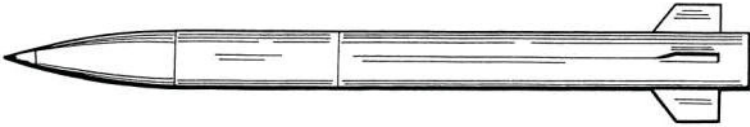
WS-1B		PR China
Calibre: 302 mm		
Carrier: Various trucks		
No. of tubes/rails: 4 - 8		
Range: 60 -180 km		
Ammunition types		
Various		
Used by:	Rocket length 6.376 m; mass 725 kg; warhead 150 kg Burnout velocity: 1750 m/s Accuracy 1 – 1.25%	


Sinodefence


Falaq-2	Shahid Bagheri Ind /AOI	Iran
Calibre: 333 mm		
Carrier: 4 x 4 jeep		
No. of tubes/rails:1		
Range - 11 km		
Ammunition types		
HE		
		
Used by: IRN, HEZ	Rocket mass 255 kg; warhead 120 kg, explosive 60 kg Rocket length 1.82 m. Max altitude 3200 m Right spin-stabilized with 8 nozzles	

Shahin II	AOI	Iran
Calibre: 333 mm		
Carrier:		
No. of tubes/rails:		
Range - 20 km		
Ammunition types		
HE		
		
Used by: IRN, HEZ Also called Fadjr-4	Rocket mass 384/530 kg, Warhead mass 190 kg, length 2.90 (Shahin I), 3.90 m (Shahin II) Picture above is Shahin II, Shahin I is shorter with 13 km range	

Fajr-5	Aerospace Industries Organization	Iran
Calibre: 333 mm		
Carrier: 6 x 6 truck		
No. of tubes/rails: 4		
Range: - 75 km		
Ammunition types		
HE/Frag		
		
Used by: IRN, HEZ	Rocket length 6.485 m Rocket mass 915 kg Propellant 175 kg, warhead 90 kg	

MAR-350	IMI	Israel
Calibre: 350 mm		
Carrier: Tank chassis		
No. of tubes/rails: 2		
Range 40 - 80 km		
Ammunition types		
HE/Frag		
Cargo (770 Bantam bomblets)		
		
TCS rocket available		
Used by: ROM, ISL (status is uncertain)	Rocket mass 835 kg, propellant 320 kg, warhead 334 kg Rocket length 5 m Launch velocity 40 m/s; burnout velocity 1200 m/s; burn time 3.3 s; apogee 28 km; thrust 235 kN	


Nazeat	AIO	Iran
Calibre 356 mm		
Carrier: MB 2624 6 x 6		
No. of tubes/rails:		
Range - 120 km		
Ammunition types		
Used by: IRN	Different version N4, N5, N6 Max velocity 1800 m/s	

WS-2		PR China
Calibre: 400 mm		
Carrier:		
No. of tubes/rails: 6		
Range 70 – 200 km		
Ammunition types		
Used by: PRC	Rocket length 7.3 m; mass 1285 kg, warhead 200 kg Primitive INS guidance with accuracy 0.17%	


Sinodefence


Luna-M (NATO:FROG-7B)	BAZ	Soviet Union
Calibre: 544 mm		
Carrier: ZIL-135 LM		
No. of tubes/rails: 1		
Range: 15 – 65 km		
Ammunition types		
9M21B (nuc)		
9M21F (HE)		
9M21E (42 9N18 bomblets)		
9M21Kh (chem. bomblets)		
		
Used by: BLR, BIH, CUB, EGY, HUN, NKO, LEB, ROM, RUS, SLV, SYR, UKR, YEM	Warhead weight 420 – 57 kg, Rocket length 8.95 – 9.4 m Rocket weight 2.5 tons	

<http://www.rwd-mb3.de/pages/9m21.htm>

9P129 Tochka OTR-21, (NATO: SS-21 Scarab)	KBM, Kolomna	Russia
Calibre: 650 mm		
Carrier: BAZ-5921		
No. of tubes/rails:		
Range: 20 – 120 km		
Ammunition types		
9M79F (HE)		
9M79K (50 9N123K bomblets)		
9M79B (Nuc.)		
Used by: AZE, BLR, BUL, POL, RUS, UKR, SYR, YEM	Rocket length 6.4m, weight 2.0 tons, warhead 482 kg Max. velocity 1800 m/s INS guidance	

<http://www.rwd-mb3.de/pages/9m79.htm>

MGM-140 ATACMS	Northrop - Grumman	USA
Calibre : 607 mm		
Carrier: M270		
No. of tubes/rails:2		
Range - 140+ km		
Ammunition types		
M39 (950 M74 bomblets)		
Used by: BAH, GRE, ROK, UAE, US,	Rocket length 3.978 m; mass 1495 kg Warhead 500 kg;	

Zelzal-2	AIO	Iran
Calibre : 610 mm		
Carrier: MB truck		
No. of tubes/rails:1		
Range - 210 km		
Ammunition types		
HE		
Used by: IRN	Rocket length 8.325 m; mass 3400 kg Warhead 600 kg; propellant 1840 kg Isp 235 s PPG fuel Accuracy 5%	

Iskander (NATO: SS-26 Stone)	KBM, Kolomna	Russia
Calibre 950 mm		
Carrier: MAZ-79306 8 x 8		
No. of tubes/rails:2		
Range. 50 – 500 km*		
Ammunition types		
HE		
Cluster (54 bomblets)		
Others		
		
Used by: RUS	Rocket weight 3800 kg, length 7.2 m Burnout velocity 2100 m/s, warhead 480 kg Guided – accuracy < 10 m	

Range is 280 km for Iskander-E (export version)

H.1 122 mm systems

H.1.1 BM-21

122 mm constitute are by far the most proliferated systems of rocket artillery. The classical type is the Russian (Soviet) BM-21 Grad which was developed in the mid 1950s. This system has been exported into many countries of which several have modified and improved the system into their own independent product.

BM-21 was used for the first time in combat during the brief Soviet-Chinese conflict on the Damanskiy Island on the Ussuri river in March 1969.

This BM-21 system has been developed along several avenues and is currently in used in dozens of countries. A somewhat obsolete feature of the system is that it has to be reloaded manually and with one rocket at a time. A process that with a well trained crew takes 10 – 15 seconds per tube.

When fired at a range of around 14 km, BM-21 rockets are supposed to have an accuracy (probable error) of 100 m in range and 80 m in deflection [33]. It is believed that only random errors are included in this budget.

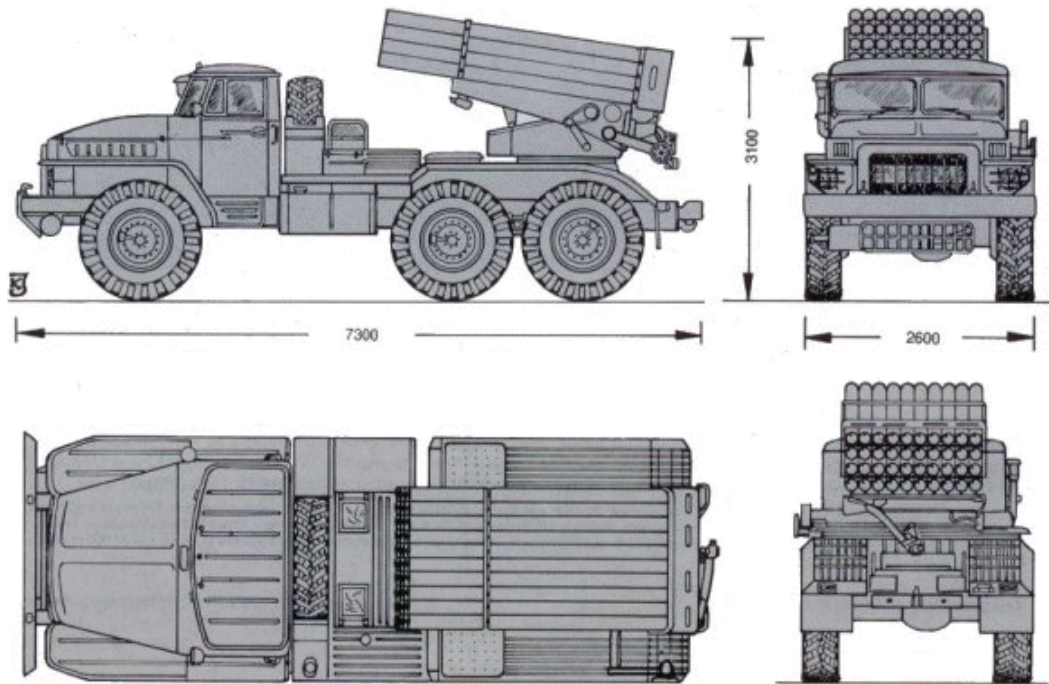


Figure H.1 BM-21 – the most proliferated artillery rocket system

The most known types are

- BM-21 – the original type – had 40 launch tubes (4 rows with 10 each) and was carried by an Ural-375D 6 wheeled truck. As with other truck carried version the rockets could be fired selectively or by a complete salvo.
- BM-21V (Grad-V) has 12 tubes (2 rows with 6 each) carried by a Gaz-66B 4 wheeled light truck providing better terrain mobility than the original one. It was intended to be used by air deployed units.
- BM-21B (Grad-1/9P138) has 36 tubes arranged in the same way as on the original one but two tubes in the middle of the two lower rows has been removed. It is carried by a Zil-131 6 wheeled truck. Only rockets with high explosive warhead and with reduced range can be used.
- BM-21-1 is similar to the original version but is mounted on a more modern Ural 4320 truck. It was developed in the late 1980s
- BM-21 P (Partizan) was originally developed for Speznaz or special forces. It is a single tube system consisting of a bipod, a tube and a shortened version of the rocket weighing 46 kg. The total weight of the system including one rocket is around 75 kg. The rocket can be disassembled into two parts for the purpose of portability. This system has become popular in some non-state forces like Hezbollah. This system can not fire the standard 3 meter long BM-21 rockets.
- Prima (9A51) is the latest development taking place in the early 1990s. It uses the same vehicle as BM-21-1. The launcher has 50 tubes. The complete system also includes a reloading vehicle.

- Romania once showed a single tube version consisting of a tube, an aiming device and a tripod. Including one rocket the weight was supposed to be 105 kg. The range of the rocket was limited to 13.4 km probably due to the limited elevation at launch.
- RM-70 is a modernized version of the original system made in the early 1970 by Czechoslovakia. It is carried by a Tatra 813 8-wheeled vehicle. The improvement consisted of crew fragment protection a devices to speed up the reloading process
- RM70/85 was also developed in Czechoslovakia. It is quite similar to the previous version but uses a Tatra T815 vehicle. The emphasize to put more on CBRN-protection than on fragment protection

Ammunition for BM-21

Type	Length (m)	Weight (kg)	Min range (km)	Max. range (km)	Content	Remarks
9M22	2.87	66		20.75	HE/Frag	700 m/s
9M22U	3.226	66.35	1.5	20.38	HE/Frag	18.4 kg WH
9M22M	1.913	45.7	3	10.8	HE/Frag	Portable
9M22S					Incendiary	
9M23					Frag/Chem	2.3 kg agent
9M28D					Leaflets	
9M28F	1.93	56.5	1.4	13.4	HE/Frag	450/585 m/s 21 kg WH
9M53F	3.037	70	5	33	HE/Frag/p	
9M43	2.949	66	5	20.2	Smoke	5 elements w/0.8 kg RP
9M42	~1.5	27	1	5	Illumination	1.5 min
9M28K	3.019	57.7	4	13.4	AT mines	3 PTM-3
3M16	3.019	56.4	4	13.4	AP mines	5 POM-2
9M21	2.87	66	5	20.4	Chemical	
9M519	3.025	66	4.5	18.5	Jammer (9 types)	18.5 kg
9M521	2.84	66		40	HE/Frag	
9M522	3.037	70		37.5	HE/Frag	Parachute descent
9M217	3.037	70		33	2 SFW	
9M218	3.037	70		30	DPICM	45 KOBE
9M22S		66.6				9N510

Table H.1 Russian 122 mm ammunition

The BM-21 was produced by the Russian company NII-147 in Tula. This company was later renamed Splav.

H.1.2 Chinese variants

People's Republic of China has several quite modern versions of 122 mm systems. Beside the classical Soviet made BM-21 they also have the track vehicle carried Type-89, the wheeled carried Type 90 which both are from the 1980. An even newer version of the WS-6, as new 40 barrel on a truck is produced by The Sichuan Aerospace Industry Corporation (SCAIC) and has recently gone into production. (JAH). It is not what the difference between WS-6 and WS-1E is.

Warhead	Length (m)	Total weight (kg)	Warhead weight (kg)	Max. range (km)	Min. range (km)
He/Frag	2.87	67	18.3	20	9.6
Enhanced fragmentation	2.87	67	18.3	20	9.6
Enhanced fragmentation	2.87	67	18.3	20	12
Cluster (39 bomblets)	3.037	66	18.3	20	9.6
Cluster (74 bomblets)	2.87	68	28	26	13
He/Frag	2.757	61	18.3	33	12.7
Enhanced fragmentation	2.757	61	18.3	33	12.4
Cluster (13 bomblets)	2.927	61	18.3	32	15
Enhanced fragmentation	2.9	67	22	40	20
Cluster (44 bomblets)	3.008	67	22	40	20
Cluster (6 AT mines)	2.95	58	26	15	6
Cluster (8AT mines)	2.83	63	33	7	-
Cluster (128 AP mines)	2.83	63	33	7	-

<http://rbase.new-factoria.ru/search/index7.htm> and JAH

Table H.2 Chinese types of ammunition for 122 mm rockets (The cluster warhead with 39 or 44 bomblets probably contain MZD-2 bomblets; the 74 bomblets warhead must have smaller bomblets). The enhanced fragmentation warheads have metal spheres in the casing

H.1.3 Turkish variants

The Turkish variant of 122 mm is produced by the company Roketsan. It seems likely that Turkey has got a lot of their MRL technology from PR China. Many similarities are found for 122 mm systems and for higher calibre types.

Warhead	Length (m)	Total weight (kg)	Warhead weight (kg)	Max. range (km)	Min. range (km)	Fuze
TR-122 HE	2.93	65.9	18.4	40	10	PDet
TRB-122 HE/Frag	2.93	65.9	18.4	40	10	Prox
TRK-122 Cluster (see text below)	3.24	71.6	22.9	30	16	Time
SR-122 HE	2.9	66.6	18.4	20	3	PDet
SRB-122 HE/Frag	2.9	67.1	18.4	20	3	Pros
Cluster (128 AP mines)	-	-	-	-	-	

<http://www.new-factoria.ru/missile/wobb/t122/t122.shtml>

Table H.3 Turkish variant of 122 mm ammunition. The cluster warhead contains 50 DPICM and 6 incendiary bomblets each weighing 280 g with hexogene content



Figure H.2 Chinese warheads for 122 mm. From above: HE with enhanced fragmentation effect (metal spheres); ordinary HE, and DPICM warhead. (<http://rbase.new-factoria.ru/search/index7.htm>)

Other countries producing equivalent ammunition for 122 mm rockets are shown in the table below.

Country	Manufacturer	Rocket/system name	Note
Belarus		BelGrad	
Bulgaria	Vazov Eng.	M-21 OF	
China	Norinco Sichuan AIC	Type 81 Type 83 (tracked) Type 83 (wheeled) Type 89 Type 90A WS-6	4 types of ammo
Croatia	R H ALAN	M93	M-21 OF copy
Czech Republic		RM-70 RM-70/85	
Egypt	Heliopolis Helwan	Saqr copies Saqr-10 (short 46 kg) Saqr-18 Saqr-36 PR-111 PR-113	Cargo WH Smoke D-6000
India	ARDE, Pune	LRAR	9M22 copy
Iran	AMIG	Arash Noor Arash (long range) Fadjr 6	9M22 copy Single tube version Enlarges motor Mines payload
Italy	Simmel	Firos 25 Firos 30	7 types for each (HE, TP, WP, prefragmentes, AT mines, AP mines and DPICM)
North Korea	State factories	BM-11	9M22 copy
Pakistan	Pak. Ord. Factories A Q Khan Res. Lab.	Yarmuk -	9M22 derivate HE/Frag rocket
Poland	Tlocznia MPSA Presta	Grad Spall Platan	9M22 derivate Airburst AT mines M21 HE/Frag M21-OF HE/FRag AT mines
Romania		APR-21	
Serbia	Yugoimport-SDPR	M88	9M22 derivate
Slovakia	Technopol	AGAT/JRKK-G LR (long range) Trnovik	DPICM bomblets Aircraft mounted DPICM bomblets

Country	Manufacturer	Rocket/system name	Note
	Synthesia ZVS Holding	EXP-122 JROF JROF-K	9M22 derivate 9M22 derivate Shortened rocket
South Africa	Mechem	RO 122 68 mm subcalibre	Prefragmented Training
Turkey	Roketsan	T-122	Long range version
Ukraine		BM-21/KraZ chassis	

H.1.4 Other variants

It is known that North-Korea, Belarus, former Yugoslavia, Czech Republic, Iran, Egypt have produced their own variants of BM-21

H.2 220 mm systems (BM-27 Uragan)

The 9P140 Uragan (previously referred to incorrectly as BM-22 or BM-27) is the world's first modern fin and spin-stabilized heavy rocket system. Essentially a scaled-up version of the BM-21, the 9P140 use many of the same design features. The launcher, the 9T452 transloader, the rockets, and support equipment constitute the 9K57 complex.

The 9P140 and its transloader are both based on variants of the gasoline-powered ZIL-135LM 8-ton 8x8 chassis. The truck is unusual in that it uses two engines, each driving the wheels on one side of the truck, and only the front and rear axles steer. The 9P140 cab has a blast shield that is raised during firing, and the vehicle is stabilized during firing by two manually emplaced hydraulic jacks at the rear of the chassis.

The launcher has electrically powered traversing and elevating mechanisms. During travel, the launcher assembly is oriented rearward and a light sheet metal cover over the muzzle end of the tubes prevents foreign material from entering the tube. This is a safety feature that is designed for travel when loaded. There is no such cover for the muzzle end of an unloaded launcher.

The rockets have a maximum velocity of 700 – 800 m/s. The motor is said to burn for 3.18 s, but the maximum thrust of 58 kN is probably reached at 15 – 2.0 seconds after start.

The ammunition used for Uragan is shown in the table below. Less is known about Uragan than the other Russian systems

Type	Length (m)	Weight (kg)	Min range (km)	Max. range (km)	Content	Warhead
9M27F	4.832	280.4	10	35	99 kg HE	9N128 F
9M27K	5.178	271	8.5	34	30 ICM	9N210
9M27K1		270			Cargo	9N128K1
9M27K2		270			AT mines	9N128K2
9M27K3		270			AP mines	9N128K3
9M51		256			FAE	9N515
9M59	5.178	270	10	35	AT mines	9 POM-2
9M27S					Incendiary	9N128S
9M27?					Chemical	
9M27D					Leaflets	
9F839					Air target	
9F689					n/a	
unknown				35	SFW	

H.3 The MLRS system

In the West, rocket artillery systems were never given a major role in the armies until the mid 1980s. NATO armies shortly tried systems like Honest John in the 50s and 60s, but their role was quite short-lived. One of the main drawbacks of the Honest John system was its lack of accuracy. It simply could not be used if the wind in the launch area exceeded a certain level, as a strong wind during the boost phase would result in a very unpredictable hit point.

This situation changed in the 1980, when the defensive NATO doctrine shifted towards increased emphasize on the defeat of second echelon forces. This strategy was especially expressed by the SACEUR, general Bernhard Rogers. The MLRS (Multiple Launch Rocket System), which had been planned since the early 1970[51] got a pivot role in this strategy.

The MLRS was, with the possible exception of the German LARS (Light Army Rocket System) the first NATO MRL in earnest and with a capacity to deliver a wide variety of warheads.

The first combat test of MLRS took place during the Gulf War (Operation Desert Storm) in Kuwait in 1991. There is hardly any doubt that MLRS made a devastating effect on enemy forces, but the conflict lasted too short to be called a comprehensive test of the systems. In the aftermath the problems of the dud from the ammunition left in Kuwait was said to create more casualties among EOD forces than among enemy soldiers.

After the Gulf War there were many plans to develop a number of alternative warheads for MLRS in addition to the cluster warhead and the anti-tank mine warheads developed so far. The development plans included

- Sensor Fuzed Warheads (SFW)
- Terminally Guided Warheads (TGW)
- BAT (Brilliant Anti-Tank submunitions)
- cluster warheads with improved bomblets
- Unitary warheads
- Guided rockets

Programs for guided versions of MLRS have been conducted in Israel, USA, Switzerland, Germany and Taiwan. Only Israel and USA are known to have a guided system in operation. That system is based on radio frequency ground tracking and is supposed to have an accuracy of 70 – 120 m. The other programs were supposed to give an accuracy of 50 m based in GPS and INS technology. [54]

The first three of these programs were terminated in the late 1990 with reaching the beyond the prototype level. However, the last three have been completed.

The current MLRS ammunition currently includes the following rockets

Rocket	Warhead	Submunition	Calibre	Range
M26	Cargo	644 M77	227 mm	31.5 km
M26A1	Cargo	518 M77	227 mm	45 km
M26A2	Cargo	518 M85	227 mm	45 km
AT-2	AT mines	28 AT-2	237 mm	37.5 km
M28A1	Training		227 mm	14.3 km
FZ204	Training	-	70 mm	9.05 km
M30 (guided)	DPICM	404 M101	227 mm	70 km
M31 (guided)	Unitary	82 kg warhead	227 mm	85 km

Source [55]

As an example, the following table shows the sequence of events for the M26 MLRS rocket from ignition to ground impact

Time	Event
-17 ms	Igniter squib fired by FCS
0	Shear bolts break (first motion)
12 ms	Forward tube cover impact
13 ms	Fin restraint delay device initiated (500 ms delay)
25 ms	External umbilical connector separation
85 ms	Sabot separation (free flight)
130 ms	Nozzle exits tube
250 ms	Fuze timer active
513 ms	Fin restraint device release
535	Fins deployed and locked
1000 ms	Fuze mechanical arming
1500 ms	Motor web burn-out
7300 ms	Complete burn-out
WHE - 3400 ms	Fuze electrical arming
WHE	Warhead event – payload ejection
WHE + ~15 s	Payload ground impact

H.3.1 610 mm ATACMS

ATACMS (Army Tactical Missile System) is the American counterpart to the Russian FROG and other tactical missiles. It uses the same M270 launcher as MLRS and can be considered as a MLRS-munition. The rockets have a calibre of 610 mm and are fired from a pod that externally is the same as the ordinary MLRS pod. Instead of 6 rockets, the ATACMS pod contains a single rocket. The rocket is guided.

Currently, three different types of rockets are on the market as shown below

Rocket	Warhead	Submunition	Calibre	Range
Block I	Cargo	970 M73	610 mm	
Block IA	Cargo	M73	610 mm	
Unitary	HE	-	610 mm	

H.4 300 mm systems (Smerch)

This is the largest and most complex of the Russian systems, and is superior to the other systems in terms of range, size and accuracy.

The system, called 9A52 or 9A52-2, is placed on an MAZ 8 x 8 wheeled special vehicle weighing 44 tons. There are two sets of ammunition available. The original set had a range of 70 km, while the new set has a range of 90 km. The minimum range is 20 – 25 km. The vehicle has 12 tubes that can be elevated up to 55°. The rockets have a weight of 800 – 815 kg, of which 240 kg constitutes the warhead. The rocket is believed to reach a velocity of 1030 m/s after around 3 seconds of flight.

At 90 km, a guided rocket is a prerequisite. At the Smerch this is implemented as small nozzles at each side of the tip of the rocket. The principle for guidance is not known, but it is probably an inertial systems. The accuracy is claimed to be 0.21%, which translates to 190 m at 90 km range. This is considerably better than unguided systems.

The Chinese A-100 systems are probably built with Smerch as a model.

The table below shows the ammunitions available for this system

Type	Weight(kg)	Content	
9M55F	820	He/Frag	1100 frags 50 g ea
9M55K	800	ICM	72 9N235
9M55K1	800	SFW	5 Motiv-3M
9M55K3	800	AP mines	64 POM-2
9M55K4	800	AT mines	24 PTM-3
9M55K5	800	DPICM	646 or 588 (2 var)
9M55K6	800	SFW	5 9N268
9M55K7	800	SFW	20 SPBE
9M55S	800	TBX	100 kg HE
9M525	815	ICM	72 9N235 (8 9N139 subcontainers)
9M526	815	SFW	5 Motiv-3M
9M527	815	AT mines	25 PTM-3
9M528	815	HE/Frag	800 frags 5 g ea
9M529	815	TBX	100 kg HE
9M530	815	AS*	75 kg HE
9M531	815	DPICM	646 or 588 (2 var)
9M532	815	SFW	20 9N282
9M533	815	SFW	5 9N268
9M534	815	Drone	“Kipchak”
9M536	815	ICM	20 POBE
9M537	815	ICM	32 OBE NP

AS – anti structural (penetrator)

Submunition used in Smerch

Type	Name	Mass (kg)	Length (mm)	Diam.(mm)	HE mass (kg)	SD* time	Remarks
ICM	9N235	1.75	263	69	0.32	110 s	
ICM	POBE	2	800	40	0.6		70 mm steel pen.
ICM	OBE NP	4.5	215	114	0.9		
DPICM	KOBE	0.24	118/128	43	0.35/0.46	130 – 260 s	120 mm steel pen.
SFW	Motiv-3M	15		185	4.5		70 mm steel pen.
SFW	9N282 Gnom	6.7	307.5	114		110 s	70 mm steel pen.
SFW	9N268	17.3	384	185	5.8		70 mm steel pen.
AP mine	POM-2		180	63	0.13	4 – 100 h	
AT mine	PTM-3	4.85	330	84	1.85	16 – 24 h	

*) SD = Self-Destruct device

Cluster munition delivered with Smerch is dispersed over an area of 40 hectares.

Appendix I Distribution of rocket artillery

This list is based on different sources, but mostly on Jane's. However, even different sources from Jane's do not always match. Other sources may deviate substantially. The list below or what seems to be the most probable one. Apart from Jane's, it is mainly based on Wikipedia pages and the home pages of the respective armies.

Country	Systems
Abkhazia	7 BM-21; S-8
Afghanistan	BM-21; 18 BM-27; BM-24
Albania	Type 63
Algeria	50 BM-21; 50 BM-14; 30 BM-24 ¹² ; 18 BM-30
Angola	50 BM-21; 40 RM-70
Argentina	Pampero; VCLC-CAL
Armenia	50 BM-21; 4 WM-80; KRL-122
Azerbaijan	63 BM-21; 3 LAR-160; 2 TR-107; 3 MAR-350; 12 BM-30; 3 OTR-21; Lynx
Bahrain	Astros II; 9 MLRS (incl ATACMS)
Bangladesh	KRL 122 / Type 90B; Type 82
Belarus	208 BM-21; 84 BM-27; 48 BM-30; 36 OTR-21; FROG
Bosnia- Herzegovina	2 BM-21; S-5; M94 Plamen-S; 7 M-77 Oganj; 1 M-87 Orkan; FROG;
Brazil	20 Astros II; SBAT-70; 108-R
Bulgaria	350 BM-21; 18 OTR-21
Burkina Faso	4-6 Type 63
Burundi	10 BM-21
Cambodia	8 BM-21; 10 BM-14; BM-13; Type 63
Central African Rep.	5 BM-21
Chad	5 BM-21
Chile	8 Famae Rayo (LAR-160)
China	WS-1B; Type 63; Type 81; Type 70; Type 90; WS-1A; A-100; Type-82; Type-83/WN-40; Type 85/YW 306; WS-2; (WM-80); 3500 in total
Congo DR	30 Type 63
Congo Rep	6 BM-21; BM-14
Croatia	36 BM-21; 8 M-91 Vulkan; 2 M-95 Tajfun; 68 RAK-12; 4 M87 Orkan; 4 M63 Plamen; M77 Oganj; LOV RAK 24/128
Cuba	250 BM-21; BM-14; FROG
Cyprus	18 BM-21; 24 M63 Plamen

¹² http://www.country-data.com/frd/cs/algeria/dz_appen.html

Country	Systems
Czech Rep	60 RM-70
Denmark	12 MLRS (out of service)
Djibouti	BM-21
Ecuador	6 RM-75; BM-21
Egypt	96 BM-11; 24 BM-13; 215 BM-21; 48 BM-24; PR-113; 120 Saqr-4; 48 Saqr-8; 50 Saqr-10; 72 Sakr-18; 130 Saqr-30; 50 Sakr-36; 48 FROG; 46 MLRS; 60 Saqr-80
Eritrea	25 BM-21
Ethiopia	10 BM-21; BMD-20
Finland	36 Rakh 89 (RM-70/85); Rakh 91; Rakh 07; 22 MLRS
France	55 MLRS
Gabon	8 Teruel, 16 Type 63
Georgia	150 BM-21; 135 RM-70; 15 GRADLAR-160; 12 M63 Plamen
Germany	72 MLRS (MARS)
Greece	116 RM-70; 36 MLRS, ATACMS
Guinea	2 BM-27
Hamas/Fatah	Qassam 1; Qassam-2; Qassam-3; al-Quds; al-Nasser; Saria-2; Kafah; BM-21;
Hizbollah	BM-21; Grad-P; BM-24; Zelzal (B302); Fajr-3; Fajr-5; Thunder 1
Hungary	56 BM-21; FROG (uncertain)
India	150+ BM-21; 38 BM-30; 80 Pinaka
Indonesia	24 BM-14; 9 RM-70; FZ Lau-97
Iran	64 BM-21, Haseb, Arash; Noor; Fajr-2/3/5, Shahin II, Fajr-5/6/7; Hwasong-5; Shahab-1/2/3/4/5/6; M1 2; ML 4; Zelzal-2; WS-1; OSS-8; Nazeat; 20 BM-11; 50 Hadid/Azrash/Nur; 100 Type-63, Type-81; Falaq-1/2; Samid, Oghab, Tondar-69
Iraq	Had a very rich and varied inventory prior to 2003. None seems to be kept in the current forces.
Israel	50 LAR-160; 20 Mar-290; 86 MLRS; 36 BM-24; 58 BM-21
Italy	22 MLRS; Firos 30
Japan	90 MLRS
Jordan	Type 63
Kazakhstan	190 BM-21; 130 BM-27; 220 Type 63; 13 M1985 (BM-21 variant); 80 BM-14
Kenya	35 BM-21
Kuwait	27 BM-30
Kyrgyzstan	21 BM-21
Lebanon	25 BM-21; 5 BM-11; FROG
Libya	400 BM-21; 200 RM-70; 300 Type-63
Macedonia	6 BM-21; 15 M63 Plamen

Country	Systems
Malaysia	36 Astros II
Mali	2 BM-21
Mexico	Firos 6
Moldova	15 BM-27
Morocco	36 BM-21
Mozambique	5 BM-21
Myanmar	30 Type 63; RM-70
Namibia	5 BM-21
Nicaragua	30 BM-21, 33 Type-63 (JAA)
Nigeria	11 BM-21
North Korea	BM-21; BM-11; BMD-20; FROG; Hwasong-5/6, Rodong-1; 2000 in total
Norway	12 MLRS (out of service)
Oman	27 BM-30 (uncertain)
Pakistan	Type 81; 36 A-100; 45 Type 83 (Azer)
Peru	14 BM-21
Poland	219 BM-21; 30 RM-70/85; 4 OTR-21; 6 WR-40
Qatar	4 Astros II
Romania	128 APR-40; 24 LAROM; FROG
Russia	1750 BM-21; 106 BM-30; 675 BM-27; TOS-1; 140 OTR-21; Iskander
Rwanda	5 RM-70 (uncertain)
Saudi Arabia	60 Astros II
Serbia	100 M-63 Plamen; M-77 Oganj; 1 M-87 Orkan; M71; Kosava; 18 M94 Plamen-S (modified M77)
Singapore	18 HIMARS
Slovakia	87 RM-70/85; FROG
Somalia	Light systems (up to 122 mm) are believed to be possessed by non- state-parties
Somaliland (northern Somalia)	74 BM-21; BM-13; BM-14; BM-24
South-Africa	60 Valkiri; Bateleur; RO 68
South Korea	156 Kooryong (K136); 96 MLRS, 29 ATACMS
South Ossetia	BM-21
Spain	14 Teruel
Sri Lanka	BM-21; 24 RM-70
Sudan	22 BM-21; 400 Type 63; WS-2
Syria	280 BM-21; 200 Type 63; 18 OTR-21; FROG
Tadjikistan	10 BM-21
Taiwan	RT-2000; 117 mm KF-VI; 126 mm KF-IV

Country	Systems
Taliban	BM-13; BM-14; BM-21; BM-22 ¹³
Tanzania	50 BM-21
Thailand	60 130 mm Type 82
Turkmenistan	86 BM-21; 54 BM-27; 6 BM-30
Turkey	TOROS-230A; TOROS 260A; 24 MLRS (incl 72 ATACMS); 100+ TR-107; 100+ T-122; 100+ T-300Kasirga (WS1A/B)
UAE	6 MLRS (incl ATACMS); 73 Firs 25; 6 BM-30; 48 BM-21; 20 HIMARS; 18 LAU-97
Uganda	6 RM-70; Type 63
UK	36 MLRS
Ukraine	450 BM-21; 76 BM-27; 100 BM-30; S-5M1; S-8M; 50 Frog; 90 OTR-21
Uruguay	5 RM-70
US	857 MLRS; ATACMS; 60 HIMARS;
Uzbekistan	49 BM-27; 60 BM-21
Venezuela	20 LAR-160
Vietnam	800 BM-21; 500 BM-13; 700 BM-14
Yemen	280 BM-21; 14 BM-14; 35 BM-24; 13 BM-27; 30 BM-13; RM-70; 12 FROG-7; 10 OTR-21
Zambia	30 BM-21
Zimbabwe	60 RM-70/85, 18 Type 63; 25 BM-21

¹³ <http://www.fas.org/terrorism/str/index.html>

Appendix J Country abbreviations

AFG	Afghanistan	GEO	Georgia	POL	Poland
ALB	Albania	GER	Germany	PRC	China
ALG	Algeria	GRE	Greece	PRK	North Korea
ANG	Angola	GUI	Guinea (Conakry)	QAT	Qatar
ARG	Argentina	INA	Indonesia	ROC	Taiwan
ARM	Armenia	IND	India	ROK	South Korea
AUT	Austria	IRN	Iran	ROM	Romania
AZB	Azerbaijan	IRO	Iraq	RSA	South Africa
BAH	Bahrain	ISL	Israel	RUS	Russia
BDE	Bangladesh	ITA	Italy	RWA	Rwanda
BEL	Belgium	JAP	Japan	SER	Serbia
BIH	Bosnia – Herzegov.	JOR	Jordan	SIN	Singapore
BLR	Belarus	KAZ	Kazakhstan	SLK	Slovakia
BRA	Brazil	KEN	Kenya	SOM	Somalia
BUF	Burkina Faso	KSA	Saudi-Arabia	SOV	Soviet Union
BUL	Bulgaria	KUW	Kuwait	SPA	Spain
BUR	Burundi	KYR	Kyrgyzia	SRI	Sri Lanka
CAR	Central African Rep.	LEB	Lebanon	SUD	Sudan
CHA	Chad	LIB	Libya	SYR	Syria
CHL	Chile	MAC	Macedonia	TAD	Tadzhikistan
CMB	Cambodia	MEX	Mexico	TAN	Tanzania
CON	Congo (Brazzaville)	MLA	Malaysia	THA	Thailand
CRO	Croatia	MLI	Mali	TRM	Turkmenistan
CUB	Cuba	MNG	Montenegro	TUR	Turkey
CYP	Cyprus	MOL	Moldova	UAE	United Arab Emirates
CZE	Czech Rep.	MOR	Morocco	UGA	Uganda
DEN	Denmark	MOZ	Mozambique	UK	United Kingdom
DJI	Djibouti	MYA	Burma	UKR	Ukraine
DRC	Congo (Kinshasa)	NAM	Namibia	URU	Uruguay
ECU	Ecuador	NED	Netherlands	US	United States
EGY	Egypt	NIC	Nicaragua	UZB	Uzbekistan
ERI	Eritrea	NIG	Nigeria	VEN	Venezuela
ETI	Ethiopia	NOR	Norway	VIE	Vietnam
FIN	Finland	OMA	Oman	YEM	Yemen
FRA	France	PAK	Pakistan	ZAM	Zambia
GAB	Gabon	PER	Peru	ZIM	Zimbabwe
None-state parties and areas that are not generally acknowledged as states					
ABK	Abkhazia (GEO)	HEZ	Hezbollah (LEB)	SOS	South Ossetia (GEO)
HAM	Hamas (Palestine)	SML	Somaliland (Somalia)	TLB	Taliban (AFG, PAK)

Annex 492

Bertrand Perrin, "L'incrimination du financement du terrorisme en droits canadien et suisse,"
42 Revue générale de droit 1 (2012)

L'incrimination du financement du terrorisme en droits canadien et suisse

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RÉSUMÉ

Deux définitions du terrorisme coexistent au Canada, l'une en matière pénale et l'autre dans le domaine de l'immigration. Le droit suisse n'incrimine que le financement du terrorisme. Contrairement au droit canadien, la Suisse a opté pour une norme générale et abstraite inspirée de la Convention internationale pour la répression du financement du terrorisme. La loi suisse n'exige pas que l'acte terroriste soit commis au nom d'un but, d'un objectif ou d'une cause de nature politique, religieuse ou idéologique. Cette solution est préférable. Par contre, le législateur suisse a exclu expressément l'incrimination du dol éventuel. Le droit canadien offre, dans ce cas, une possibilité d'incrimination plus large,

ABSTRACT

There are two definitions of terrorism in Canada, one in penal matters and another in the field of immigration. Swiss law only charges the financing of terrorism. Contrary to Canadian law, Switzerland has opted for a general and abstract standard inspired by the International Convention for the Suppression of the Financing of Terrorism. Swiss law does not require that the terrorist act be committed for a political, religious or ideological purpose, objective or cause. This solution is preferable. However, the Swiss legislator has explicitly excluded the criminalization of dolus eventualis (recklessness). Canadian law allows, in this case, a wider possibility of incrimination more favourable to the

davantage favorable à la mise en œuvre effective du droit pénal. En outre, le droit suisse ne sanctionne que le soutien financier à un acte terroriste précis, le droit canadien ayant dans ce cas aussi un champ d'application plus étendu et plus adapté. En droit canadien, l'incrimination du financement du terrorisme pourrait s'inspirer de la formulation suivante : « Est coupable d'un acte criminel passible d'un emprisonnement maximal de dix ans quiconque, directement ou non, fournit ou réunit des fonds, dans l'intention de les voir utiliser ou en sachant qu'ils seront utilisés pour financer un acte — ou une entité dont l'un des objets ou l'une des activités est de se livrer à ce type d'actes — destiné à tuer ou blesser grièvement un civil, ou toute autre personne qui ne participe pas directement aux hostilités dans une situation de conflit armé, lorsque, par sa nature ou son contexte, cet acte vise à intimider une population ou contraindre un gouvernement ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque ».

implementation of penal law. Moreover, Swiss law only sanctions the financial support to a defined terrorist act, the Canadian law having in this case a wider and more adapted range of implementation. In Canadian law, the criminalization of the financing of terrorism could build itself on the following formulation : “Anyone who, directly or indirectly, provides or collects funds intending that they be used or knowing that they will be used in order to finance an act — or an entity that has as one of its purposes or one of its activities to carry out these types of acts — intended to kill or seriously injure a civilian, or any other person not taking an active part in the hostilities in a situation of armed conflict, if the purpose of that act, by its nature or context, is to intimidate the public, or to compel a government or an international organization to do or refrain from doing any act is guilty of an indictable offence and is liable to imprisonment for a maximal term of 10 years.”

Mots-clés : *Financement du terrorisme, éléments matériels, éléments moraux, Convention des Nations Unies pour la répression du financement du terrorisme, détermination de la peine, dol éventuel, insouciance, « combats légitimes », blanchiment d'argent.*

Key-words : *Financing of terrorism, physical elements, mental elements, International Convention for the Suppression of the Financing of Terrorism, sentencing, dolus eventualis, recklessness, “legitimate struggles”, money laundering.*

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INTRODUCTION

1. Depuis les attentats du 11 septembre 2001, les initiatives législatives pour lutter contre le terrorisme et son financement ont connu une accélération significative. Le gouvernement canadien a déposé le projet de loi C-36 (loi anti-terroriste)¹ en octobre 2001. La sanction royale a été octroyée le 18 décembre 2001 et le texte final est entré en vigueur le 24 décembre de la même année, amendant notamment le

1. L.C. 2001, c. 41. (ci-après « LAT »).

*Code criminel*². Avant cette dernière date, celui-ci ne contenait aucune infraction relative au terrorisme en général et à son financement en particulier. En droit helvétique, le terrorisme n'est pas incriminé de manière autonome. L'article 260^{quinquies} du *Code pénal suisse*³, qui réprime spécifiquement son financement, est entré en vigueur le 1^{er} octobre 2003. Les infractions incriminant le financement du terrorisme sont censées entraver dans leurs actions, voire mettre hors d'état de nuire, les groupes terroristes avant qu'ils ne commettent leurs actes violents.

2. En septembre 2009, lors du XVIII^e Congrès international de droit pénal organisé par l'Association internationale de droit pénal, la Résolution n^o 6 relative au financement du terrorisme a été adoptée, énonçant qu'« une étude comparative des définitions du terrorisme et du financement du terrorisme ainsi que des autres réglementations nationales doit être entreprise afin d'identifier les problèmes et les lacunes dans l'exécution des obligations internationales »⁴. Notre article se veut une modeste contribution à l'édification de cet ambitieux projet.

3. Nous avons retenu les systèmes canadien et suisse pour trois raisons principales. Premièrement, si les deux pays sont dotés d'une structure fédérale, le Canada connaît une tradition juridique qui est le résultat d'un mélange de droit romano-germanique, comme en Suisse, mais aussi de common law. « Que la comparaison entre deux droits (ou deux systèmes) soit utile et même indispensable est évident. Le comparatiste comprend mieux son droit en étudiant celui de ses voisins. Il peut en outre permettre au législateur de son pays de s'enrichir du droit des autres »⁵. Cette règle énoncée par Pierre Béliveau et Jean Pradel est valable quels que soient les ordres juridiques envisagés. Elle justifie déjà en elle-même la présente analyse. Mais, en plus, il s'avère particulièrement instructif d'examiner comment deux systèmes

2. L.R.C. 1985, c. C-46 (ci-après « C.cr. »).

3. Recueil systématique du droit fédéral (RS) 311.0 (ci-après « CPS »).

4. [En ligne]. http://www.penal.org/?page=activites&id_article=149 (Page consultée le 3 octobre 2011).

5. Pierre BÉLIVEAU, Jean PRADEL, *La justice pénale dans les droits canadien et français. Étude comparée d'un système accusatoire et d'un système inquisitoire*, 2^e éd., Cowansville (Québec), Bruylant, Éditions Yvon Blais, 2007, par. 8, p. 2 et 3.

assez éloignés l'un de l'autre ont tenté de résoudre le même problème. Si tout exercice de comparaison s'avère intrinsèquement intéressant en raison de l'effet de contraste qui permet de mieux mettre en lumière les caractéristiques respectives, un plus grand éloignement institutionnel implique un effort d'analyse préalable plus important et donc un enrichissement subséquent d'autant plus profitable. Deuxièmement, comme nous le montrerons, les deux États, en matière de terrorisme, se préoccupent avant tout des activités de soutien apportées à celui-ci, en particulier les opérations de financement. Troisièmement, à notre connaissance, aucun exercice de droit comparé relatif à ce thème n'a, jusqu'à présent, porté de manière synoptique sur les droits canadien et suisse⁶.

4. Notre étude vise à éclairer les points saillants des incriminations dans les deux pays, essentiellement en s'appuyant sur les débats doctrinaux qui ont animé le monde juridique, avec pour finalité ultime de suggérer des pistes de réflexion et des améliorations de nature législative. C'est ainsi qu'après une présentation de la *Convention des Nations Unies pour la répression du financement du terrorisme*, nous rappellerons dans quelle mesure les deux États sont concernés par la problématique du terrorisme et ce que recouvre ce terme aux multiples définitions. Nous examinerons ensuite de manière synoptique les éléments matériels et moraux (objectifs et subjectifs) de l'infraction de financement de terrorisme. L'analyse du seul cas jugé dans les deux pays, en l'occurrence en Colombie-Britannique, sera aussi l'occasion d'exposer les règles respectives appliquées en matière de détermination de la peine. Enfin, avant d'aborder la question du blanchiment de capitaux, cinq problématiques qui ont fait débat seront analysées dans le but de proposer une formulation légale plus adéquate : l'incrimination autonome du terrorisme, les motifs de nature politique, religieuse ou idéologique en tant qu'éléments constitutifs, l'incrimination du dol éventuel (insouciance), l'objet du financement (acte terroriste précis ou

6. En particulier, lors du XVIII^e Congrès international de droit pénal précité, le Canada et la Suisse n'ont pas rédigé de rapport national sur le thème du financement du terrorisme. Nous nous proposons de tenter de combler cette « lacune ».

incrimination plus large) et la question des « combats légitimes » en tant qu'exceptions à la punissabilité.

1. LE CANADA ET LA SUISSE FACE AU TERRORISME ET À SON FINANCEMENT

5. Les activités terroristes peuvent être de nature primaire ou secondaire. La première catégorie regroupe les comportements violents qui constituent le cœur de celles-ci. La seconde correspond aux activités de soutien, comme recruter des membres ou financer les activités du groupe. Le Canada et la Suisse se préoccupent avant tout de ce dernier groupe, ce qui rend l'exercice de comparaison d'autant plus pertinent.

6. Le Canada représente principalement une aire pour ceux qui sont engagés dans des activités terroristes internationales. Il n'est presque jamais ciblé par des activités primaires⁷. Les actes terroristes y sont rares et se révèlent le plus souvent de gravité infime⁸, bien que le pays ait été frappé, en 1985, par l'un des attentats les plus meurtriers de l'histoire⁹. Aucune tendance ne montre que cette situation soit en changement à moyen ou long terme¹⁰. La plupart des

7. Stéphane LEMAN-LANGLAIS, « Terrorisme et crime organisé, contrastes et similitudes », dans Charles-Philippe DAVID et Benoît GAGNON (dir.), *Repenser le terrorisme. Concept, acteurs et réponses*, Québec, Les Presses de l'Université Laval, 2007, p. 91, à la p. 94.

8. « On estime qu'il y a eu au Canada, entre 1973 et 2003, 6 détournements d'avion, 2 attentats à la bombe contre des avions, 73 canulars perturbateurs, 9 prises d'otages ou enlèvements, 4 lettres piégées, 170 bombes, bombes incendiaires et incendies criminels, 59 menaces, 35 agressions contre des personnes, 45 actes de vandalisme, 14 complots et attaques déjoués et 32 cas de soutien d'activités terroristes. [La plupart des ces actes] ne présentaient aucun caractère transnational et aucun n'a eu l'impact de l'attentat de septembre 2001 aux États-Unis » (CANADA, CHAMBRE DES COMMUNES, *Droits, restrictions et sécurité : un examen complet de la loi antiterroriste et des questions connexes*, Rapport final du Comité permanent de la sécurité publique et nationale, Ottawa, Communication Canada Édition, 1^{ère} sess., 39^e légis., mars 2007, p. 1).

9. Des valises contenant des explosifs avaient été placées dans deux avions en partance de Vancouver. Ceux-ci visaient la compagnie Air India. L'une des bombes explosa à l'aéroport de Narita, au Japon, tuant deux personnes et faisant quatre blessés. La seconde détruisit le vol 182, au large de l'Irlande, faisant 329 victimes, dont 279 Canadiens.

10. Stéphane LEMAN-LANGLAIS, Geneviève OUELLET, « L'évolution du terrorisme au Canada, 1973-2006 », dans Stéphane LEMAN-LANGLAIS et Jean-Paul BRODEUR (dir.), *Terrorisme et antiterrorisme au Canada*, Montréal, Les Presses de l'Université de Montréal, 2009, p. 58, à la p. 71.

activités terroristes découvertes concernent des collectes de fonds à l'intérieur des frontières du pays pour financer des activités à l'étranger¹¹.

7. La Suisse a jusqu'à présent été très épargnée par les activités primaires. Selon le Service de renseignement de la Confédération, la menace du terrorisme ne constitue pas aujourd'hui un danger pour l'État. En 2010, les alertes terroristes ont été nombreuses en Europe, mais aucun indice ne laisse penser que la Suisse pourrait être directement visée par des attentats¹². Elle peut, cependant, servir de base pour des opérations de financement du terrorisme. Si son importante place financière ne semble pas jouer de rôle central en la matière, il ne faut pas oublier « que tant en Suisse qu'à l'étranger, les systèmes informels et autres méthodes alternatives de transferts de fonds comme le Hawala-Banking où les coursiers échappent en grande partie aux contrôles des autorités »¹³. Les problèmes de preuve se révèlent également souvent très épineux, voire rédhibitoires. Il serait donc hasardeux de tirer prématurément des conclusions trop optimistes.

2. LA CONVENTION DES NATIONS UNIES POUR LA RÉPRESSION DU FINANCEMENT DU TERRORISME

2.1 L'ORIGINE ET LE PROCESSUS DE RATIFICATION

8. La *Convention internationale pour la répression du financement du terrorisme* a été adoptée par l'Assemblée générale des Nations Unies le 9 décembre 1999¹⁴. Elle est entrée en vigueur pour le Canada le 10 avril 2002 et pour la Suisse le 23 octobre 2003. Elle concrétise la réponse de la

11. CENTRE D'ANALYSE DES OPÉRATIONS ET DÉCLARATIONS FINANCIÈRES DU CANADA, *Regard sur le blanchiment d'argent et le financement des activités terroristes*, janvier à mars 2011, p. 10, [En ligne]. <http://www.fintrac.gc.ca/publications/watch-regard/2011-06-fra.pdf> (Page consultée le 3 octobre 2011).

12. SERVICE DE RENSEIGNEMENT DE LA CONFÉDÉRATION, *La sécurité de la Suisse*, Rapport annuel 2010, p. 14, [En ligne]. http://www.vbs.admin.ch/internet/vbs/fr/home/documentation/publication/snd_publ.parsys.58928.downloadList.74800.DownloadFile.tmp/ndbjahresbericht2010f.pdf (Page consultée le 3 octobre 2011).

13. *Id.*, p. 45.

14. A/RES/54/109.

communauté internationale qui a pris conscience de la nécessité de définir une politique spécifique en la matière, en écho aux attentats contre les ambassades américaines de Nairobi, au Kenya, et de Dar es-Salaam, en Tanzanie, en 1998¹⁵. Cependant, à la veille du 11 septembre 2001, seuls quatre pays l'avaient ratifiée. Les événements tragiques qui ont bouleversé le monde ce jour-là ont incité les États à accélérer le processus. Le 28 septembre 2001, le Conseil de sécurité des Nations Unies a adopté la Résolution 1373 qui demandait, notamment, aux États de devenir dès que possible parties à la Convention¹⁶. Ils sont aujourd'hui au nombre de 174¹⁷. L'enjeu demeure pourtant très actuel, car, comme le souligne Nikos Passas dans son rapport général sur le financement du terrorisme, rédigé en vue du colloque préparatoire au XVIII^e Congrès de droit pénal qui s'est déroulé en avril 2008¹⁸ :

les rapports nationaux [...] rapportent qu'il n'existe aucune approche légale uniforme dans le cadre de la lutte contre le financement du terrorisme. On constate, en effet, une extraordinaire diversité entre les pays en ce qui concerne les définitions du financement du terrorisme, les sanctions, le traitement des victimes et les procédures pénales, atteignant une telle cacophonie, qu'elle en ralentit la coopération internationale et les accords d'assistance légale mutuelle.

2.2 LES OBLIGATIONS DES PARTIES

9. Les obligations principales pour les États parties à la convention consistent à ériger le financement du terrorisme en infraction, à coopérer les uns avec les autres, à se prêter mutuellement une assistance judiciaire, ainsi qu'à adopter des mesures pour répertorier et signaler les indices de financement

15. Julie ALIX, *Terrorisme et droit pénal. Étude critique des incriminations terroristes*, Paris, Dalloz, 2010, n° 173, p. 125.

16. S/RES/1373 (2001).

17. État au 28 août 2011.

18. Nikos PASSAS, « Le financement du terrorisme. Rapport général », (2008) 79 (3/4) *Revue internationale de droit pénal* 303, 315, XVIII^e Congrès International de droit pénal. Colloque préparatoire. Cleveland (É.-U.), 9-12 avril 2008. Section II — Droit pénal spécial. Le financement du terrorisme. Quinze rapports nationaux ont été rédigés, dont ceux de l'Allemagne, des États-Unis d'Amérique et de la France. Comme nous l'avons précisé, le Canada et la Suisse n'étaient pas représentés.

d'actes terroristes, ce dernier devoir devant être assumé par les institutions financières et les autres professions intervenant dans les opérations financières. Le point central de la Convention se trouve à son article 2 chiffre 1, qui définit le financement du terrorisme. Il a la teneur suivante :

Commet une infraction au sens de la présente Convention toute personne qui, par quelque moyen que ce soit, directement ou indirectement, illicitement et délibérément, fournit ou réunit des fonds dans l'intention de les voir utilisés ou en sachant qu'ils seront utilisés, en tout ou partie, en vue de commettre :

- a) Un acte qui constitue une infraction au regard et selon la définition de l'un des traités énumérés en annexe;
- b) Tout autre acte destiné à tuer ou blesser grièvement un civil, ou toute autre personne qui ne participe pas directement aux hostilités dans une situation de conflit armé, lorsque, par sa nature ou son contexte, cet acte vise à intimider une population ou à contraindre un gouvernement ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque.

2.3 LES ÉLÉMENTS MATÉRIELS

10. Les éléments constitutifs objectifs de l'infraction de financement du terrorisme sont la mise à disposition ou la collecte de fonds et l'acte de terrorisme. Le premier est défini de manière large. Le second contient, d'une part, une acception propre et, d'autre part, procède par renvoi à des conventions sectorielles.

11. Les fonds sont, selon l'article premier chiffre 1 de la Convention :

[...] des biens de toute nature, corporels ou incorporels, mobiliers ou immobiliers, acquis par quelque moyen que ce soit, et des documents ou instruments juridiques sous quelque forme que ce soit, y compris sous forme électronique ou numérique, qui attestent un droit de propriété ou un intérêt sur ces biens, et notamment les crédits bancaires, les chèques de voyage, les chèques bancaires, les mandats, les actions, les titres, les

obligations, les traites et les lettres de crédit, sans que cette énumération soit limitative.

12. Ils peuvent être d'origine licite ou non. Leur mise à disposition peut être réalisée non seulement par les bailleurs de fonds, mais également par ceux qui se chargent du transfert des moyens financiers destinés à permettre un attentat terroriste. L'article 2 chiffre 3 de la Convention ajoute qu'il n'est pas nécessaire que les fonds en cause soient effectivement utilisés dans le contexte d'un acte terroriste. Le fait même de réaliser une opération financière est donc déjà punissable¹⁹.

13. L'article 2 chiffre 1 lettre a de la Convention recourt à une définition fonctionnelle du terrorisme en le considérant comme un acte qui constitue une infraction au regard de l'une des neuf conventions sectorielles citées en annexe, comme la *Convention des Nations Unies contre la prise d'otages* du 17 décembre 1979 ou la *Convention internationale pour la répression des attentats terroristes à l'explosif* du 15 décembre 1997²⁰. Toutes décrivent des comportements spécifiques qu'elles entendent voir incriminés par les États parties. Chacun de ceux-ci est assimilé à un acte terroriste par la Convention. L'article 2 chiffre 1 lettre b de cette dernière prévoit quant à lui une définition stipulative et déterminative, qui implique la réalisation de deux conditions : l'acte doit être destiné à tuer ou blesser grièvement un civil (ou toute autre personne qui ne participe pas directement aux hostilités dans une situation de conflit armé) et viser à

19. Julien GAFNER, *L'incrimination du financement du terrorisme*, Genève, Zurich et Bâle, Schulthess, 2006, p. 61.

20. Les autres conventions sont celles adoptées par l'Organisation de l'aviation civile internationale, soit la *Convention pour la répression de la capture illicite d'aéronefs*, du 16 décembre 1970, et la *Convention pour la répression d'actes illicites dirigés contre la sécurité de l'aviation civile*, du 23 septembre 1971, ainsi que des Nations Unies, soit la *Convention sur la prévention et la répression des infractions contre les personnes jouissant d'une protection internationale, y compris les agents diplomatiques*, du 14 décembre 1973, la *Convention sur la protection physique des matières nucléaires*, du 3 mars 1980, et la *Convention pour la répression d'actes illicites contre la sécurité de la navigation maritime*, du 10 mars 1988. S'ajoutent à la liste le *Protocole pour la répression d'actes illicites de violence dans les aéroports servant à l'aviation civile internationale*, du 24 février 1988 (complémentaire à la *Convention pour la répression d'actes illicites dirigés contre la sécurité de l'aviation civile*), et le *Protocole pour la répression d'actes illicites contre la sécurité des plates-formes fixes situées sur le plateau continental*, du 10 mars 1988.

intimider une population ou contraindre un gouvernement (ou une organisation internationale) à accomplir ou à s'abstenir d'accomplir un acte quelconque.

2.4 LES ÉLÉMENTS MORAUX

14. Sur le plan subjectif, la formulation retenue à l'article 2 chiffre 1 de la Convention s'avère restrictive. L'auteur doit avoir fourni ou réuni les fonds « dans l'intention de les voir utilisés ou en sachant qu'ils seront utilisés » en vue de commettre un acte de terrorisme. Il faut donc qu'il ait eu l'intention, d'une part, de commettre l'acte, c'est-à-dire la transaction financière à proprement parler ou la recherche de fonds, et, d'autre part, de mettre ces derniers à la disposition de groupements terroristes, ou à tout le moins savoir qu'ils étaient destinés à des opérations terroristes²¹.

3. LES DÉFINITIONS DU TERRORISME

3.1 LES CARACTÉRISTIQUES COMMUNES SUR LE PLAN INTERNATIONAL

15. Il n'existe pas d'accord global ou universel sur ce que recouvre la notion de « terrorisme », tant sur le plan de la recherche universitaire qu'institutionnel. Pourtant, il s'avérerait très utile d'aboutir à une définition consensuelle pour au moins deux raisons. D'une part, elle permettrait de rendre les mesures antiterroristes adoptées par les États plus efficaces, l'acquisition d'une référence conceptuelle unique permettant aux stratégies de contre-terrorisme d'être beaucoup plus cohérentes. D'autre part, elle contribuerait à l'avancement de la connaissance en servant à la promotion d'un cadre référentiel commun²². L'exercice de droit comparé s'inscrit notamment dans cette dernière perspective.

21. J. GAFNER, préc., note 19, p. 66 et 67.

22. Vanessa MARTIN VANASSE, Marc-Olivier BENOIT, « La définition du terrorisme : un état des lieux », dans C.-P. DAVID et B. GAGNON (dir.), *Repenser le terrorisme. Concepts, acteurs et réponses*, Québec, Les Presses de l'Université Laval, 2007, p. 25, p. 33 et 34.

16. Alex Schmid et Albert Jongman ont analysé 109 définitions du terrorisme, recueillies entre 1936 et 1981²³. Ils ont retenu 22 concepts qu'ils ont classés par fréquence. La violence, l'objectif politique, ainsi que l'utilisation de la peur et de la terreur, sont les éléments qui reviennent le plus souvent²⁴. « Il s'agit de trois composantes nécessaires, mais insuffisantes à l'obtention d'une définition complète du terrorisme. [...] [D]'autres éléments tels que [...] les cibles ou les objectifs doivent être pris en considération »²⁵. D'une manière générale, les définitions choisies par les autorités nationales ou internationales retiennent essentiellement deux facteurs intentionnels. Le premier est celui de coercition exercée à l'égard d'un État (ou d'une organisation internationale) ou l'intimidation du public, parfois également la déstabilisation de structures institutionnelles. Secondement, certaines législations, comme celles de l'Angleterre ou du Canada, précisent encore que l'acte doit avoir été perpétré dans l'intention d'exprimer une idée à caractère politique, religieux ou idéologique²⁶.

23. Alex SCHMID, Albert JONGMAN, *Political Terrorism. A New Guide to Actors, Authors, Concepts, Data Bases, Theories & Literature*, New Brunswick (USA) and London (UK), Transaction Publishers, expanded and updated edition, 2005, p. 5 et 6.

24. Les catégories et leur fréquence sont, par ordre décroissant, les suivantes : « violence, force » (83,5 %), « politique » (65,0 %), « peur, terreur accentuée » (51,0 %), « menace » (47,0 %), « effets (psychologiques) et réactions (anticipées) » (41,5 %), « différenciation victime-cible » (37,5 %), « action intentionnelle, planifiée, systématique, organisée » (32,0 %), « méthode de combat, stratégie, tactique » (30,5 %), « hors-norme, en violation des règles, sans contrainte humaine » (30,0 %), « coercition, extorsion, incitatif à l'obéissance » (28,0 %), « publicité » (21,5 %), « arbitraire, impersonnel, caractère aléatoire, sans discrimination » (21,0 %), « victimes : civils, non-combattants, neutres » (17,5 %), « intimidation » (17,0 %), « accentuation de l'innocence des victimes » (15,5 %), « groupes, mouvements, organisations comme auteurs » (14,0 %), « aspects symboliques, démonstration aux autres » (13,5 %), « violence incalculable, imprévisible, inattendue » (9,0 %), « nature clandestine » (9,0 %), « caractère répétitif ou en série de la violence » (7,0 %), « criminel » (6,0 %), « exigences faites à des parties tierces » (4,0 %). Traduction de V. MARTIN VANASSE et M.-O. BENOIT, préc., note 22, à la p. 45.

25. *Ibid.*

26. Ludovic HENNEBEL, Gregory LEWKOWICZ, « Le problème de la définition du terrorisme », dans Ludovic HENNEBEL et Damien VANDERMEERSCH (dir.), *Juger le terrorisme dans l'État de droit*, Bruxelles, Bruylant, 2009, p. 17, p. 40 et 41.

3.2 LES DÉFINITIONS EN DROIT CANADIEN

3.2.1 La définition du *Code criminel*

17. La LAT a amendé plusieurs lois²⁷, dont le *Code criminel*²⁸. Une partie II.1, intitulée « Terrorisme » (« *Terrorism* ») a été ajoutée à ce dernier (art. 83.01 à 83.33 C.cr.). La modification législative a introduit en particulier les concepts d'« activité terroriste » et de « groupe terroriste » (« *terrorist activity* », « *terrorist group* », par. 83.01 (1) C.cr.). L'« infraction de terrorisme » (« *terrorism offence* », art. 2 C.cr.) est définie par renvoi, puisqu'elle englobe les infractions visées à l'un des articles 83.02 à 83.04 C.cr. et 83.18 à 83.23 C.cr., et les actes criminels commis au profit ou sous la direction d'un groupe terroriste, ou en association avec lui, ainsi que ceux dont l'élément matériel — acte ou omission — constitue également une activité terroriste²⁹.

18. L'« activité terroriste » peut revêtir deux formes. D'une part, il s'agit de tout acte — action ou omission, commise au Canada ou à l'étranger — qui constitue une infraction de terrorisme au sens de l'une des dix conventions, signées par le Canada, citées à l'alinéa 83.01 (1) (a) C.cr.³⁰. D'autre part, l'alinéa 83.01 (1) (b) fournit une définition autonome et générique :

27. Principaux textes législatifs concernés : *Loi sur les secrets officiels*, *Loi sur la protection de l'information*, *Loi sur la preuve au Canada*, *Loi sur le recyclage des produits de la criminalité*, *Loi sur l'accès à l'information*, *Loi canadienne sur les droits de la personne*, *Loi sur le Service canadien du renseignement de sécurité*, *Loi sur le système correctionnel et la mise en liberté sous condition*, *Loi sur la Cour fédérale*, *Loi sur les armes à feu*, *Loi sur la défense nationale*, *Loi sur la protection des renseignements personnels et les documents électroniques*, *Loi sur la protection des renseignements personnels*, *Loi sur l'administration des biens saisis*, *Loi sur les Nations Unies*.

28. Historique du Projet de loi C-36, [En ligne]. <http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=F&billId=73328&Mode=1> (Page consultée le 3 octobre 2011).

29. Le complot ou la tentative en vue de commettre l'une de ces infractions ou, relativement à l'une de celles-ci, la complicité après le fait ou l'encouragement à la perpétration sont également considérés comme des infractions de terrorisme.

30. Ce sont les mêmes conventions que celles citées en annexe de la *Convention internationale pour la répression du financement du terrorisme*, auxquelles a été adjointe cette dernière.

[...] un acte — action ou omission, commise au Canada ou à l'étranger :

(i) d'une part, commis à la fois :

(A) au nom — exclusivement ou non — d'un but, d'un objectif ou d'une cause de nature politique, religieuse ou idéologique,

(B) en vue — exclusivement ou non — d'intimider tout ou partie de la population quant à sa sécurité, entre autres sur le plan économique, ou de contraindre une personne, un gouvernement ou une organisation nationale ou internationale à accomplir un acte ou à s'en abstenir, que la personne, la population, le gouvernement ou l'organisation soit ou non au Canada,

(ii) d'autre part, qui intentionnellement, selon le cas :

(A) cause des blessures graves à une personne ou la mort de celle-ci, par l'usage de la violence,

(B) met en danger la vie d'une personne,

(C) compromet gravement la santé ou la sécurité de tout ou partie de la population,

(D) cause des dommages matériels considérables, que les biens visés soient publics ou privés, dans des circonstances telles qu'il est probable que l'une des situations mentionnées aux divisions (A) à (C) en résultera,

(E) perturbe gravement ou paralyse des services, installations ou systèmes essentiels, publics ou privés, sauf dans le cadre de revendications, de protestations ou de manifestations d'un désaccord ou d'un arrêt de travail qui n'ont pas pour but de provoquer l'une des situations mentionnées aux divisions (A) à (C).

19. L'alinéa 83.01 (1) (b) C.cr. précise que :

[S]ont visés par la présente définition, relativement à un tel acte, le complot, la tentative, la menace, la complicité après le fait et l'encouragement à la perpétration; il est entendu que sont exclus de la présente définition l'acte — action ou omission — commis au cours d'un conflit armé et conforme, au moment et au lieu de la perpétration, au droit international coutumier ou au droit international conventionnel applicable au conflit ainsi que les activités menées par les forces armées d'un État dans l'exercice de leurs fonctions officielles, dans la

mesure où ces activités sont régies par d'autres règles de droit international.

20. Un « groupe terroriste » est « une entité dont l'un des objets ou l'une des activités est de se livrer à des activités terroristes ou de les faciliter » (par. 83.01 (1) C.cr.)³¹. Tombent également dans cette catégorie les entités inscrites (« *listed entities* ») au sens de l'article 83.05 C.cr.³².

3.2.2 La définition retenue en matière d'immigration

21. Dans le domaine de l'immigration, la Cour suprême du Canada a adopté une définition moins complexe, fondée sur l'article 2 chiffre 1 lettre b de la *Convention internationale pour la répression du financement du terrorisme*. Dans l'affaire *Suresh c. Canada*³³, elle a considéré que le terme « terrorisme » figurant à l'ancien article 19 de la *Loi sur l'immigration*³⁴ incluait³⁵:

31. L'article précise qu'une entité est une « personne, groupe, fiducie, société de personnes ou fonds, ou organisation ou association non dotée de la personnalité morale ».

32. « Le gouverneur en conseil peut, par règlement, établir une liste sur laquelle il inscrit toute entité dont il est convaincu, sur la recommandation du ministre de la Sécurité publique et de la Protection civile, qu'il existe des motifs raisonnables de croire : a) que, sciemment, elle s'est livrée ou a tenté de se livrer à une activité terroriste, y a participé ou l'a facilitée; b) que, sciemment, elle a agi au nom d'une entité visée à l'alinéa a), sous sa direction ou en collaboration avec elle » (par. 83.05 (1) C.cr.). L'entité inscrite est *ipso iure* considérée comme un groupe terroriste. Cette « liste pénale » est à distinguer de celles établies sur la base du *Règlement d'application des résolutions des Nations Unies sur Al-Qaïda et le Taliban*, DORS/99-444 et du *Règlement d'application des résolutions des Nations Unies sur la lutte contre le terrorisme*, DORS/2001-360.

33. La demande d'obtention du statut de résident permanent avait été refusée à Manickavasagam Suresh sur la base des articles 53 (1) (b) et 19 (1) de l'ancienne *Loi sur l'immigration*, L.R.C. 1985, c. I-2. Le Solliciteur général du Canada et la ministre de la Citoyenneté et de l'Immigration avaient engagé des procédures en vue de l'expulser au Sri Lanka, estimant qu'il n'était pas admissible au Canada pour des raisons de sécurité. Ils considéraient en effet qu'il était membre et avait participé à des activités de financement des Tigres libérateurs de l'Eelam tamoul, organisation active au Canada sous les auspices du *World Tamil Movement*.

34. Le jugement avait été rendu avant que le texte actuel, la *Loi sur l'immigration et la protection des réfugiés*, L.C. 2001, c. 27, entre en vigueur. Les références au « terrorisme » figurent désormais aux alinéas 34 (1) (c) et 35 (1) (b) de la Loi.

35. *Suresh c. Canada (ministre de la Citoyenneté et de l'Immigration)*, [2002] 1 R.C.S. 3, par. 98. La Cour a estimé que le terme utilisé revêt un sens « suffisamment certain pour être pratique, raisonnable et constitutionnel ».

[...] tout acte destiné à tuer ou blesser grièvement un civil, ou toute autre personne qui ne participe pas directement aux hostilités dans une situation de conflit armé, lorsque, par sa nature ou son contexte, cet acte vise à intimider une population ou à contraindre un gouvernement ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque.

22. Le Comité sénatorial spécial sur la Loi antiterroriste a regretté que deux définitions du terrorisme cohabitent dans le droit canadien et a proposé au gouvernement d'en adopter une seule applicable aux lois fédérales. L'avis exprimé renforce l'idée qu'un éclatement définitionnel n'est pas souhaitable et qu'il convient d'essayer de tendre vers un consensus :

[N]ous trouvons préoccupant le fait que deux définitions du terrorisme soient utilisées dans le contexte juridique canadien. Nous sommes également préoccupés par la possibilité que le gouvernement décide à un moment donné d'inclure différentes définitions du terrorisme dans différentes lois, selon le sujet traité. C'est l'approche qui a été adoptée par les États-Unis. Elle comporte des avantages, à savoir que chaque définition peut être adaptée aux besoins du domaine en cause, mais ces avantages, selon nous, ne suffisent pas à contrebalancer la confusion qui résulte de l'existence de multiples définitions, quant au choix de la définition à appliquer et la manière de l'interpréter en conformité avec la Charte. Les citoyens doivent savoir précisément quelles seront les conséquences de leurs actes, qu'il s'agisse d'immigration, de droit criminel ou de tout autre domaine. La présence de plusieurs définitions contribue au manque de clarté autour de la question de savoir ce qui constitue du terrorisme³⁶.

3.3 LA DÉFINITION EN DROIT PÉNAL SUISSE

23. L'article 260^{quinquies} CPS³⁷ n'incrimine pas le terrorisme de manière autonome, mais uniquement son financement

36. CANADA, SÉNAT, Comité sénatorial spécial sur la *Loi antiterroriste, Justice fondamentale dans des temps exceptionnels*, février 2007, p. 17, [En ligne]. http://publications.gc.ca/collections/collection_2011/sen/yc2-2-0/YC2-2-0-391-3-fra.pdf (Page consultée le 3 octobre 2011).

37. Historique du processus législatif, [En ligne]. http://www.parlament.ch/fr/suche/pages/geschaefte.aspx?gesch_id=20020052 (Page consultée le 3 octobre 2011).

(« financement du terrorisme », « *Finanzierung des Terrorismus* », « *finanziamento del terrorismo* »). Il le conçoit comme

[...] un acte de violence criminelle visant à intimider une population ou à contraindre un État ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque.

24. Un acte de violence criminel³⁸ est un « crime grave impliquant l'usage de la violence »³⁹. Un crime est une infraction passible d'une peine privative de liberté de plus de trois ans (art. 10, al. 2 CPS)⁴⁰. Les actes de violence peuvent être rattachés à trois groupes d'infractions (étant précisé que l'emploi de la force ne représente pas une condition nécessaire, la propagation d'un virus dangereux pouvant, par exemple, constituer un cas d'application)⁴¹ : tout d'abord, certains comportements qui sont dirigés contre des personnes, comme le meurtre (art. 111 CPS), l'assassinat (art. 112 CPS) ou les lésions corporelles graves (art. 122 CPS); ensuite, les destructions de biens qui impliquent un danger concret et grave pour l'intégrité corporelle humaine, en particulier certains incendies ou explosions; enfin, les atteintes à la liberté avec un risque actuel qu'une atteinte grave à l'intégrité corporelle soit commise, telles que les enfermements prolongés d'otages.

38. Il est plus juste d'accorder « criminel » avec acte, comme c'était le cas dans le projet du Conseil fédéral.

39. Message du Conseil fédéral (gouvernement fédéral) du 26 juin 2002 relatif aux Conventions internationales pour la répression du financement du terrorisme et pour la répression des attentats terroristes à l'explosif ainsi qu'à la modification du Code pénal et à l'adaptation d'autres lois fédérales, Feuille fédérale 2002, p. 5014, à la p. 5062, [En ligne]. <http://www.admin.ch/ch/f/ff/2002/5014.pdf> (Page consultée le 3 octobre 2011).

40. En droit pénal suisse, il existe trois catégories d'infractions : les crimes, les délits et les contraventions (par ordre décroissant de gravité). Les délits sont passibles d'une peine privative de liberté n'excédant pas trois ans ou d'une peine pécuniaire (art. 10, al. 3 CPS). Les contraventions sont passibles d'une amende, dont le montant maximum s'élève à 10 000 francs suisses (art. 103 et 106, al. 1 CPS), soit environ 11 200 dollars canadiens (cours du 16 septembre 2011).

41. Ursula CASSANI, « Le train de mesures contre le financement du terrorisme : une loi nécessaire? », (2003) 6 *Revue suisse de droit des affaires* 293, 298.

25. En matière pénale, il n'existe pas de listes d'entités comme celles prévues par les articles 83.05 à 83.07 C.cr.⁴². Le ministère public doit donc dans tous les cas prouver l'existence d'un acte de violence criminel.

3.4 COMPARAISON

26. Les cas de figure dégagés par voie d'interprétation en droit suisse coïncident grandement avec ceux cités par le législateur canadien au sous-alinéa 83.01 (1) (b) (ii) C.cr., à l'exception de la situation décrite à la division (E), bien que celle-ci puisse également correspondre, selon les circonstances, à un acte de violence criminel au sens du droit suisse. En effet, si elle représente la partie la plus large de la définition du terrorisme, mais aussi la plus imparfaite, et qu'il n'apparaît pas clairement quels sont les services qui peuvent être considérés comme essentiels, il peut être admis, par exemple, que des barrages ou obstructions de routes tombent sous le coup de la définition légale⁴³. Or, l'article 237 CPS punit celui qui entrave la circulation publique. Cette dernière englobe tous les déplacements d'une personne ou d'une chose d'un lieu à un autre, pour autant qu'ils se déroulent en un lieu qui est accessible pour cet usage à un cercle indéterminé d'individus⁴⁴. Sur terre, il faut qu'il existe un chemin, une route ou une aire de manœuvre ou de stationnement. Celui qui empêche ou trouble la circulation publique en mettant sciemment en danger la vie ou l'intégrité corporelle d'un

42. Il existe par contre une *Loi fédérale sur l'application des sanctions internationales* (RS 946.231) sur la base de laquelle a été édictée une *Ordonnance instituant des mesures à l'encontre de personnes et entités liées à Oussama ben Laden, au groupe « Al-Qaïda » ou aux Talibans* (RS 946.203). Selon l'article 3, alinéa 1 de cette dernière, « les avoirs et les ressources économiques appartenant aux personnes physiques et morales, aux groupes ou aux entités cités à l'annexe 2 ou contrôlés par ces derniers sont gelés ».

43. Kent ROACH, « The New Terrorism Offences and the Criminal Law », dans Ronald DANIELS, Patrick MACKLEM, Kent ROACH (dir.), *The Security of Freedom: Essays on Canada's Anti-Terrorism Bill*, Toronto, Buffalo, London, University of Toronto Press, 2001 (reprinted 2002), p. 151, à la p. 158.

44. Bernard CORBOZ, *Les infractions en droit suisse*, 3^e éd., vol. II, Berne, Stämpfli, 2010, n^o 3-6 ad art. 237 CPS, p. 153.

grand nombre de personnes⁴⁵ se rend coupable, selon nous, d'un acte de violence criminel.

27. Alors que le Canada a choisi de définir le second volet de l'acte terroriste (sous-al. 83.01 (1) (b) (ii) C.cr.) de manière relativement détaillée en s'appuyant sur une liste de cinq intentions secondaires, la Suisse a opté pour une norme générale et abstraite inspirée de l'article 2 chiffre 1 lettre b de la *Convention internationale pour la répression du financement du terrorisme*, semblable à celle décrite à la division (B) du sous-alinéa 83.01 (1) (b) (i) C.cr. Cette dernière solution, semblable à la définition retenue par la Cour suprême canadienne dans l'affaire *Suresh*, nous semble préférable. En effet, si le législateur helvétique a renoncé à établir une liste énumérative d'infractions concrètes pour décrire l'acte de violence, c'est qu'il a estimé, à juste titre selon nous, qu'une telle solution se serait révélée très compliquée. En outre, le risque qu'elle s'avère incomplète ne peut pas être écarté⁴⁶. Comme en droit suisse, il devrait incomber au juge pénal, dans chaque cas concret, de se fonder sur la formulation légale générale et d'apprécier le comportement incriminé en tenant compte de tous les critères pertinents.

28. Le droit suisse n'exige pas que l'acte terroriste soit commis au nom d'un but, d'un objectif ou d'une cause de nature politique, religieuse ou idéologique. Cette approche législative est préférable. Ce point a beaucoup animé le débat doctrinal au Canada. Vu son importance particulière dans la perspective d'une formulation plus adéquate de l'infraction de terrorisme, nous l'examinerons plus en détail ultérieurement⁴⁷.

45. Plus de dix personnes selon l'arrêt du Tribunal fédéral (ATF) 106 IV 121, 124-125, considérant 3d. Les arrêts du Tribunal fédéral sont consultables sur le site, [En ligne]. <http://www.bger.ch/fr/index/jurisdiction/jurisdiction-inherit-template/jurisdiction-recht.htm> (Page consultée le 3 octobre 2011).

46. Message du Conseil fédéral du 26 juin 2002, préc., note 39, à la p. 5062.

47. *Infra*, chapitre 6.3.

4. LES ÉLÉMENTS CONSTITUTIFS DU FINANCEMENT DU TERRORISME DANS LES DEUX ORDRES JURIDIQUES

4.1 EN DROIT CANADIEN

4.1.1 Les dispositions du *Code criminel*

29. La LAT a créé de nouvelles infractions relatives au financement du terrorisme (« *financing of terrorism* »). Elles sont regroupées aux articles 83.02 à 83.04 C.cr.⁴⁸.

30. L'article 83.02 C.cr. sanctionne la fourniture ou la réunion de biens « en vue de certains actes » :

Est coupable d'un acte criminel passible d'un emprisonnement maximal de dix ans quiconque, directement ou non, fournit ou réunit, délibérément et sans justification ou excuse légitime, des biens dans l'intention de les voir utiliser — ou en sachant qu'ils seront utilisés — en tout ou en partie, en vue :

a) d'un acte — action ou omission — qui constitue l'une des infractions prévues aux sous-alinéas (a) (i) à (ix) de la définition de « activité terroriste » au paragraphe 83.01 (1);

b) de tout autre acte — action ou omission — destiné à causer la mort ou des dommages corporels graves à une personne qui ne participe pas directement aux hostilités dans une situation de conflit armé, notamment un civil, si, par sa nature ou son contexte, cet acte est destiné à intimider la population ou à contraindre un gouvernement ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque.

31. L'article 83.03 C.cr. punit le fait de « fournir, rendre disponible, etc. des biens ou services à des fins terroristes » :

48. Il s'agit des infractions de financement du terrorisme au sens strict (formel). Dans une acception plus large, il est possible d'y ajouter l'article 83.08 C.cr., qui interdit en particulier d'effectuer sciemment une opération portant sur des biens qui appartiennent à un groupe terroriste; l'article 83.18 C.cr., qui interdit de participer ou de contribuer sciemment à une activité d'un groupe terroriste; l'article 83.19 C.cr., qui interdit de faciliter sciemment une activité terroriste; l'article 83.21 C.cr., qui interdit, notamment, de charger sciemment une personne de se livrer à une activité au profit d'un groupe terroriste; et l'article 83.22 C.cr., qui interdit de charger sciemment une personne de se livrer à une activité terroriste.

Est coupable d'un acte criminel passible d'un emprisonnement maximal de dix ans quiconque, directement ou non, réunit des biens ou fournit — ou invite une autre personne à le faire — ou rend disponibles des biens ou des services financiers ou connexes :

- a) soit dans l'intention de les voir utiliser — ou en sachant qu'ils seront utilisés —, en tout ou en partie, pour une activité terroriste, pour faciliter une telle activité ou pour en faire bénéficier une personne qui se livre à une telle activité ou la facilite;
- b) soit en sachant qu'ils seront utilisés, en tout ou en partie, par un groupe terroriste ou qu'ils bénéficieront, en tout ou en partie, à celui-ci.

32. L'article 83.04 C.cr. incrimine le fait d'«utiliser ou [d']avoir en sa possession des biens à des fins terroristes » :

Est coupable d'un acte criminel passible d'un emprisonnement maximal de dix ans quiconque, selon le cas :

- a) utilise directement ou non, en tout ou en partie, des biens pour une activité terroriste ou pour la faciliter;
- b) a en sa possession des biens dans l'intention de les voir utiliser — ou en sachant qu'ils seront utilisés — directement ou non, en tout ou en partie, pour une activité terroriste ou pour la faciliter.

4.1.2 Les éléments matériels

33. Les éléments matériels des trois infractions sont définis de manière à embrasser un spectre très large de relations avec des terroristes, certaines n'étant rattachées que de manière ténue à une activité exercée par ces derniers⁴⁹. Tout lien économique avec une « activité terroriste » est susceptible de tomber sous le coup de l'une ou l'autre des dispositions. Ces dernières s'appliquent aussi bien à un magasin qui vend du lait à une « personne qui facilite une activité terroriste », qu'au coiffeur coupant les cheveux d'une telle personne ou au

49. Kevin DAVIS, « Cutting off the Flow of Funds to Terrorists : Whose Funds? Which Funds? Who Decides? », dans R. DANIELS, P. MACKLEM, K. ROACH (dir.), préc., note 43, p. 299, à la p. 301.

restaurateur qui sert un repas aux membres d'un « groupe terroriste », sans égard à l'ampleur de la contribution matérielle aux buts poursuivis par la personne ou le groupe en question. De ce point de vue là, elles vont au-delà de ce qu'exige la *Convention internationale pour la répression du financement du terrorisme* qu'elles sont censées mettre en application et qui requiert l'incrimination de la fourniture ou de la réunion de fonds, mais pas de toute activité économique ayant un lien plus ou moins lointain avec le terrorisme⁵⁰.

34. Les expressions « fournit » (« *provides* ») et « rend disponible » (« *makes available* ») figurant à l'article 83.03 C.cr. semblent suffisamment vastes pour concerner des personnes qui fournissent, sur une simple base commerciale, des biens à des fins prohibées. En d'autres termes, elles ne paraissent pas devoir s'appliquer uniquement à ceux qui donnent des biens pour un usage en lien avec le terrorisme, mais également à toute personne qui vend ou loue ceux-ci pour un usage en lien avec le terrorisme, à des conditions commercialement raisonnables⁵¹.

35. L'alinéa 83.04 (b) C.cr. pose une règle qui va au-delà de ce que prévoit la *Convention internationale pour la répression du financement du terrorisme*⁵². Elle n'impose pas à l'accusation de démontrer qu'un bien quelconque a effectivement été fourni à une personne engagée dans une activité terroriste ou qui la facilite. De plus, à la différence des articles 83.02 et 83.03 C.cr. qui font référence à une personne qui « réunit » (« *collects* ») des biens pour un but similaire, l'alinéa 83.04 (b) C.cr. ne demande pas à la Couronne d'établir que la personne inculpée a commis un quelconque acte manifeste pour concrétiser son intention illicite. Elle doit seulement apporter la preuve que l'accusé était en possession des biens — par opposition à fournir, réunir ou utiliser — même si cette possession

50. Maureen WEBB, « Essential Liberty or a Little Temporary Safety? The Review of the Canadian Anti-Terrorism Act », (2006) 51 *The Criminal Law Quarterly* 53, 69.

51. K. DAVIS, préc., note 49, à la p. 301.

52. L'article 2 chiffre 1 de la Convention exige que les États incriminent la fourniture ou la réunion de fonds. Le chiffre 5 sanctionne également celui qui participe en tant que complice à l'infraction, organise sa commission (ou donne l'ordre à d'autres personnes de la commettre) ou contribue à sa commission par un groupe de personnes agissant de concert.

était antérieure à l'intention délictueuse. Par exemple, théoriquement, le propriétaire d'un restaurant pourrait engager sa responsabilité pénale dès qu'il accepterait une réservation de terroristes connus, s'il avait l'intention de voir son établissement utilisé, ou s'il savait que celui-ci serait utilisé, par ces délinquants pour discuter d'activités terroristes pendant le repas⁵³.

36. Sous réserve de la connaissance coupable et de l'intention requises, de nombreux objets peuvent être source de responsabilité pénale : « Ce peut être une arme de poing, une substance explosive, un téléphone cellulaire, un ordinateur, un faux papier d'identification [...]. Quant aux services financiers, l'utilisation de l'un ou l'autre des multiples moyens d'échange ou transit d'argent peut également devenir incriminant »⁵⁴.

37. L'article 83 (03) C.cr. n'incrimine pas uniquement le financement d'une activité terroriste, mais également le financement de toute « personne qui se livre à une telle activité ou la facilite » ou d'un « groupe terroriste ». Il est certes raisonnable de présumer que financer une personne qui participe à une activité terroriste implique une relation causale avec l'activité terroriste subséquente. Toutefois, dans certains cas, l'hypothèse ne se vérifie pas, le lien n'existant pas ou étant trop ténu. Par exemple, dans le cas du restaurateur exposé précédemment, si celui-ci sert un plat à une personne sachant qu'elle a participé à une activité terroriste, il pourrait se voir sanctionné pour avoir fourni un bien en sachant qu'il sera utilisé, en tout ou partie, pour en faire bénéficier une personne qui se livre à une telle activité ou la facilite, au sens de l'alinéa 83.03 (a) C.cr. Or, le lien entre l'acte du propriétaire du restaurant et l'activité terroriste ultérieure est très incertain ou, s'il existe effectivement, très mince⁵⁵.

4.1.3 Les éléments moraux

38. Sur le plan subjectif, l'accusé doit avoir su que le bien serait utilisé pour le terrorisme. Les personnes qui soutiennent

53. K. DAVIS, préc., note 49, p. 301 et 302.

54. Jean-Claude HEBERT, *Droit pénal des affaires*, Cowansville (Québec), Éditions Yvon Blais, 2002, p. 181.

55. K. DAVIS, préc., note 49, p. 302 et 303.

une organisation, mais qui ne soupçonnent pas que tout ou partie de l'argent qu'ils donnent sera détourné pour le financement d'une violence politique ou religieuse, ne sont pas punissables. Cette restriction protège ceux qui financent le terrorisme à leur insu, mais elle rend aussi plus délicate la tâche des autorités de poursuite. Cependant, lorsqu'un groupe a été inscrit comme entité terroriste, il est plus difficile pour un prévenu d'arguer qu'il ignorait que les montants qu'il lui a alloués seraient utilisés, partiellement ou totalement, en faveur du terrorisme⁵⁶.

39. La rédaction de l'article 83.02 C.cr. diffère des deux autres dispositions mentionnées, en exigeant que l'auteur ait agi « délibérément et sans justification » (« *wilfully and without lawful justification* »), tout comme la *Convention pour la répression du financement du terrorisme* qui énonce, à son article 2 chiffre 1, que la personne doit avoir agi « illicitement et délibérément ». Les raisons et implications de ce manque d'uniformité entre les trois formulations légales ne sont pas claires⁵⁷.

40. Parfois, la preuve qu'un accusé a réalisé les éléments matériels amène à admettre que les éléments moraux requis sont aussi présents. Cette manière de procéder est permise dans des procédures pénales en raison de la difficulté à obtenir la preuve directe de l'état intérieur d'un accusé. Mais, considérer que la preuve de la réalisation de l'élément matériel implique celle de l'élément moral va à l'encontre de la règle qui prévoit que ce dernier est une condition autonome de la réalisation de l'infraction⁵⁸.

4.2 EN DROIT SUISSE

4.2.1 La disposition du *Code pénal*

41. L'article 260^{quinquies} CPS (« Financement du terrorisme ») a la teneur suivante :

56. Kent ROACH, *September 11. Consequences for Canada*, Montréal & Kingston, London, Ithaca, McGill-Queen's University Press, 2003, p. 39.

57. K. DAVIS, préc., note 49, à la p. 304.

58. *Id.*, p. 304 et 305.

1. Celui qui, dans le dessein de financer un acte de violence criminelle visant à intimider une population ou à contraindre un État ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque, réunit ou met à disposition des fonds, sera puni d'une peine privative de liberté de cinq ans au plus ou d'une peine pécuniaire.
2. Si l'auteur n'a fait que s'accommoder de l'éventualité que les fonds en question servent à financer un acte terroriste, il n'est pas punissable au sens de la présente disposition.
3. L'acte n'est pas considéré comme financement du terrorisme lorsqu'il vise à instaurer ou à rétablir un régime démocratique ou un État de droit, ou encore à permettre l'exercice des droits de l'homme ou la sauvegarde de ceux-ci.
4. L'al. 1 ne s'applique pas si le financement est destiné à soutenir des actes qui ne sont pas en contradiction avec les règles du droit international applicable en cas de conflit armé.

4.2.2 Les éléments objectifs

42. Les éléments constitutifs objectifs de l'infraction sont l'acte terroriste, ainsi que la réunion et la mise à disposition de fonds. Réunir des fonds signifie collecter des valeurs patrimoniales⁵⁹, les rassembler pour une utilisation future, sans qu'un transfert effectif soit exigé. La mise à disposition correspond au transfert de celles-ci⁶⁰. L'administration de ces valeurs tombe également sous le coup de la disposition lorsque son but est de permettre l'utilisation des fonds à des fins terroristes⁶¹. La notion d'administration recouvre la

59. La notion de « valeurs patrimoniales » est souvent utilisée par le législateur pénal, en particulier en matière de confiscation. Elle est suffisamment générale pour recouvrir celle de « fonds » énoncée à l'article 1 chiffre 1 de la *Convention pour la répression du financement du terrorisme*. Elle englobe tous les avantages économiques appréciables en argent. Ces valeurs ne se limitent pas aux choses matérielles telles que l'argent en espèce ou les pierres précieuses, mais comprennent aussi les droits réels limités, les créances, les papiers-valeurs et les droits immatériels (voir, par exemple, l'arrêt du Tribunal fédéral du 19 février 2001, 6S.667/2000, considérant 2b et les références jurisprudentielles citées).

60. J. GAFNER, préc., note 19, p. 200.

61. Message du Conseil fédéral du 26 juin 2002, préc., note 39, à la p. 5065.

gestion, le dépôt et toute intervention qui permet ou facilite l'accès à des ressources devant être affectées à des objectifs terroristes⁶².

43. Le financement du terrorisme est une infraction de dessein⁶³. Il n'est pas nécessaire que les valeurs patrimoniales aient effectivement été utilisées dans le cadre d'un acte terroriste pour qu'elle soit réalisée⁶⁴ : dès que l'auteur a réuni ou mis à disposition les fonds, l'infraction est consommée. Il en va de même, par exemple, pour la corruption active d'agents publics étrangers (art. 322^{septies}, al. 1 CPS) où l'auteur est punissable dès qu'il a offert, promis ou octroyé un avantage indu à un agent public étranger pour que celui-ci viole ses devoirs ou use de son pouvoir d'appréciation. L'acte visé, en relation avec l'activité officielle, ne doit pas nécessairement avoir été exécuté ou omis⁶⁵.

4.2.3 Les éléments subjectifs

44. Les éléments subjectifs sont l'intention⁶⁶ et le dessein de financer l'activité terroriste. Il suffit que l'auteur sache et veuille financer un acte terroriste, même s'il n'a pas d'idée exacte d'en quoi il consiste et peu importe que les fonds soient effectivement, *in fine*, utilisés par les terroristes pour perpétrer un acte de violence criminel⁶⁷. Par contre, celui qui réunit ou met à disposition des fonds en ignorant par

62. J. GAFNER, préc., note 19, p. 201.

63. En allemand, « *Absichtsdelikt* » ou « *Delikt mit überschüssender Innentendenz* ».

64. Andreas DONATSCH, Wolfgang WOHLERS, *Strafrecht IV. Delikte gegen die Allgemeinheit*, 3^e éd., Zurich, Bâle, Genève, Schulthess, 2004, § 48, p. 201 et 202; Gerhard FIOJKA, dans Marcel Alexander NIGGLI, Hans WIPRÄCHTIGER, *Basler Kommentar. Strafrecht II*, 2^e éd., Bâle, Helbing Lichtenhahn, 2007, n^o 13 ad art. 260^{quinquies} CPS, p. 1731, à la p. 1736.

65. Bertrand PERRIN, *La répression de la corruption d'agents publics étrangers en droit pénal suisse. Étude de l'article 322^{septies} du Code pénal et de ses enjeux procéduraux*, Bâle, Helbing Lichtenhahn, 2008, p. 208-210.

66. « Agit intentionnellement quiconque commet un crime ou un délit avec conscience et volonté » (art. 12, al. 2 CPS).

67. B. CORBOZ, préc., note 44, n^o 32 ad art. 260^{quinquies} CPS, p. 355 et 356.

négligence⁶⁸ que ces valeurs patrimoniales emprunteront un canal terroriste n'est pas punissable⁶⁹.

4.3 COMPARAISON

45. En prévoyant à l'article 260^{quinquies}, alinéa 2 CPS que « si l'auteur ne fait que s'accommoder de l'éventualité que les fonds en question servent à financer un acte terroriste, il n'est pas punissable au sens de la présente disposition », le législateur helvétique a exclu expressément la commission de l'infraction par dol éventuel. Cette notion est proche de celle d'insouciance (*recklessness*) en droit canadien. Comme nous le montrerons, ce dernier permet une incrimination plus large que le droit suisse et consacre, ainsi, une solution plus pertinente⁷⁰.

46. L'article 260^{quinquies} CPS sanctionne le soutien financier à un acte terroriste précis. Le droit canadien permet une incrimination plus large, ce qui est préférable. Ici aussi, il s'agit d'un enjeu particulièrement important qui mérite que nous lui consacrons un chapitre spécifique⁷¹.

5. LA JURISPRUDENCE

5.1 LES STATISTIQUES

47. En 2009, aucun jugement n'avait encore été rendu sur la base de l'article 260^{quinquies} CPS (statistiques judiciaires)⁷². Une seule infraction, dans toute la Suisse, a été enregistrée par la police en 2009 et aucune en 2010 (statistiques policières)⁷³.

68. « Agit par négligence quiconque, par une imprévoyance coupable, commet un crime ou un délit sans se rendre compte des conséquences de son acte ou sans en tenir compte. L'imprévoyance est coupable quand l'auteur n'a pas usé des précautions commandées par les circonstances et par sa situation personnelle » (art. 12, al. 3 CPS).

69. A. DONATSCH, W. WOHLERS, préc., note 64, § 48, p. 202.

70. *Infra*, chapitre 6.4.

71. *Infra*, chapitre 6.5.

72. OFFICE FÉDÉRAL DE LA STATISTIQUE, « Code pénal — condamnations selon articles du CP », [En ligne]. <http://www.bfs.admin.ch/bfs/portal/fr/index/themen/19/03/02/key/01.html> (Page consultée le 3 octobre 2011). Pas encore de statistiques pour 2010 et 2011.

73. *Ibid.*

48. Le 21 mars 2011, la Cour d'appel de la Colombie-Britannique a rejeté une présentation de la Couronne visant à accroître une condamnation de six mois, prononcée pour la première fois au Canada dans le cadre d'une accusation de financement du terrorisme⁷⁴. Nous allons brièvement présenter les deux jugements rendus dans cette affaire. Puisque la question centrale qui y est examinée est celle de la détermination de la peine, nous analyserons ensuite quelles sont les règles en la matière dans les deux ordres juridiques.

5.2 L'AFFAIRE THAMBAITHURAI

49. Prapaharan Thambathurai est arrivé à Vancouver le 11 mars 2008. Deux jours plus tard, les Équipes intégrées de la sécurité nationale de la Gendarmerie royale du Canada ont entrepris une enquête contre lui pour financement du terrorisme au sens de l'article 83.03 C.cr. en faveur des Tigres de libération de l'Eelam tamoul, organisation qui était inscrite sur la liste des entités terroristes, en vertu de l'article 83.05 C.cr., depuis avril 2006. Le 13 mars 2008, Prapaharan Thambathurai obtint 600 dollars d'un donateur et reçut également une promesse pour 300 dollars d'une autre personne. Il avoua aux enquêteurs qu'il était venu en Colombie-Britannique pour réunir des fonds et qu'il avait collecté entre 2 000 et 3 000 dollars depuis fin 2007.

50. Dans ses « *oral reasons for sentence* »⁷⁵, le 14 mai 2010, le juge Powers ne s'est pas livré à un examen détaillé de l'article 83.03 C.cr. Il a constaté que l'accusé avait plaidé coupable⁷⁶ d'avoir réuni des biens au sens de cette disposition, en l'occur-

74. CENTRE D'ANALYSE DES OPÉRATIONS ET DÉCLARATIONS FINANCIÈRES DU CANADA, préc., note 11, p. 12 et 13. Par contre, plusieurs jugements en matière de terrorisme en dehors de la problématique de son financement ont déjà été rendus. Voir par exemple, récemment : *R. v. Khawaja*, 2010 ONCA 862.

75. *R. v. Thambathurai*, 2010 BCSC 1949.

76. Prapaharan Thambathurai a admis les faits sur la base de l'article 655 C.cr., qui énonce que « lorsqu'un accusé subit son procès pour un acte criminel, lui-même ou son avocat peut admettre tout fait allégué contre l'accusé afin de dispenser d'en faire la preuve ». Supreme Court of British Columbia, *Her Majesty the Queen v. Prapaharan Thambathurai*, Admissions of Fact, Court File No. 24958-1, Vancouver Registry (29 avril 2010), [En ligne]. <http://nationalpostnews.files.wordpress.com/2010/05/thambathurai-edited-admissions-of-fact.pdf> (Page consultée le 3 octobre 2011).

rence de l'argent, en sachant qu'il serait utilisé en tout ou partie pour un groupe terroriste. Le juge s'est focalisé sur la question de la détermination de la peine en soulignant que c'était la première fois qu'un jugement était rendu sur la base de l'article 83.03 C.cr. et qu'il ne pouvait, par conséquent, pas s'appuyer sur des précédents pour fixer la sanction appropriée. Alors que la Couronne requerrait une peine de deux ans d'emprisonnement, le juge condamna le prévenu à six mois. Le 21 mars 2011, la Cour d'appel de la Colombie-Britannique a rejeté une présentation de la Couronne visant à alourdir la sentence⁷⁷.

5.3 LA DÉTERMINATION DE LA PEINE EN MATIÈRE DE FINANCEMENT DU TERRORISME

5.3.1 En droit canadien

51. Dans son arrêt, le juge Powers s'est fondé en particulier sur les articles 718 C.cr. (« Objectif », « *Purpose* »)⁷⁸, 718.1 C.cr. (« Principe fondamental », « *Fundamental principle* »)⁷⁹ et 718.2 C.cr. (« Principes de détermination de la peine », « *Other sentencing principles* »). Ceux-ci sont intégrés à la Partie XXIII du *Code criminel*, consacrée à la détermination de la peine⁸⁰.

52. En substance, les considérations prises en compte par le juge furent les suivantes⁸¹ :

— Il n'existe pas de peine minimale pour l'infraction définie à l'article 83.03 C.cr. et le plafond fixé par le législateur se situe à dix ans d'emprisonnement.

77. *R. v. Thambathurai*, 2011 BCCA 137.

78. La sanction vise notamment à « dénoncer le comportement illégal » (alinéa (a)) et à « dissuader les délinquants, et quiconque, de commettre des infractions » (alinéa (b)).

79. « La peine est proportionnelle à la gravité de l'infraction et au degré de responsabilité du délinquant ».

80. Précisons en outre que l'article 83.26 C.cr. énonce que « la peine — sauf une peine d'emprisonnement à perpétuité — infligée à une personne pour une infraction prévue à l'un des articles 83.02 à 83.04 [...] est purgée consécutivement : a) à toute peine — sauf une peine d'emprisonnement à perpétuité — sanctionnant une autre infraction basée sur les mêmes faits; b) à toute autre peine — sauf une peine d'emprisonnement à perpétuité — en cours d'exécution infligée à une personne pour une infraction prévue à l'un de ces articles ».

81. *R. v. Thambathurai*, préc., note 75, par. 10 et suiv.

- Selon l'accusation, les objectifs centraux de la procédure étaient la dénonciation du comportement illégal et la dissuasion. Les dispositions du *Code criminel* relatives au terrorisme concernent des agissements qui peuvent produire des impacts significatifs et déterminants sur la manière dont les membres de la société vivent. *In casu*, chaque petit montant représentait une contribution à un préjudice grave. Le prévenu était en outre en possession d'un matériel de propagande important. Le schéma mis en place pour recueillir les fonds était sophistiqué, ce qui confirmait qu'il savait que les bénéfices que les Tigres en retiraient n'étaient pas d'importance secondaire.
- À décharge, la défense a rappelé que le prévenu n'avait pas de casier judiciaire, qu'il avait accepté de plaider coupable et que cela indiquait qu'il avait du remords. Elle mit également en évidence les points positifs de son existence, notamment qu'il s'était montré, jusqu'alors, respectueux de la loi en s'impliquant dans la vie économique. Depuis sa mise en liberté, il s'était comporté de manière exemplaire. Elle a également souligné que les Tigres n'existaient plus et qu'ils ne représentaient donc plus une menace pour la collectivité⁸². Les montants collectés étaient relativement faibles et les actes s'étaient déroulés au pied de la pyramide de financement. L'affaire, en raison de sa forte médiatisation, avait aussi causé d'importants désagréments au prévenu. La défense a toutefois admis que, selon le sous-alinéa 718.2 (a) (v) C.cr., la perpétration d'une infraction de terrorisme représente une circonstance aggravante.
- Le juge a finalement retenu que l'infraction était grave. Le prévenu avait peut-être espéré que l'argent serait utilisé à des fins humanitaires, mais il acceptait que celui-ci puisse aussi aider les Tigres. Il était au courant du rôle de ces derniers. Le tribunal n'a pas considéré qu'il existait des preuves des ennuis causés au prévenu par l'attention médiatique. Il a ajouté que le fait qu'il ait plaidé coupable ne traduisait pas un remords ou la reconnaissance de la

82. En mai 2009, le gouvernement du Sri Lanka déclara avoir réussi à vaincre les Tigres.

gravité de l'infraction. Il a souligné qu'un terroriste est une personne qui a décidé que les buts qu'elle poursuit justifient tous les moyens. Pour le juge, toutefois, la peine de deux ans requise par la Couronne était trop élevée, prenant en considération le bon caractère du prévenu et tenant compte du montant faible des sommes réunies ou promises. Il n'existait, en outre, aucune preuve que le prévenu ait recouru à des menaces ou contraintes pour solliciter les sommes d'argent. Les lois contre le terrorisme sont l'un des moyens pour protéger les droits, la liberté et la stabilité qui font du Canada un bon endroit pour vivre. Selon le juge, une peine juste doit exercer un effet dissuasif sur le prévenu ou toute autre personne et dénoncer le comportement illégal. Enfin, il conclut en précisant que la sanction doit être proportionnée à la culpabilité morale du prévenu et non pas uniquement répressive ou sévère simplement parce qu'elle concerne une infraction de terrorisme. Si telle avait été la volonté du pouvoir législatif, celui-ci aurait prévu une peine minimale.

53. Dans le jugement rendu en appel, deux points méritent d'être soulignés :

— Premièrement, la juge Neilson se réfère à quatre arrêts rendus en Ontario dans des affaires de terrorisme⁸³. Les faits étaient significativement différents de ceux qui étaient au cœur de la procédure dans *Thambaiturai*, puisque les délinquants étaient directement impliqués dans des infractions terroristes visant une destruction aveugle et généralisée. Bien que la différence des contextes limite leur valeur de précédent, ces décisions sont néanmoins instructives pour la détermination de la peine en matière de financement du terrorisme. Citant la jurisprudence de l'arrêt *R. v. Khawaja*, la juge Neilson précise que le terrorisme constitue une catégorie distincte d'activité criminelle, notamment parce qu'il est motivé par une idéologie rigide et intolérante, plutôt que par un appât du gain, la colère ou la vengeance⁸⁴. Elle rappelle le cadre

83. *R. v. Khawaja*, préc., note 74; *R. v. Amara*, 2010 ONCA 858; *R. v. Gaya*, 2010 ONCA 860; *R. v. Khalid*, 2010 ONCA 861.

84. *R. v. Thambaiturai*, préc., note 77, par. 19 et *R. v. Khawaja*, *id.*, par. 231-236.

qui avait été posé dans l'arrêt *Khawaja* pour sanctionner les infractions terroristes⁸⁵. La détermination de la peine pour les terroristes implique de prendre en considération trois facteurs : tout d'abord, la nature unique des infractions sanctionnant le terrorisme et le danger particulier qu'elles font courir à la société canadienne; ensuite, le degré de danger continu que représente le délinquant pour la société; enfin, la nécessité pour la peine d'envoyer un message clair à ceux qui voudraient se livrer à des activités terroristes, montrant que le Canada n'est pas un endroit sûr pour poursuivre leurs desseins. La juge Neilson souligne que même si ces critères ne s'imposaient pas au premier juge, elle se félicite qu'il les ait malgré tout appliqués. Elle confirme que la dénonciation du comportement illégal et la dissuasion sont les premiers éléments à prendre en considération pour déterminer la peine⁸⁶.

- Deuxièmement, le degré de danger continu que représente le délinquant pour la société est un facteur qui pose des difficultés particulières dans le domaine du terrorisme. Par définition, les infractions en la matière sont souvent motivées par des buts de nature politique, religieuse ou idéologique. Ces croyances sont souvent immuables. Ainsi, dans le cas de Prapaharan Thambathurai, le manque de remords n'était peut-être pas surprenant, en raison de son héritage tamoul, l'impact de la guerre sur sa famille et sa préoccupation constante pour la terrible situation dans laquelle était plongée la population au Sri Lanka. Le premier juge en a conclu qu'il ne représentait pas un danger terroriste persistant étant donné son bon caractère. En outre, à l'époque où le prévenu a été déféré en justice, le risque représenté par le financement des Tigres était plus faible en raison des événements survenus au Sri Lanka, c'est-à-dire avec la victoire proclamée des autorités gouvernementales sur ceux-ci⁸⁷.

54. En conclusion, la Cour d'appel explique que les infractions terroristes, bien que revêtant des caractéristiques uniques, sont régies, en matière de détermination de la peine,

85. *R. v. Thambathurai, id.*, par. 20 et *R. v. Khawaja, id.*, par. 192.

86. *R. v. Thambathurai, id.*, par. 21.

87. *Id.*, par. 22.

par le même cadre et les mêmes objectifs que ceux applicables aux autres infractions prévues par le *Code criminel*⁸⁸. Elle rejoint l'avis du premier juge et rejette donc l'appel.

5.3.2 En droit suisse

55. L'article 47 CPS pose le principe de la fixation de la peine. Il a la teneur suivante :

1. Le juge fixe la peine d'après la culpabilité de l'auteur. Il prend en considération les antécédents et la situation personnelle de ce dernier ainsi que l'effet de la peine sur son avenir.
2. La culpabilité est déterminée par la gravité de la lésion ou de la mise en danger du bien juridique concerné, par le caractère répréhensible de l'acte, par les motivations et les buts de l'auteur et par la mesure dans laquelle celui-ci aurait pu éviter la mise en danger ou la lésion, compte tenu de sa situation personnelle et des circonstances extérieures.

56. Les critères sont énumérés de manière non exhaustive. L'élément principal est la culpabilité de l'auteur (gravité de la faute)⁸⁹. Celle-ci est évaluée en fonction de tous les éléments objectifs pertinents : la gravité de la lésion ou de la mise en danger du bien juridique, le caractère répréhensible de l'acte et son mode d'exécution. Sur le plan subjectif, l'intensité de la volonté délictuelle, les motivations et les buts de l'auteur sont pris en considération. À ces composantes de la culpabilité, il convient d'ajouter les facteurs liés à l'auteur lui-même, c'est-à-dire les antécédents, judiciaires ou non, la réputation, la situation personnelle, comme l'état de santé ou le risque de récidive, la vulnérabilité face à la peine, ainsi que le comportement après l'acte et pendant la procédure pénale⁹⁰. Le tribunal dispose d'un large pouvoir d'appréciation.

88. *Id.*, par. 24.

89. Pour les peines pécuniaires, le nombre de jours-amende est également fixé en fonction de la culpabilité de l'auteur (art. 34, al. 1 CPS). Le montant est ensuite déterminé en fonction de la situation personnelle et économique de l'auteur au moment du jugement (art. 34, al. 2 CPS).

90. Arrêt du Tribunal fédéral du 17 février 2011 6B_722/2010, considérant 1.2.2; ATF 129 IV 6, 20, considérant 6.1.

57. Le juge suisse doit toujours garder à l'esprit les buts visés par la peine. Dans deux arrêts de principe⁹¹, le Tribunal fédéral a donné clairement la primauté à la prévention spéciale (réinsertion et évitement de la récidive) sur la prévention générale (exemplarité et dissuasion du public)⁹². Au moment de fixer la sanction, le magistrat doit en particulier veiller à ce que la peine prononcée ne fasse pas obstacle à l'évolution favorable du développement du condamné. Toutefois, cet aspect de prévention spéciale n'autorise que des corrections marginales, la peine devant rester proportionnée à la faute⁹³.

5.3.3 Comparaison

58. En droit suisse, il n'existe pas de règle spécifique pour fixer la peine en matière de financement du terrorisme. Les critères sont les mêmes que pour les autres infractions. La règle est donc identique à celle fixée par la Cour d'appel dans l'affaire *Thambaithurai*. Par contre, contrairement au droit canadien, le législateur n'a pas prévu que le financement du terrorisme représente une circonstance aggravante spéciale. Le juge doit donc raisonner uniquement en appliquant les règles établies par l'article 47 CPS⁹⁴.

59. Comme aucune décision n'a encore été rendue en Suisse et que la Cour suprême canadienne ne s'est pas encore prononcée sur le sujet, il n'est pas possible de tirer de conclusions définitives. Nous pouvons simplement constater que dans les deux ordres juridiques, le critère de la dissuasion joue un rôle central. Cette solution est tout à fait soutenable et n'exige pas de commentaires particuliers, la peine en droit pénal devant,

91. ATF 118 IV 337 et ATF 118 IV 342.

92. Nicolas QUELOZ, Valérie HUMBERT, « Fixation et motivation de la peine », dans Robert ROTH, Laurent MOREILLON (dir.), *Commentaire romand. Code pénal I*, Bâle, Helbing Lichtenhahn, 2009, n° 9 ad art. 47 CPS, p. 456, à la p. 459.

93. Arrêt du Tribunal fédéral 6B_14 2007 du 17 avril 2007, considérant 5.2.

94. L'article 48 CPS prévoit des circonstances atténuantes, par exemple lorsque l'auteur a agi sous l'ascendant d'une personne à laquelle il devait obéissance ou de laquelle il dépendait (art. 48 let. a ch. 4 CPS). Le concours, idéal ou réel, est une circonstance aggravante prévue à l'article 49 CPS. Dans ce cas, le juge condamne l'auteur « à la peine de l'infraction la plus grave et l'augmente dans une juste proportion. Il ne peut toutefois excéder de plus de la moitié le maximum de la peine prévue pour cette infraction » (art. 49, al. 1 CPS).

avant tout, poursuivre un but de prévention, générale et spéciale. Aucun motif valable ne plaide pour une règle différente en matière de financement du terrorisme.

6. PROLÉGOMÈNES À UNE DÉFINITION *DE LEGE FERANDA* DU FINANCEMENT DU TERRORISME

6.1 L'OBJECTIF

60. Après avoir exposé les principales caractéristiques des éléments constitutifs des infractions de financement du terrorisme dans les deux ordres juridiques, nous allons à présent nous concentrer sur les questions controversées qui ont animé le débat doctrinal ou politique dans les deux pays. L'objectif est de proposer une définition pénale du financement du terrorisme qui tienne compte des réflexions menées de part et d'autre de l'Atlantique, dans le but ultime d'aboutir à une application plus réaliste et efficace du droit pénal. Un tel exercice ne peut forcément représenter qu'une réponse partielle à la problématique. Pour parvenir à des conclusions plus définitives, il faudrait au moins intégrer des questions de procédure pénale, notamment celles des pouvoirs d'enquête des autorités de poursuite ou de la saisie des fonds, et disposer de points de comparaison avec de plus nombreux pays. Notre démarche se veut donc une contribution à l'élaboration d'une définition du terrorisme et de son financement qui s'inscrit forcément dans une perspective beaucoup plus globale.

6.2 UNE INCRIMINATION AUTONOME DU TERRORISME?

61. Dans son projet législatif, le gouvernement suisse avait proposé d'incriminer le terrorisme en tant que tel sur la base d'un article 260^{quinquies} CPS, son financement devant être sanctionné par un article 260^{sexies} CPS⁹⁵. Le Parlement a finalement renoncé à cette option, estimant que les infractions existantes, telles que l'assassinat (art. 112 CPS), la séquestration et l'enlèvement (art. 183 CPS), la prise d'otages

95. Message du Conseil fédéral du 26 juin 2002, préc., note 39, p. 5062 et suiv.

(art. 185 CPS) ou le génocide (art. 264 CPS) permettaient déjà aux autorités de lutter avec efficacité contre les actes terroristes⁹⁶. « L'utilité d'une telle incrimination était pour le moins douteuse, car les infractions commises par les terroristes constituaient d'ores et déjà des crimes graves [...]. La nouvelle incrimination aurait, au mieux, fait double emploi avec ces infractions spécifiques »⁹⁷.

62. Au Canada, le débat fut le même. Par exemple, le professeur Don Stuart, de la Faculté de droit de l'Université Queen's, entendu en qualité de témoin par le Comité sénatorial spécial sur le projet de loi C-36, déclara que les lois alors en vigueur suffisaient pour combattre le terrorisme : « Ceux d'entre nous qui réfléchissent depuis des années au principe sur lequel repose le droit pénal et qui enseignent cette discipline, ne voient absolument aucune raison de créer de nouveaux crimes pour lutter contre le terrorisme »⁹⁸. Kent Roach, dans l'un de ses articles, souligna le nombre important de dispositions légales qui existaient déjà⁹⁹ et permettaient d'appréhender le phénomène terroriste sous ses différentes facettes¹⁰⁰. Malgré tout, le Parlement canadien décida finalement d'incriminer l'activité terroriste pour elle-même.

63. Le terrorisme est essentiellement un concept à caractère politique et médiatique. Il relève donc, avant tout, des sciences politiques et de la politique de communication. « De surcroît, le choix d'inclure tous les éléments dans la définition ou d'en exclure certains est également un acte politique. Le terrorisme ne devient dès lors un objet criminologique

96. Note de synthèse 02.052 du Parlement fédéral relative à la ratification des *Conventions des Nations Unies pour la répression du financement du terrorisme et des attentats à l'explosif*, [En ligne]. http://www.parlament.ch/f/suche/pages/legislaturrueckblick.aspx?rb_id=20020052 (Page consultée le 3 octobre 2011).

97. U. CASSANI, préc., note 41, 295.

98. CANADA, SÉNAT, *Délibérations du Comité sénatorial spécial sur le Projet de loi C-36*, procès-verbaux, 1^{re} sess., 37^e légis., fascicule n° 8, 5 décembre 2001, p. 58, [En ligne]. <http://www.parl.gc.ca/Content/SEN/Committee/371/sm36/pdf/08issue.pdf> (Page consultée le 3 octobre 2011).

99. Par exemple, le meurtre (art. 230 C.cr.), le détournement d'aéronefs (art. 76 C.cr.), l'atteinte à la sécurité des aéronefs ou des aéroports (art. 77 C.cr.), l'administration d'un poison ou d'une substance destructive (art. 245 C.cr.), le sabotage (art. 52 C.cr.), les lésions corporelles (art. 269 C.cr.), l'enlèvement (art. 279 C.cr.) ou la prise d'otages (art. 279.1 C.cr.).

100. K. ROACH, préc., note 43, p. 152-154.

qu'après avoir passé par les filtres politiques et médiatiques »¹⁰¹. Renoncer à incriminer le terrorisme de manière autonome permet au législateur de faire l'économie d'un débat politique complexe, profondément controversé. Il est aussi difficile pour le juge pénal d'interpréter et d'appliquer ce concept marqué par l'idéologie. D'ailleurs, sur le plan international, l'adoption des conventions sectorielles est en grande partie le résultat de l'incapacité d'élaborer un instrument général de lutte contre le terrorisme reposant sur une définition consensuelle.

64. D'un autre point de vue, incriminer un comportement est un acte symboliquement fort. Le législateur indique quel bien il souhaite protéger pénalement et donc quelles sont les valeurs qu'il veut défendre. Cette dimension revêt une importance qu'il convient de ne pas sous-estimer. Un État qui punit le terrorisme témoigne de sa détermination à combattre ce fléau. Sous un angle très pratique, la présence d'une disposition qui sanctionne le terrorisme parallèlement à d'autres infractions punissant les actes de violence criminels dans un code pénal peut être conçue comme un complément plutôt que comme un élément superfétatoire. Si l'accusation n'arrive pas à prouver que les éléments constitutifs de l'activité terroriste sont réalisés en raison de la complexité définitionnelle de l'infraction ou de problèmes de preuve, elle peut tenter de « se replier » sur des incriminations plus « classiques » qui posent, dans le cas en question, moins de problèmes d'application. Si le délinquant est finalement condamné pour meurtre ou assassinat plutôt que pour terrorisme, l'effet préventif est sauf.

65. Selon nous, savoir s'il faut incriminer le terrorisme de manière autonome ne représente pas un enjeu fondamental. L'essentiel est qu'un État dispose d'un arsenal répressif lui permettant de punir les différentes facettes du phénomène. Par contre, la question de sa définition reste posée, notamment parce que, pour sanctionner le financement du terrorisme, il faut forcément savoir en quoi consiste ce dernier. Le problème de l'interprétation de cet élément constitutif n'est

101. André KUHN, « Terrorisme scientifique », (2002) 1 *Revue suisse de criminologie* 23, 24.

alors que déplacé. Or, punir le financement du terrorisme nous semble important. Il est vrai que certains rappellent que la terreur est bon marché et que par conséquent l'élément financier ne constituerait pas le nœud du problème dans le domaine du terrorisme¹⁰². Pourtant, la preuve de l'inefficacité des mesures de lutte contre le financement du terrorisme n'a pas été encore apportée. Par exemple, Michael Jacobson et Matthew Levitt, anciens membres du Département de renseignement financier et de lutte contre le terrorisme au ministère américain des Finances, estiment que la lutte efficace des États et des organisations internationales pour tarir les sources de financement d'Al-Qaïda a porté ses fruits : « Les problèmes financiers d'Al-Qaïda sont largement dus à l'intensification de l'effort international depuis 2001 pour gêner les activités de l'organisation »¹⁰³. Kent Roach, qui soutient que le droit criminel est d'une utilité limitée pour lutter contre le terrorisme, considère par contre qu'il l'est à l'égard des tiers qui dispensent divers services aux terroristes, par exemple les établissements financiers¹⁰⁴. La plupart sont d'ailleurs soumis à diverses obligations, en particulier de déclaration ou de communication, qui rendent l'emploi des canaux de financement formels plus difficile pour les terroristes¹⁰⁵. C'est l'une des conséquences positives de l'incrimination du financement du terrorisme.

102. Ursula CASSANI, « Droit pénal économique 2003-2005 : actualité législative (responsabilité pénale de l'entreprise, financement du terrorisme, corruption) », dans Walter FELLMANN, Tomas POLEDNA (dir.), *La pratique de l'avocat*, Berne, Stämpfli, 2005, p. 671, à la p. 689.

103. Michael JACOBSON, Matthew LEVITT, « Al-Qaïda en mauvaise santé », dans *Jane's Defense Weekly*, Londres, extrait publié dans *Courrier international*, n° 1070, 5-11 mai 2011, p. 14 et 15.

104. Kent ROACH, dans Thomas GABOR, *La Loi antiterroriste et ses effets : points de vue d'universitaires canadiens*, Département de criminologie, Division de la recherche et de la statistique, Université d'Ottawa, 31 mars 2004, p. 61, à la p. 65, [En ligne]. <http://dsp-psd.tpsgc.gc.ca/Collection/J3-2-2005-2-1F.pdf> (Page consultée le 3 octobre 2011).

105. CANADA, *Loi sur le recyclage des produits de la criminalité et le financement des activités terroristes*, L.C. 2000, c. 17. SUISSE, *Loi fédérale concernant la lutte contre le blanchiment d'argent et le financement du terrorisme dans le secteur financier* (LBA), RS 955.0.

6.3 LES MOTIFS DE NATURE POLITIQUE, RELIGIEUSE OU IDÉOLOGIQUE

66. Dans la définition de l'activité terroriste, l'exigence relative aux motifs de nature « politique, religieuse ou idéologique » posée à la division (A) du sous-alinéa 83.01 (1) (b) (i) C.cr. a fait couler beaucoup d'encre. L'accusation doit prouver hors de tout doute raisonnable non seulement l'acte et l'intention, mais, en plus, ce motif spécifique. Le fardeau de la preuve s'en voit donc alourdi. En outre, la création de cette infraction fondée sur les motifs (« *motive-based crime* ») confère aux agents gouvernementaux un large pouvoir discrétionnaire pour profiler politiquement des individus ou groupes, en les ciblant non pas pour ce qu'ils ont fait, mais pour ce qu'ils sont ou pensent¹⁰⁶.

67. Mohammad Khawaja fut la première personne à être accusée d'infractions de terrorisme découlant de la LAT. Il fut arrêté à Ottawa le 29 mars 2004. Il dut répondre à des accusations de complot en vue de commettre des actes terroristes au Royaume-Uni. Son affaire a donné lieu à une abondante jurisprudence¹⁰⁷. L'arrêt qui nous intéresse a été rendu le 24 octobre 2006 par la Cour supérieure de justice de l'Ontario, à la suite d'une demande de jugement, accueillie en partie, déclarant inconstitutionnelle et inopérante la disposition relative aux motifs politiques, religieux ou idéologiques du *Code criminel*¹⁰⁸. Le juge Rutherford a estimé en effet que la

106. M. WEBB, préc., note 50, 63.

107. *R. v. Khawaja* (2008), 238 C.C.C (3d) 114 (Ont. S.C.J): déclaration de culpabilité sur sept chefs d'infractions de terrorisme, notamment détention d'une substance explosive susceptible de causer la mort et participation à une activité d'un groupe terroriste; *R. v. Khawaja* (2009), 248 C.C.C (3d) 233 (Ont. S.C.J): condamnation à une peine d'incarcération de dix ans et demi; *R. v. Khawaja*, préc., note 74: appel des déclarations de culpabilité et des peines rejeté; appel incident des peines accueilli. En particulier, alourdissement de la peine pour fabrication d'un détonateur en vue de causer une explosion susceptible de causer la mort (emprisonnement à perpétuité). Une demande d'autorisation d'appel a été déposée auprès de la Cour suprême du Canada le 15 février 2011, accordée le 30 juin 2011. Voir aussi: *Canada (Procureur général) c. Khawaja*, 2007 CF 463, [2007] A.C.F n° 648 et *Canada (Procureur général) c. Khawaja*, [2007] A.C.F n° 1635 (contestation devant la Cour fédérale de la validité constitutionnelle du paragraphe 38.11 (2) de la *Loi sur la preuve* au Canada, puis recours devant la Cour d'appel fédérale).

108. *R. v. Khawaja* (2006), 214 C.C.C (3d) 399 (Ont. S.C.J), 42 C.R. (6th) 348, [2006] O.J. N° 4245 (Ont. S.C.J).

division (A) du sous-alinéa 83.01 (1) (b) (i) C.cr. viole les libertés garanties aux alinéas 2 (a)¹⁰⁹, (b)¹¹⁰ et (d)¹¹¹ de la *Charte canadienne des droits et libertés*¹¹². Par conséquent, l'article 83.01 C.cr. doit être appliqué comme si les motifs prévus par la disposition examinée n'existaient pas¹¹³. Comme une demande d'autorisation d'appel fut refusée par la Cour suprême le 5 avril 2007, la partie de la définition d'activité terroriste qui a été cassée par le juge ne s'applique plus en Ontario. Les juges siégeant dans les autres provinces restent toutefois libres de suivre l'avis de leur collègue ou non. Il faudrait que la Cour suprême du Canada rende un arrêt sur le fond pour que la décision s'impose dans tout le pays. Une autre solution serait que le législateur modifie l'article 83.01 C.cr. dans le sens des considérants formulés par le juge Rutherford.

68. Il n'est pas souhaitable que des motifs d'ordre politique, religieux ou idéologique figurent comme éléments constitutifs de l'activité, ou de l'acte, terroriste. Le législateur suisse a évité cet écueil. Au Canada, l'abandon de la disposition critiquée, en laissant intact le reste de la définition de l'activité terroriste, pourrait poser un problème lié au principe de la légalité (*nullum crimen nulla poena sine lege*). Cette solution risquerait en effet d'aboutir à un important élargissement du champ d'application de l'article 83.01 C.cr.¹¹⁴. Une idée pertinente consisterait à appliquer une définition inspirée de celle retenue par la Cour suprême du Canada dans l'affaire *Suresh*¹¹⁵. Nous développerons ultérieurement et plus en détail cette possibilité, en exposant notre propre définition.

109. « Liberté de conscience et de religion ».

110. « Liberté de pensée, de croyance, d'opinion et d'expression [...] ».

111. « Liberté d'association ».

112. Partie I de la *Loi constitutionnelle de 1982* [annexe B de la *Loi de 1982 sur le Canada* (1982, R.-U., c. 11)].

113. *R. v. Khawaja*, préc., note 108, par. 87.

114. Émilie GRENIER, *Le Canada face au terrorisme international. Analyse d'une loi antiterroriste*, Paris, L'Harmattan, 2011, p. 81 et 82 et références doctrinales citées.

115. Kent ROACH, « Ten Ways to Improve Canadian Anti-Terrorism Law », (2006) 51 *The Criminal Law Quarterly* 102, 103.

6.4 L'INCRIMINATION DU DOL ÉVENTUEL

69. En droit suisse, le dol éventuel est une forme de faute intentionnelle. Il signifie que l'auteur a prévu la possibilité qu'une conséquence survienne et s'est accommodé à l'éventualité qu'elle se produise¹¹⁶. L'auteur doit avoir eu pour but de financer le terrorisme et pas seulement accepter cette possibilité au cas où elle se réaliserait. Une incrimination aurait eu pour conséquence de rendre « punissable le citoyen qui envisagerait et accepterait le risque sérieux qu'une partie des fonds donnés dans un but humanitaire — acheminer et distribuer des vivres ou financer un projet éducatif dans un territoire dominé par des groupes terroristes, par exemple — soit utilisée pour des actes terroristes »¹¹⁷. Les Chambres fédérales ont voulu éviter ce risque.

70. En droit canadien, l'insouciance désigne « le comportement de celui qui est conscient d'un risque et qui, malgré cette connaissance, agit ou s'abstient d'agir tout en acceptant ou en étant indifférent quant au résultat »¹¹⁸. La plupart des dispositions incriminant le financement du terrorisme emploient les expressions « dans l'intention » (« *intending* ») ou « en sachant » (« *knowing* »). Elles permettent une condamnation même dans les cas où l'accusé n'est pas certain si ces actes seront, *in fine*, reliés à une activité terroriste. Agir « dans l'intention » qu'un événement survienne n'implique pas forcément pour l'auteur qu'il croit que cet événement va survenir de manière certaine comme conséquence de son comportement. Cela signifie qu'il est conscient que l'événement représente une conséquence possible de son acte. L'auteur peut aussi être condamné même s'il n'éprouve pas un désir particulier de faciliter une activité terroriste, voire s'il est indifférent ou éprouve de l'aversion pour celle-ci. Le degré de satisfaction procuré à une personne par un événement n'est pertinent que du point de vue de ses mobiles et, parfois, de son intention ou de ses buts. La formulation « en sachant »

116. L'article 12, alinéa 2, 2^e phrase CPS énonce que « l'auteur agit déjà intentionnellement lorsqu'il tient pour possible la réalisation de l'infraction et l'accepte au cas où celle-ci se produirait ».

117. U. CASSANI, préc., note 41, 297.

118. Hugues PARENT, *Traité de droit criminel*, t. 2, 2^e éd., Montréal, Éditions Thémis, 2007, n^o 323, p. 231 et 232.

suppose la conscience de la probabilité de l'événement¹¹⁹. Le droit canadien est donc moins restrictif que le droit suisse.

71. Nous pensons que le dol éventuel, ou l'insouciance, doit être sanctionné pénalement en matière de financement du terrorisme. La solution contraire revient à créer un obstacle non négligeable en matière de preuve. En outre, comme le soulignait pertinemment le conseiller aux États (sénateur) Dick Marty lors des débats parlementaires, évoquant le projet d'alinéa 2 de l'article 260^{quinquies} CPS¹²⁰ :

[...] on veut éliminer le dol éventuel en oubliant que selon toute la doctrine suisse, le dol éventuel est partie du dol. C'est une part de l'intention. Ce qui n'est pas punissable, et c'est juste que ce ne soit pas punissable, c'est la négligence. Si j'ai été léger dans le financement, si je n'ai pas pris toutes les précautions, je ne suis pas punissable parce que j'ai été négligent. Mais le dol éventuel signifie : « Je finance, je ne sais pas très bien ce qu'ils vont faire de cet argent, mais même si cet argent sert à faire exploser un avion, j'accepte de financer ». C'est ce que veut dire cette disposition. « Si l'auteur n'a fait que s'accommoder de l'éventualité », une éventualité qu'il accepte sciemment.

6.5 L'APPLICATION À UN ACTE PRÉCIS OU UNE INCRIMINATION PLUS LARGE?

72. Selon l'article 260^{quinquies} CPS, l'auteur doit avoir connaissance de l'acte terroriste et vouloir, par dessein ou dol direct, y contribuer de manière causale. S'il favorise l'activité criminelle de l'organisation par un soutien logistique, qui peut relever du service financier, c'est l'article 260^{ter} CPS, qui réprime l'organisation criminelle¹²¹, qui entre en ligne de

119. K. DAVIS, préc., note 49, p. 304 et 305.

120. Dick MARTY, *Bulletin officiel de l'Assemblée fédérale*, Conseil des États, objet 02.052, 2 décembre 2002, p. 1080, [En ligne]. http://www.parlament.ch/ab/frameset/f/s/4616/70904/f_s_4616_70904_71042.htm (Page consultée le 3 octobre 2011).

121. L'article 260^{ter} chiffre 1 CPS prévoit que « celui qui aura participé à une organisation qui tient sa structure et son effectif secrets et qui poursuit le but de commettre des actes de violence criminels ou de se procurer des revenus par des moyens criminels, celui qui aura soutenu une telle organisation terroriste dans son activité criminelle, sera puni d'une peine privative de liberté de cinq ans au plus ou d'une peine pécuniaire ». Pour la définition de l'organisation criminelle en droit canadien, voir le paragraphe 467.1 (1) C.c. et, pour un cas intéressant d'application, *R. v. Terezakis*, 2007 BCCA 384.

compte¹²². Le Tribunal fédéral a d'ailleurs jugé que des organisations terroristes, comme l'ETA basque, les Brigades rouges italiennes ou Al-Qaïda, remplissent les conditions de la définition de l'organisation criminelle¹²³. Plus récemment, en mai 2009, le Ministère public de la Confédération a ouvert une enquête de police judiciaire pour extorsion (art. 156 CPS), contrainte (art. 181 CPS), blanchiment d'argent (art. 305^{bis} CPS) et organisation criminelle. Certains membres présumés d'une fraction appartenant au mouvement des Tigres de libération de l'Eelam tamoul étaient soupçonnés d'avoir participé à une organisation de type criminel ou de l'avoir soutenue. Ils auraient, depuis la Suisse, collecté des fonds auprès de la communauté tamoule résidant en Suisse et organisé leur transfert, vers Singapour notamment¹²⁴. Le parquet n'a visiblement pas retenu l'infraction de financement du terrorisme, mais celle d'organisation criminelle.

73. Le droit canadien permet une incrimination plus large en prévoyant, en particulier, que se rend coupable d'un acte criminel celui qui réunit, fournit ou rend disponibles des biens ou services financiers en sachant qu'ils seront utilisés par un groupe terroriste ou qu'ils bénéficieront à ce dernier (al. 83.03 (b) C.cr.). Cette solution est préférable. En effet, en droit suisse, le recours forcé à l'article 260^{ter} CPS pour sanctionner celui qui soutient financièrement une organisation terroriste n'est pas satisfaisant. Elle pose des problèmes d'application pratique. Par exemple, en droit suisse, une organisation criminelle doit comporter au moins trois personnes¹²⁵. Un individu qui soutiendrait financièrement un terroriste, agissant seul ou avec un autre participant, ne serait donc punissable ni du chef de l'article 260^{ter} CPS ni de celui de l'article 260^{quinquies} CPS. De plus, si le coût d'un acte

122. U. CASSANI, *préc.*, note 41, 304.

123. ATF 125 II 569; ATF 128 II 355; arrêt du Tribunal fédéral 1A.194/2002 du 15 novembre 2002. Ces jugements ont été rendus dans le cadre de la coopération judiciaire internationale en matière pénale.

124. Arrêt de la I^{re} Cour des plaintes du Tribunal pénal fédéral BH.2011.1 du 16 février 2011, relatif à un ordre de mise en détention provisoire, [En ligne]. http://bstger.weblaw.ch/pdf/20110216_BH_2011_1.pdf (Page consultée le 3 octobre 2011).

125. Il en est de même au Canada, où le nombre figure expressément au paragraphe 467.1 (1) C.cr. En Suisse, il a été fixé par la jurisprudence (voir, par exemple, l'ATF 129 IV 271, 273, considérant 2.3.1).

terroriste particulier n'est souvent pas élevé, il en va en général différemment de celui nécessaire à assurer le fonctionnement et la pérennité d'une organisation terroriste bien structurée.

74. Sur le plan théorique, terrorisme et crime organisé doivent en être distingués. Si les deux phénomènes présentent des similitudes très importantes, notamment par le recours à la violence, plusieurs contrastes sont à souligner. Tout d'abord, l'intention des acteurs est en général différente : l'objectif ultime du terroriste est politique, alors que celui du membre d'une organisation criminelle est économique. Or, dans le premier cas, la finalité peut être satisfaite, alors que la fin qui consiste à s'enrichir ne peut jamais être définitivement réalisée. Le but d'une organisation criminelle est donc de durer, alors que le groupe terroriste vise à devenir inutile le plus rapidement possible. Ensuite, si les terroristes utilisent la violence à chaque occasion, en visant large, les groupes criminels y recourent avec plus de retenue, en se focalisant sur les concurrents ou les membres du groupe qui leur posent problème, afin d'éviter d'attirer trop l'attention des autorités de poursuite pénale. Enfin, l'organisation criminelle vise toujours à minimiser ses contacts avec les autorités, alors que ces dernières sont visées par les activités terroristes. Il faut encore ajouter que pour un groupe terroriste, accepter la criminalité équivaut à perdre une partie de sa légitimité aux yeux du public¹²⁶.

75. Le financement du terrorisme, en tant qu'infraction, ne devrait en conséquence pas concerner uniquement un acte précis, mais aussi le soutien apporté à l'organisation ou l'entité terroriste elle-même, cette dernière notion devant être indépendante du nombre de personnes physiques qui la composent. Celui qui fournit ou réunit des fonds en faveur de terroristes en voulant ou sachant qu'ils seront utilisés pour commettre des actes de violence criminels doit être punissable pour financement du terrorisme, alors même que ces derniers ne sont pas encore déterminés ou déterminables.

126. S. LEMAN-LANGLOIS, préc., note 7, p. 94-102.

6.6 LA PRISE EN COMPTE DES « COMBATS LÉGITIMES »

76. L'article 260^{quinquies} alinéa 3 CPS pose une exception de punissabilité lorsque l'acte de financement du terrorisme « vise à instaurer ou à rétablir un régime démocratique ou un État de droit, ou encore à permettre l'exercice des droits de l'homme ou la sauvegarde de ceux-ci ». Le comportement n'est pas non plus pénalement répréhensible s'il est « destiné à soutenir des actes qui ne sont pas en contradiction avec les règles du droit international applicable en cas de conflit armé » (al. 4). Une règle similaire à cette dernière est prévue à l'article 83.01 C.cr., qui exclut de la définition de l'activité terroriste :

[...] l'acte — action ou omission — commis au cours d'un conflit armé et conforme, au moment et au lieu de la perpétration, au droit international coutumier ou au droit international conventionnel applicable au conflit ainsi que les activités menées par les forces armées d'un État dans l'exercice de leurs fonctions officielles, dans la mesure où ces activités sont régies par d'autres règles de droit international.

77. Si la notion de « droits de l'homme » est juridiquement bien circonscrite par les textes supranationaux, en particulier par le *Pacte international des Nations Unies relatif aux droits civils et politiques*, il n'en va pas de même de celles de « régime démocratique » et d'« État de droit », qui revêtent une composante politique plus marquée et s'avèrent plus difficiles à délimiter. Le droit international des conflits armés (*ius in bello*) inclut essentiellement le « droit de La Haye », qui régit la conduite des hostilités et le « droit de Genève », qui concerne la protection des victimes des conflits armés¹²⁷.

78. Selon nous, la présence de ces différentes réserves n'est ni nécessaire ni souhaitable. Il est souvent délicat d'opérer une distinction claire entre « combat légitime » et « terrorisme » : « La difficulté réside dans le fait que si le consensus forgé par le jugement de l'histoire permet aisément de se faire une opinion sur l'illégitimité de tel régime politique passé et,

127. Pour plus de détails sur le sujet, voir Robert KOLB, *Ius in bello. Le droit international des conflits armés : précis*, 2^e éd., Bâle, Bruxelles, Helbing Lichtenhahn, Bruylant, 2009.

par effet de ricochet, la légitimité de la résistance contre lui, les choses sont plus floues pour ce qui est du présent »¹²⁸. Il est préférable que le juge pénal traite au cas par cas les affaires qui lui sont soumises, en analysant chaque situation spécifique à la lumière du principe de proportionnalité¹²⁹, étant précisé qu'un acte mené au nom des droits de la personne, de la démocratie ou de l'État de droit ne justifie pas l'utilisation de n'importe quelle violence. Quant à la référence au *ius in bello*, il est évident que les actes qui sont licites au regard du droit international ne sauraient être punissables en droit pénal suisse ou canadien. Commentant l'article 260^{quinquies}, alinéa 4 CPS, Ursula Cassani souligne à juste titre que « la formulation n'est pas sans ambiguïté : les règles visées sont-elles celles qui gouvernent la légalité du recours à la force (*jus ad bellum*) ou les règles humanitaires à respecter en cas de guerre (*jus in bello*)? Un simple renvoi au droit international eût été clair — quoiqu'inutile »¹³⁰. En outre, les règles du droit international applicables en cas de conflit armé permettent, même dans le cadre d'une guerre de libération, de condamner les attentats contre la population civile et autorisent des actes de guerre à l'encontre des forces militaires¹³¹.

6.7 SYNTHÈSE ET PROPOSITION LÉGISLATIVE

79. Il appartient à chaque ordre juridique de décider s'il souhaite incriminer le terrorisme pour lui-même. Aussi bien au Canada qu'en Suisse, où les choix furent différents, il existe suffisamment d'infractions dans le *Code criminel* ou le *Code pénal* pour couvrir l'ensemble des actes susceptibles d'être perpétrés par des terroristes.

80. En tous les cas, le financement du terrorisme doit être sanctionné pénalement. Les motifs de nature politique, religieuse ou idéologique ne doivent pas être constitutifs de la définition du terrorisme. Par rapport à l'utilisation de fonds à des fins terroristes, une incrimination du dol éventuel ou

128. U. CASSANI, préc., note 41, 300.

129. J. GAFNER, préc., note 19, 209.

130. U. CASSANI, préc., note 41, 302 et 303.

131. J. GAFNER, préc., note 19, 210.

de l'insouciance s'impose. Une infraction sanctionnant le financement du terrorisme ne devrait pas s'appliquer qu'à un acte précis, mais également au soutien apporté à une entité ou organisation qui se livre à des activités terroristes. Enfin, il est souhaitable de faire l'économie d'une référence légale à des situations de « combats légitimes » pour exclure la punissabilité.

81. Nous proposons une incrimination du financement du terrorisme qui serait formulée ainsi :

Est coupable d'un acte criminel passible d'un emprisonnement maximal de dix ans quiconque, directement ou non, fournit ou réunit des fonds, dans l'intention de les voir utiliser ou en sachant qu'ils seront utilisés pour financer un acte — ou une entité dont l'un des objets ou l'une des activités est de se livrer à ce type d'actes — destiné à tuer ou blesser grièvement un civil, ou toute autre personne qui ne participe pas directement aux hostilités dans une situation de conflit armé, lorsque, par sa nature ou son contexte, cet acte vise à intimider une population ou contraindre un gouvernement ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte quelconque.

82. La formulation doit être adaptée aux spécificités de chaque ordre juridique, en particulier sur le plan formel. Celle exposée ci-dessus est inspirée de la terminologie canadienne¹³². En droit suisse, l'infraction pourrait être énoncée comme suit (nouvel article 260^{quinquies} CPS ne comportant plus qu'un seul alinéa) :

Celui qui réunit ou met à disposition des valeurs patrimoniales, dans le dessein de financer un acte, ou une entité dont l'un des objets ou l'une des activités est de se livrer à ce type d'actes, destiné à tuer ou blesser grièvement un civil, ou toute autre personne qui ne participe pas directement aux hostilités dans une situation de conflit armé, lorsque, par sa nature ou son contexte, cet acte vise à intimider une population ou contraindre un gouvernement ou une organisation internationale à accomplir ou à s'abstenir d'accomplir un acte

132. Elle impliquerait naturellement une adaptation législative plus globale, avec notamment une redéfinition de l'activité terroriste.

quelconque, sera puni d'une peine privative de liberté de cinq ans ou d'une peine pécuniaire.

7. FINANCEMENT DU TERRORISME ET BLANCHIMENT DE CAPITAUX

83. Depuis les attentats du 11 septembre 2001, la question du financement du terrorisme a été intimement liée à celle du blanchiment de capitaux. Le Groupe d'action financière, dont le Canada et la Suisse sont membres, a formulé des recommandations sur le sujet¹³³. Elles sont de véritables sources du droit (*soft law*) et ont inspiré les législations nationales des deux pays. Les deux États sont également membres du Groupe Egmont¹³⁴, qui réunit les cellules de renseignement financier (*Financial Intelligence Units*) de nombreux États, comme le Centre d'analyse des opérations et déclarations financières du Canada (CANAFE) et le Bureau de communication en matière de blanchiment d'argent, en Suisse.

84. Au Canada, le blanchiment d'argent a été érigé en infraction en 1989. Il a pris place dans la Partie XII.2 du *Code criminel* relative aux « produits de la criminalité » (« *proceeds of crime* »), plus précisément à l'article 462.31 C.cr. (« recyclage des produits de la criminalité », « *laundering proceeds of crime* »). « De nos jours, au Canada, on peut se rendre coupable de blanchiment non plus seulement des gains de trafics de stupéfiants ou des revenus de crimes graves, mais aussi des bénéfices de presque tous les crimes lucratifs dont une personne peut être accusée »¹³⁵.

133. GROUPE D'ACTION FINANCIÈRE, *Les quarante Recommandations du GAFI*, octobre 2003 (incluant toutes les modifications jusqu'au mois d'octobre 2004), [En ligne]. <http://www.fatf-gafi.org/dataoecd/7/35/44493376.pdf> (Page consultée le 5 novembre 2011) et GROUPE D'ACTION FINANCIÈRE, *Les IX Recommandations spéciales*, 22 octobre 2004, [En ligne]. <http://www.fatf-gafi.org/dataoecd/37/59/44509087.pdf> (Page consultée le 5 novembre 2011) (ci-après « GAFI »).

134. [En ligne]. <http://www.egmontgroup.org/> (Page consultée le 5 novembre 2011).

135. Jean-Luc BACHER, « Le dispositif canadien de lutte contre le blanchiment d'argent. La rapide et délicate évolution d'un système en voie d'amélioration », dans Étienne BLAIS, Bertrand PERRIN (dir.), *La lutte contre la criminalité économique : réponses interdisciplinaires à un défi global*, Paris, Genève, Zurich, Bâle, L'Harmattan, Schulthess, 2010, p. 41.

85. L'article 305^{bis} CPS sanctionne le « blanchiment d'argent » (« *Geldwäscherei* », « *riciclaggio di denaro* »). Il est entré en vigueur le 1^{er} août 1990. Il punit les auteurs d'actes intentionnels propres à entraver la confiscation pénale d'une valeur patrimoniale provenant d'un crime¹³⁶. Il s'agit d'une infraction contre l'administration de la justice.

86. Le financement du terrorisme et le blanchiment de capitaux sont traités de manière conjointe par le GAFI, ainsi que par les législations canadienne et suisse destinées aux intermédiaires financiers. Les deux thèmes sont liés l'un à l'autre comme s'ils étaient, dans leur nature, très proches, voire identiques. C'est ainsi, comme nous l'avons vu, que le Canada est doté d'une loi sur « le recyclage des produits de la criminalité et le financement des activités terroristes » et que la Suisse a édicté une loi concernant « la lutte contre le blanchiment d'argent et le financement du terrorisme dans le secteur financier »¹³⁷. Or, s'il est exact que les deux phénomènes présentent des similitudes, par exemple par le recours à des techniques de dissimulation identiques, ils devraient être traités de manière beaucoup plus différenciée. En effet, dans le financement du terrorisme, le lien entre la valeur patrimoniale et l'infraction est inversé (« *reverse money laundering* » ou « noircissement »). Ursula Cassani souligne pertinemment une difficulté spécifique posée par l'élément moral en matière de poursuite du financement du terrorisme, le problème se posant d'ailleurs dans les deux droits étudiés. Elle rappelle que :

[...] la preuve du but illicite est sans doute plus difficile à apporter que celle de la source criminelle, du fait que la destination future d'avoirs est essentiellement fondée sur l'élément subjectif du dessein du financier, alors que la provenance passée peut être établie par le « *paper trail* » et les autres éléments du cas d'espèce qui relient les avoirs à l'infraction qui a déjà eu lieu et qui peut donc avoir déclenché des recherches¹³⁸.

136. « Crime » dans le sens d'infraction passible d'une peine privative de liberté de plus de trois ans.

137. *Supra*, note 105.

138. U. CASSANI, préc., note 41, 305 et 306.

87. L'obstacle existe non seulement pour les autorités de poursuite pénale, mais aussi pour les intermédiaires financiers. Pour les responsables de la conformité, il est en effet souvent plus difficile d'estimer si de l'argent propre pourrait éventuellement être ultérieurement noirci que de s'interroger sur une provenance criminelle, et ce, d'autant plus que leurs moyens d'investigation sont très limités.

88. Dans la critique du rapprochement théorique et institutionnel entre les deux infractions, Célestin Founmdjem franchit un pas supplémentaire en estimant, à juste titre selon nous, que celui-ci risque d'affaiblir la lutte contre le financement du terrorisme¹³⁹. Dans son étude consacrée au lien entre le blanchiment de capitaux et la fraude fiscale, après avoir rappelé que, contrairement au blanchiment des capitaux, les sources de financement du terrorisme ne se limitent pas aux activités criminelles, mais comprennent aussi des comportements en eux-mêmes licites comme les donations, il explique :

En assignant une nouvelle cible à l'action des institutions nationales et internationales chargées de la lutte contre le blanchiment, les États semblent étouffer le débat sur l'extension de l'incrimination du blanchiment à la fraude fiscale et courent le risque « de décrédibiliser » plus de deux décennies de sensibilisation de la lutte contre le blanchiment. L'attelage de la lutte contre le financement du terrorisme et de la lutte contre le blanchiment de capitaux a aussi pour effet de relayer l'objectif de lutte contre les organisations criminelles qui blanchissent les capitaux au second rang. Ainsi, les services nationaux qui luttent contre le blanchiment de capitaux avec des moyens déjà modestes ont vu leur charge de travail alourdie sans ajustements budgétaires conséquents¹⁴⁰.

89. Le financement du terrorisme et le blanchiment d'argent sont donc des phénomènes suffisamment distincts pour être régis séparément, ce qui n'exclut naturellement pas certaines comparaisons sur le plan analytique, qui peuvent s'avérer utiles. L'enjeu est avant tout important pour l'application des

139. Célestin FOUNMDJEM, *Blanchiment de capitaux et fraude fiscale*, Paris, L'Harmattan, 2011, par. 402-409, p. 210-214.

140. *Id.*, par. 408, p. 214.

lois nationales qui imposent des obligations de diligence et de communication aux intermédiaires financiers, ainsi que pour la réflexion menée sur le plan international par des organismes tels que le GAFI.

CONCLUSION

90. La lutte contre le terrorisme est une entreprise de longue haleine, qui ne prendra jamais totalement fin, et ce, d'autant plus qu'il s'agit d'une hydre à plusieurs têtes en constante évolution. La prévention doit s'organiser à plusieurs niveaux, en particulier en ciblant les causes du phénomène. L'incrimination de son financement est l'une des solutions trouvées par les États. Sur la base des statistiques des condamnations canadiennes et suisses, un certain scepticisme pourrait s'installer. Avec une seule condamnation pour les deux pays, l'effet de prévention générale semble faible, voire nul. Les délinquants potentiels pourraient en effet estimer que le risque d'être poursuivi pénalement est insignifiant. Une telle conclusion serait toutefois trop hâtive. Les dispositions légales sont, en effet, encore relativement récentes. En outre, il s'avère toujours très difficile de jauger l'effet préventif d'une disposition pénale. Une absence de condamnation peut signifier que l'arsenal pénal est inefficace ou, au contraire, que l'effet dissuasif est très fort. Il faudrait procéder à une enquête par sondage pour déterminer combien de personnes ont renoncé à commettre l'infraction parce qu'elles craignaient la sanction et pensaient que les risques d'être appréhendées étaient trop élevés. Une telle étude serait pour le moins compliquée en matière de financement du terrorisme.

91. Il n'est pas possible d'estimer dans quelle mesure la formulation actuelle des éléments constitutifs des infractions respectives représente un obstacle à leur application. Il est par contre possible d'affirmer que, dans les deux systèmes, les éléments moraux compliquent la tâche de l'accusation. Établir l'existence du dessein ou du motif requis constitue en effet une condition particulièrement rigoureuse.

92. D'autres écueils jalonnent le processus d'établissement des preuves. Comme nous l'avons montré, le financement du terrorisme représente un noircissement de fonds (« *reverse*

money laundering») et il est en général plus difficile de démontrer un but illicite qu'une source criminelle. Le recours à des systèmes informels de transfert de capitaux, tels que l'*Hawala*, rend la détection plus complexe. La phase opérationnelle d'un attentat nécessite la plupart du temps des montants relativement modestes, donc plus difficiles à découvrir. La coopération internationale avec certains États est très laborieuse. Enfin, certains groupes terroristes sont constitués d'une somme d'individus adhérant à une idéologie. Ces organisations sont structurées de manière assez lâche et ne correspondent pas à des entités monolithiques moins difficilement identifiables.

93. La pertinence de la structuration de l'énoncé légal est assurément une condition nécessaire à l'efficacité de l'arsenal pénal. Une issue assez prometteuse pour les autorités de poursuite serait aussi de mettre l'accent sur la saisie (art. 83.13 C.cr.; art. 263 et suiv. du *Code de procédure pénale suisse*) et la confiscation subséquente (art. 83.14 C.cr.; art. 70 et suiv. CPS). Très pragmatiquement, le but serait d'empêcher, ou au moins d'entraver le plus possible, le financement du terrorisme plutôt qu'aboutir forcément toujours à la condamnation de personnes. Quelles que soient les solutions retenues, il est du devoir de chacun d'entre nous d'apporter sa contribution à un combat commun pour le triomphe des libertés fondamentales et de l'ordre sur la violence.

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Annex 493

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INTERNATIONAL CONVENTION AGAINST THE TAKING OF HOSTAGES

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1. Historical Context

The impetus for the negotiation of the International Convention Against the Taking of Hostages (“Hostages Convention”) was the proliferation of hostage-taking in the 1970s. In September 1976, the Federal Republic of Germany (“Germany”) proposed that the drafting of a convention to address the problem should be included on the agenda of the thirty-first session of the United Nations General Assembly.¹ Hostages had recently been taken at the German Embassy in Sweden in April 1975, resulting in the loss of two lives. Other prominent seizures of hostages around that time included an incident at the Vienna headquarters of the Organisation of Petroleum Exporting Countries (OPEC) in December 1975 and an aircraft hijacking at Entebbe airport in Uganda in June 1976.²

In explaining its proposal for a convention, Germany stated that hostage-taking for any purpose was “abhorrent and inhuman”, and “absolutely intolerable and incompatible with universally accepted standards of human conduct”.³ It was said to infringe basic values upheld by the United Nations, namely the dignity and fundamental rights of every individual, including the rights to life, liberty and security of person in the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR).⁴ Germany further warned that hostage-taking threatened international peace and transnational relations.⁵

While hostage-taking was already prohibited under international humanitarian law,⁶ including as a war crime,⁷ there was not yet any international instrument addressing hostage-taking outside armed conflict. Nor did the few existing “sectoral” anti-terrorism conventions adequately address the problem, since they were confined to specific contexts such as aircraft safety or harm to internationally protected persons.⁸ Other norms of general international law too were insufficient; for instance, rules on the inviolability of diplomatic premises and personnel did not cover other victims, criminalise the perpetrators, or impose obligations directly on non-State actors for whom no State can be held responsible.

* The author expresses appreciation to Ms. Kate Bones and Ms. Kathleen Heath for their assistance.

¹ A/31/242.

² Joseph Lambert, *Terrorism and Hostages in International Law: A Commentary on the Hostages Convention 1979* (Cambridge, Grotius Publications, 1990), pp. 2-3.

³ A/31/242, para. 5.

⁴ *Ibid.*, para. 5.

⁵ *Ibid.*, para. 1.

⁶ Geneva Convention Relative to the Protection of Civilian Persons in Time of War, article 34 (in international armed conflicts); Additional Protocol I of 1977 to the Geneva Conventions, article 75(2)(c) and (e) (in international conflicts); four Geneva Conventions of 1949, common article 3(1)(b) (non-international armed conflicts); and Additional Protocol II of 1977 to the Geneva Conventions, article 4(2)(c) (non-international conflicts).

⁷ Geneva Convention Relative to the Protection of Civilian Persons in Time of War, article 146, and Additional Protocol I of 1977 to the Geneva Conventions, article 85(5) (both concerning international conflicts); subsequent to the Hostages Convention, see also Rome Statute of the International Criminal Court, article 8(2)(a)(viii) and (c)(iii).

⁸ Hague Convention for the Suppression of Unlawful Seizure of Aircraft, 1970; Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, 1971; and Convention on the Prevention and Punishment of Crimes against Internationally Protected Persons, including Diplomatic Agents, 1973.

The General Assembly referred the German proposal to the Sixth Committee,⁹ which recommended establishing an *ad hoc* committee (of 35 State members) to draft a convention, and the General Assembly agreed in a resolution of 15 December 1976.¹⁰ The creation of a new committee was in part designed to avoid the ideological deadlock which had developed in the existing Ad Hoc Committee on International Terrorism, established in 1972 and in place until 1979, over the definition of “terrorism” (including “State terrorism”), its causes, and debate over the legitimacy of national liberation violence. The Ad Hoc Committee on the Drafting of an International Convention Against the Taking of Hostages met in three sessions in 1977, 1978 and 1979.¹¹

Hostage-taking persisted during the negotiations, further emphasising the need for a convention. Incidents included the hijackings of a German airliner to Somalia in 1977 and an Egyptian aircraft to Cyprus in 1978, as well as the protracted occupation of the United States Embassy in Tehran from November 1979 to January 1981.¹² Attention was also drawn to hostage-taking in armed conflict during the contemporaneous negotiations on Additional Protocols I and II to the four Geneva Conventions of 1949, both adopted in 1977.¹³

2. Significant Developments in the Negotiating History

The drafting of the convention proceeded on the basis of a German working paper (“Working Paper”).¹⁴ The proposal deliberately avoided reference to the politicized term “terrorism”.¹⁵ Instead, the Working Paper modelled the draft convention on the existing sectoral anti-terrorism conventions, which strongly influenced the negotiations and the final instrument.

Some States felt that a convention should fill the gaps in and supplement the existing legal framework without duplicating, disturbing or derogating from existing instruments, including the sectoral treaties and the Geneva Conventions.¹⁶ However, no provision was ultimately included in the Hostages Convention concerning its relationship with other sectoral treaties.¹⁷ Article 12 provides only that the Convention shall not apply to certain hostage-taking in armed conflicts covered by international humanitarian law.

The essential elements of hostage-taking were relatively uncontested in the drafting. The most contested issue was whether the convention should apply to national liberation movements which, depending on how one approaches the issue, is a question of either definition or an exception to the definition. Many African and Eastern-bloc States preferred that the convention not apply to national liberation movements, as it “must above all protect the rights of a people which engaged in violent action against colonialist, racist, alien régimes in order to regain its legitimate rights or redress an injustice which it had suffered”.¹⁸ On this view, it was essential that a convention did not delegitimize national liberation movements¹⁹ or impede their struggle for self-

⁹ A/31/430.

¹⁰ General Assembly resolution 31/103 of 15 December 1976.

¹¹ Its mandate was renewed in General Assembly resolutions 32/148 and 33/19.

¹² *United States Diplomatic and Consular Staff in Tehran (United States of America v. Iran)*, Judgment, *I.C.J. Reports 1980*, p. 3.

¹³ Additional Protocol I of 1977 to the Geneva Conventions, article 75(2)(c) and (e) and article 85(5) (in international conflicts); and Additional Protocol II of 1977 to the Geneva Conventions, article 4(2)(c).

¹⁴ A/AC.188/L.3, reproduced in A/32/39, annex II.

¹⁵ See Clive Aston, “The United Nations Convention Against the Taking of Hostages: Realistic or Rhetoric?”, in *British Perspectives on Terrorism*, Paul Wilkinson, ed. (Allen & Unwin, 1981), pp. 139-140.

¹⁶ A/32/39, p. 20 (Mexico), p. 22 (Canada), p. 54 (France) and p. 35 (Lesotho).

¹⁷ A/34/39, p. 18.

¹⁸ A/32/39, p. 30 (Algeria).

¹⁹ *Ibid.*, p. 28 (Yugoslavia) and p. 35 (United Republic of Tanzania).

determination.²⁰ On the other hand, Western States insisted that the convention should apply to all hostage-taking, since such violence was “inadmissible in all cases” and no matter how just or noble the cause.²¹

The controversy reopened a debate which had apparently been settled with adoption of the Additional Protocols to the Geneva Conventions in 1977, which absolutely prohibit hostage-taking “at any time and in any place whatsoever, whether committed by civilian or by military agents”.²² Self-determination movements too were covered by those prohibitions, whether as parties to an international conflict (under Additional Protocol I) or in non-international conflicts (under Additional Protocol II). Some of the States which supported the Additional Protocols nonetheless argued for a liberation exception in the context of a hostages convention.

There was thus a proposal to exclude from the definition of hostage-taking “any act or acts carried out in the process of national liberation against colonial rule, racist or foreign régimes, by liberation movements recognized by the United Nations or regional organisations”.²³ Germany expressed concern that such an exception “would be interpreted as relieving liberation movements of their obligations under international law”.²⁴

A related suggestion introduced the concept of the “innocent hostage”,²⁵ which implied a subjective distinction between innocent and “guilty” captives, with only the former entitled to protection. The suggestion did not gain wide support. A further proposal defined hostage-taking as “the seizure or detention, not only of a person or persons, but also of masses under colonial, racist or foreign domination”,²⁶ but this definition, aimed at the conceptually different harm of State colonial repression, also did not attract support.

The impasse over liberation movements was resolved in part through a procedural move at the second session of the Ad Hoc Committee to establish two working groups, the first to examine “thornier questions” (including national liberation),²⁷ and the second to consider less controversial matters.²⁸ Working Group I eventually secured the agreement of many developing and developed States alike that, regardless of the cause, “no one should be granted an open licence for taking hostages”.²⁹

Such consensus was achieved partly because of an apparent concession, in article 12, to exclude from the application of the Convention certain hostage-taking in armed conflicts “in which peoples are fighting against colonial domination and alien occupation and against racist régimes in the exercise of their right of self-determination”.³⁰ Such exclusion does not, however, imply that hostage-taking by liberation movements is permitted, but only that it is dealt with by international humanitarian law rather than the Convention when humanitarian law imposes a prosecute or extradite obligation. It remains an offence for “any” person to commit hostage-taking under article 1 of the Convention and there is no exception for any actor (State or non-State) or cause, including liberation movements in peacetime or in armed

²⁰ *Ibid.*, p. 76 (Libyan Arab Jamahiriya).

²¹ *Ibid.*, p. 55 (United States of America) and p. 20 (France).

²² Additional Protocol I of 1977 to the Geneva Conventions, article 75(2)(c).

²³ A/AC.188/L.5, reproduced in A/32/39, annex II (United Republic of Tanzania and Lesotho, later joined by Algeria, Egypt, Guinea, Libyan Arab Jamahiriya and Nigeria).

²⁴ A/32/39, p. 70 (Federal Republic of Germany).

²⁵ A/C.6/31/SR.58; and A/32/39, p. 27 (Jordan), p. 36 (United Republic of Tanzania) and p. 38 (Egypt).

²⁶ A/AC.188/L.9, reproduced in A/32/39, p. 112 (Libyan Arab Jamahiriya).

²⁷ A/33/39, pp. 5 and 56.

²⁸ *Ibid.*, p. 7.

²⁹ *Ibid.*, p. 5.

³⁰ Based on a Mexican proposal in 1977: A/AC.188/L.6, reproduced in A/32/39, annex II.

conflicts where hostage-taking is not covered by an obligation to prosecute or extradite under humanitarian law.³¹

Another contested issue in the drafting concerned the transboundary use of force to rescue hostages, in the wake of a controversial Israeli operation at Entebbe, Uganda, in 1976. A number of African and Arab States insisted that “States shall not resort to the threat or use of force against the sovereignty, territorial integrity or independence of other States as a means of rescuing hostages”.³² Other States felt that such a provision was unnecessary.³³ An article was eventually adopted based on compromise language proposed by the Syrian Arab Republic in 1977.³⁴ Article 14 provides that the Convention itself cannot authorise the use of force. It does not, however, preclude or alter the application of the international law on self-defence, insofar as that law may apply to hostage rescue situations.³⁵

Also contentious was a proposal by Mexico, supported by other Latin American States, that the convention should not impair the right of asylum.³⁶ Some Western States objected that such a provision was unnecessary because States enjoyed the right to choose between extradition or local prosecution, and so retained the option of granting asylum.³⁷ Working Group I was unable to agree on the issue; it was resolved later by a Sixth Committee working group in 1979, though some Latin American States were dissatisfied with the final article.³⁸ Article 15 preserves the right of asylum under “Treaties on Asylum”. Also, the Convention does not require States to treat hostage-taking as extraditable non-political offences, despite proposals from some States that it should.³⁹

In relation to the obligation to prosecute under article 7, the Netherlands suggested that prosecution should only be required if extradition were refused, since it would be unreasonable to expect the State of custody to prosecute if no other State, including the State in which the offence was committed, wished to prosecute.⁴⁰ It was objected that such a provision could create a loophole in the system and that a “no safe haven” approach should be preferred,⁴¹ and the qualification was not included.⁴²

A proposal to widen jurisdiction under article 5, to allow member States of an international organisation subject to demands by hostage-takers to assert jurisdiction,⁴³ was not adopted.⁴⁴ It was pointed out that if the United Nations was subjected to demands, virtually every State would have jurisdiction over the offence.⁴⁵ A different French proposal to permit passive personality jurisdiction was also debated but eventually included.⁴⁶ It was not, however, agreed to recognise jurisdiction over serious violent acts related to hostage-taking offences.⁴⁷

³¹ On such circumstances, see Lambert, *op. cit.*, pp. 263-298.

³² A/AC.188/L.7, reproduced in A/32/39, annex II, and A/32/39, p. 62 (United Republic of Tanzania).

³³ A/34/39, p. 7.

³⁴ A/AC.188/L.11, reproduced in A/32/39, annex II.

³⁵ On which, see Lambert, *op. cit.*, pp. 316-322. The question was not before the Court in relation to United States rescue operation in Iran: see *Tehran Hostages* case, *op. cit.*, paras. 93-94.

³⁶ A/AC.188/L.6, reproduced in A/32/39, annex II; and A/32/39, p. 21 (Mexico).

³⁷ A/32/39, p. 53 (United States of America) and p. 93 (Federal Republic of Germany).

³⁸ A/C.6/34/SR.62, p. 5 (Ecuador, Venezuela) and p. 12 (Cuba).

³⁹ A/C.6/31/SR.55, p. 9 (Australia).

⁴⁰ A/32/39, p. 89 (Netherlands) and A/AC.188/L.14, reproduced in A/32/39, annex II.

⁴¹ A/32/39, p. 89 (United States of America) and p. 93 (Federal Republic of Germany).

⁴² *Ibid.*, p. 16.

⁴³ A/AC.188/L.3, reproduced in A/32/39, annex II A.

⁴⁴ A/33/39, p. 10 and A/AC.188/L.14, reproduced in A/32/39, annex II L.

⁴⁵ A/32/39, p. 78 (Mexico). For the debate, see also A/32/39, p. 84 (United States of America), pp. 84-85 (Japan), p. 93 (Federal Republic of Germany); A/33/39, p. 39 (Netherlands), p. 40 (United Kingdom) and p. 44 (Canada).

⁴⁶ A/34/39, p. 12. For the debate, see A/33/39, p. 39 (Netherlands) and A/AC.188/L.13, reproduced in A/32/39, annex II.

⁴⁷ A/33/39, p. 39 (Netherlands) and A/34/39, p. 12.

In relation to penalties for hostage-taking under article 2 of the Convention, there was debate about whether penalties should be “severe” or “appropriate”⁴⁸ in order to sufficiently punish and deter offenders. The compromise was to require “appropriate penalties [for the offences] which take into account their grave nature”.⁴⁹ A proposal for mitigation of penalties where hostages were voluntarily released was contentious and not accepted.⁵⁰

The draft convention concluded by the Ad Hoc Committee was submitted to the General Assembly,⁵¹ which referred it to the Sixth Committee. The draft was considered by a working group comprised of the same States that had constituted the Ad Hoc Committee,⁵² and then by the Sixth Committee between 27 November and 7 December 1979. The General Assembly adopted the Convention without a vote on 17 December 1979, annexed to resolution 34/146. The Convention was opened for signature at New York on 18 December 1979. The Convention entered into force on 3 June 1983.

3. Summary of Key Provisions

The preamble to the Hostages Convention declares that “the taking of hostages is an offence of grave concern to the international community”. It also highlights the Convention’s role in furthering the purposes and principles of the Charter of the United Nations in maintaining international peace and security and promoting friendly relations and co-operation among States; and in securing the rights to life, liberty and security of person as recognised in the UDHR and ICCPR. While the preamble also describes “all acts of taking of hostages as manifestations of international terrorism”, it is clear from the definition of offences in article 1 that hostage-taking is an offence even if it involves compulsion for private rather than political purposes.⁵³

Article 1 of the Hostages Convention defines the offences of hostage-taking, attempted hostage-taking, and complicity in hostage-taking. There is, however, no offence of threatening to commit hostage-taking.⁵⁴ According to article 1, paragraph 1, the offence of hostage-taking is committed by:

Any person who seizes or detains and threatens to kill, to injure or to continue to detain another person (hereinafter referred to as the “hostage”) in order to compel a third party, namely, a State, an international intergovernmental organization, a natural or juridical person, or a group of persons, to do or abstain from doing any act as an explicit or implicit condition for the release of the hostage ...

There is no requirement that force be used to take hostages as long as force is threatened. Article 2 requires States parties to make the above offences “punishable [in domestic criminal law] by appropriate penalties which take into account the grave nature of those offences”.

There are two important limitations on the scope of application of the offences. First, the Convention only applies to hostage-taking which has a transnational element and does not apply to purely domestic acts. Thus article 13 provides that the Convention “shall not apply where the offence is committed within a single State, the hostage and the alleged offender are nationals of that State and the alleged offender is found in the territory of that State”.

⁴⁸ A/32/39, p. 80 (Netherlands), p. 85 (Denmark) and p. 92 (Federal Republic of Germany).

⁴⁹ A/33/39, p. 9 and A/34/39, p. 11.

⁵⁰ A/AC.188/L.8, reproduced in A/32/39, annex II; and A/33/39, p. 30 (United Kingdom), p. 31 (Sweden) and p. 32 (United States of America).

⁵¹ A/34/39.

⁵² A/C.6/34/L.12.

⁵³ See *United States v. Rodriguez* 587 F.3d 573 (2d Cir 2009).

⁵⁴ *Lambert, op. cit.*, p. 83.

Secondly, pursuant to article 12, the Convention does not apply to hostage-taking committed in armed conflicts governed by the Geneva Conventions of 1949 and its Additional Protocols of 1977, where such laws already require States “to prosecute or hand over the hostage-taker”. The Hostages Convention could still apply to hostage-taking by liberation movements committed in armed conflicts involving a State not party to Additional Protocol I, since then only common article 3 of the four Geneva Conventions would apply and it does not impose a prosecute or extradite obligation.

States must establish prescriptive jurisdiction over the offences in accordance with article 5, which invokes the territoriality, nationality, passive personality, and (treaty-based) universality principles. Specifically, mandatory jurisdiction must be established by a State in relation to offences committed (i) in its territory or on board a ship or aircraft registered in that State; (ii) by its nationals; (iii) to compel the State to do or abstain from doing any act; or (iv) where the offender is present in the State’s territory and the State declines to extradite. In addition, a State may optionally establish jurisdiction over stateless persons who are habitually resident in its territory, or where a hostage is a national of the State. The Convention does not, however, prioritize or otherwise resolve valid competing jurisdictional claims by different States.

The Convention is built around the “extradite or prosecute” (*aut dedere aut judicare*) principle that is common to many of the sectoral anti-terrorism conventions. As a first step, under article 6 a State has a duty to apprehend an alleged offender in its territory, to facilitate prosecution or extradition, and the State must conduct a preliminary inquiry into the facts. States parties must also afford one another “the greatest measure of assistance” in connection with criminal proceedings, including by supplying all necessary evidence (article 11, paragraph 1).

Under article 8, paragraph 1, if the State of custody does not extradite the alleged offender, “without exception whatsoever” it must submit the case to its competent authorities for prosecution. It is not, therefore, a duty to prosecute, but a duty to consider prosecution “in the same manner as in the case of any ordinary offence of a grave nature under the law of that State”. The Convention does not establish any priority between local prosecution or extradition.

In either case article 8, paragraph 2, recognises a suspect’s right to be “guaranteed fair treatment at all stages of the proceedings”, including “all the rights” under local law. Persons taken into custody also enjoy a right to communicate with the nearest representative of their State of nationality or habitual residence (article 6, paragraph 3). A State claiming jurisdiction is also entitled to invite the International Committee of the Red Cross to communicate with and visit the alleged offender (article 6, paragraph 5).

The Convention facilitates extradition by deeming the Convention’s offences as extraditable offences in any existing extradition treaty between States parties (article 10, paragraph 1). States parties also undertake to include such offences in every extradition treaty concluded between them. Where no extradition treaty exists between relevant States, the requested State may elect to treat the Hostages Convention as the legal basis for extradition (article 10, paragraph 2). The Convention may also serve as the basis for extradition where national law does not require an extradition treaty (article 10, paragraph 3). Article 10, paragraph 4, provides that the Convention’s offences shall be treated as if they had been committed not only in the place they occurred but also in the territories of States required to establish their jurisdiction by the Convention.

National law continues to govern the preconditions of extradition to the extent not modified by the Convention. Thus, for instance, States which refuse to extradite their nationals may continue not to do so; or States could still insist on satisfaction of the “specialty” rule (namely, that an extradited person can only be extradited to face the charge for which extradition was requested). The State must then submit the case for prosecution.

The Convention contains important safeguards in respect of extradition. An extradition request must be refused if it was made for the purpose of prosecuting or punishing a person on account of his race, religion, nationality, ethnic origin or political opinion, or if the person's position would be prejudiced for such reasons; or if a person cannot communicate with the State entitled to diplomatically protect him or her (article 9, paragraph 1).

Unlike a few later sectoral anti-terrorism treaties, the Hostages Convention does not "depoliticise" its offences by *requiring* States not to treat it as a non-extraditable "political offence" under national law.⁵⁵ Article 15 expressly preserves the right of asylum under the "Treaties on Asylum", as between States parties to those treaties. The asylum treaties are not specified and it is unclear whether it also includes the Refugee Convention of 1951.⁵⁶

It is therefore conceivable that the extradition of an alleged offender may be refused on the basis that the conduct constitutes a "political offence" under national extradition and/or asylum law. The case must still then be submitted to the competent local authorities for prosecution. National legal systems may then take the political nature of the offence into account in various ways, such as in exercising the discretion whether to prosecute or in mitigation in sentencing.

The Convention contains various procedural obligations in relation to the criminal process. A State must notify affected States, through the United Nations Secretary-General, where an alleged offender is taken into custody (article 6, paragraph 2) and of the results of an investigation (article 6, paragraph 6). The final outcome of a prosecution must also be communicated to the Secretary-General for transmission to concerned States and international organisations (article 7).

Certain humanitarian considerations are addressed by the Convention. The State in which the hostage is held "shall take all measures it considers appropriate to ease the situation of the hostage, in particular, to secure his release and, after his release, to facilitate, when relevant, his departure" (article 3, paragraph 1). The property of hostages must also be returned as soon as possible (article 3, paragraph 2).

The Convention thus accords a discretion to States in choosing how to respond to hostage-taking, conceivably extending from negotiation at one end of the spectrum to forcible measures of rescue at the other. While some States refuse to negotiate with terrorists or to pay ransoms as a matter of policy, the Convention neither requires nor prohibits either step.⁵⁷ Even granting immunity from prosecution may not be ruled out, as in the case of the *Achille Lauro* hijacking in 1986.⁵⁸ Any response must, however, comply with other relevant international laws, including human rights law and United Nations counter-terrorism financing obligations.⁵⁹

Other States are prohibited, however, from taking forcible action to rescue hostages in the territory of another State without that State's consent. Article 14 thus provides that "[n]othing in this Convention shall be construed as justifying the violation of the territorial integrity or political independence of a State in contravention of the Charter of the United Nations". That provision does not affect, however, the application

⁵⁵ See also Lambert, *op. cit.*, p. 233.

⁵⁶ Article 1F(b) of the Refugee Convention excludes from refugee status a person in relation to whom there are serious reasons for considering he or she has committed a serious non-political crime. Some acts of hostage-taking may thus be regarded as non-political under both international refugee law and certain national extradition laws. Criminal law defences must still be considered, such as pleas of duress or necessity which mitigate responsibility for an offence.

⁵⁷ The European Court of Human Rights has also recognised the discretion of States in their choice of response: see *Finogenov and others v. Russia* [2011] ECHR 2234 (20 December 2011), para. 223.

⁵⁸ Lambert, *op. cit.*, pp. 113-116.

⁵⁹ See, e.g., Security Council resolutions 1267 (1999) and 1373 (2001); and International Convention for the Suppression of the Financing of Terrorism 1999.

of any relevant international law of self-defence under Article 51 of the Charter of the United Nations and customary international law.

All State parties bear an obligation to cooperate to prevent hostage-taking under article 4. In particular, States must take all practicable measures to prevent preparations in their territories for its commission (within or outside their territories), including by prohibiting illegal activities by persons or groups that encourage, instigate, organize or engage in it. The rule is a specific reiteration of the general obligation on States not to permit their territories to be used for activities harmful to other States, including by terrorist acts.⁶⁰ Prevention must also be pursued through the exchange of information (such as, for example, intelligence) and administrative coordination.

Where inter-State disputes arise concerning the Convention, article 16 provides that they should be settled by negotiation, or failing that, arbitration or a subsequent reference to the International Court of Justice, unless a State reserves otherwise upon expressing its consent to the Convention.

4. Influence on Subsequent Legal Developments

By February 2014, the Hostages Convention had attracted 173 States parties and 39 signatories.⁶¹ The influence of the Convention is difficult to evaluate. Prosecutions or extraditions arising pursuant to the Convention appear reasonably scarce, even though many States parties have enacted the necessary domestic implementing legislation. It is undoubtedly comforting for States to know that the Convention is available in the rare cases that it may be needed. Some States have gone beyond what the Convention requires to treat its offences as non-political crimes for the purpose of national extradition law⁶² or refugee law.

Whether the Convention has deterred potential hostage-takers is more difficult to know. Certainly many terrorists do not care for international law prohibitions which get in the way of violently attaining their political goals. There is also a risk that the prohibition of hostage-taking may divert terrorists to resort to other, as yet unregulated methods of terrorism, in the absence of a comprehensive treaty prohibiting all terrorism.⁶³

The Hostages Convention has nevertheless influenced various areas of international and national legal practice, including international criminal law and international humanitarian law. In *Prosecutor v. Blaskic*, the Appeals Chamber of the International Criminal Tribunal for the former Yugoslavia invoked the Hostages Convention in support of its definition of the war crime of hostage-taking in international humanitarian law.⁶⁴ This was the case notwithstanding that the Hostages Convention itself does not apply in armed conflicts.

Similarly, in *Prosecutor v. Sesay, Kallon and Gbao (RUF case)*, the Appeals Chamber of the Special Court for Sierra Leone observed that the “elements” of the war crime of taking of hostages in armed conflict under the Rome Statute of the International Criminal Court borrow heavily from the Hostages Convention.⁶⁵ The international humanitarian law treaty prohibitions on hostage-taking provide no

⁶⁰ See, e.g., General Assembly resolution 2625 (XXV) of 24 October 1970, annex: Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations.

⁶¹ United Nations Treaty Collection, Multilateral Treaties Deposited with the Secretary-General, chapter XVIII.5 (<https://treaties.un.org>).

⁶² See, e.g., Australia, Extradition Regulations (1988), Reg. 2B(1)(d).

⁶³ The United Nations draft comprehensive convention on international terrorism has been under negotiation since 2000 but is not yet agreed.

⁶⁴ *Prosecutor v. Blaskic (Appeal Judgement)*, IT-95-14-A, ICTY, 29 July 2004, para. 639, footnote 1332.

⁶⁵ *Prosecutor v. Sesay, Kallon and Gbao (RUF Case)*, SCSL-04-15-A (26 October 2009), para. 579.

definition of it.⁶⁶ The Appeals Chamber found the Hostages Convention “useful” in interpreting the war crime of hostage-taking. It drew on the Convention definition in overturning the Trial Chamber’s finding that hostage-taking requires the communication of a threat or demand to a third party.⁶⁷ It found instead that the offence requires only an intention by the perpetrator to compel a third party, which may be proved, for instance, by the issuing of a threat to the detained person alone, or inferred from other evidence. The Appeals Chamber’s review of domestic laws was also said to support that conclusion, with rare exceptions.⁶⁸ There is thus a convergence of the meaning of hostage-taking under the Hostages Convention, humanitarian law, and national law.

While the Hostages Convention is silent on State immunities, in the Pinochet proceedings before the British House of Lords, some judges suggested that the Convention has the effect of removing any immunity for hostage-taking.⁶⁹ This is because either adherence to the Convention constitutes a waiver of immunity or acts of hostage-taking cannot be viewed as official or sovereign acts of State. On this view immunity is removed at least in respect of hostage-taking involving States parties to the Convention (as opposed to all States under customary international law). The issue was not, however, definitively settled in the Pinochet case, because the final decision turned on the treaty crime of torture rather than the less factually well founded allegation of hostage-taking.

The duty on States under article 3 of the Convention to take all measures it considers appropriate to secure the release of a hostage was raised in a regional human rights case concerning Russia’s rescue of hostages from a Moscow theatre. Russia invoked article 3 in defence of its use of gas to storm the theatre, which led to 125 deaths, in response to a claim that it had violated the right to life under article 2 of the European Convention on Human Rights.⁷⁰ The European Court of Human Rights did not address the point, instead deciding the case by applying the Court’s jurisprudence on article 2. This may be because the incident was domestic not transnational. In any event article 3 of the Hostages Convention could not justify violations of human rights law. This view is consistent with many resolutions of the United Nations General Assembly and Security Council urging States to comply with their human rights obligations in countering terrorism.

Interpretation of the Hostages Convention has also arisen in a number of national criminal cases. For example, one United States court found that article 5 of the Convention supports the optional exercise of extraterritorial jurisdiction on the basis of the passive personality principle.⁷¹ Another United States decision clarified that the United States hostage-taking legislation was enacted to implement the Hostages Convention to enable extraterritorial jurisdiction, and thereby expand the more limited reach of existing domestic kidnapping offences.⁷²

While the Convention describes hostage-taking as manifestations of terrorism, the United States and United Kingdom criminal cases confirm that the offence is not limited to political violence. It can apply to a purely domestic, intra-familial abduction,⁷³ and to the many United States cases involving the confinement of illegal aliens where payment is demanded for their release.⁷⁴ The latter can include cases where an initially

⁶⁶ *Ibid.*, para. 577.

⁶⁷ *Ibid.*, para. 580.

⁶⁸ *Ibid.*, para. 582 (the exception being the Canadian Criminal Code, article 279.1).

⁶⁹ *R v. Bow Street Metropolitan Stipendiary Magistrate and others, Ex parte Pinochet Ugarte (No. 3)* [2000] 1 AC 147.

⁷⁰ *Finogenov and others v. Russia* [2011] ECHR 2234 (20 December 2011), para. 186.

⁷¹ *United States v. Yunis* 924 F.2d 1086 (DC Cir 1991) 1090.

⁷² *United States v. Salad* 907 F.Supp.2d 743 (EDVa 2012).

⁷³ *HM, PM v. KH, HM* [2010] EWHC 870 (Fam); and *United States v. Santos-Riviera* 183 F.3d 367 (5th Cir 1999) (confinement of United States citizen infant to demand ransom for her release).

⁷⁴ *United States v. Tchibassa* 452 F.3d 918 (DC Cir 2006); *United States v. Si Lu Tian* 339 F.3d 143 (2d Cir 2003); *United States v. Ferreira* 275 F.3d 1020 (11th Cir 2001); *United States v. Fei Lin* 139 F.3d 1303, supplemented by

consensual agreement to be smuggled for a fee later turns into involuntary confinement.⁷⁵

Detention is not limited to physical restraint, but can extend to threats, coercion, or deception which causes the person to remain under another's control. It thus includes, for instance, where an alien is frightened of her smugglers, witnessed the beatings of others, was threatened, and held in a guarded apartment.⁷⁶ The person's circumstances are relevant, such as where an alien is unfamiliar with the new country, cannot speak the language, and lacks the resources to escape.⁷⁷

However, brief confinement for 15 minutes was not sufficient to constitute hostage-taking, in a case where an illegal alien was held in a "gypsy taxi" extortion scheme until her husband paid to release her, and while awaiting the arrival of police who had been called.⁷⁸ In part this was because although the Hostages Convention is not limited to terrorism, its anti-terrorism background suggests that the offence should not be stretched too far. Even so, detention for a few hours can constitute hostage-taking where, for instance, a vulnerable infant is abducted.⁷⁹

The Hostages Convention has also influenced the development of national civil and administrative laws. A frequently litigated example is the United States' Foreign Sovereign Immunities Act (FSIA), which provides an exception to State immunity in civil proceedings before United States courts against foreign State sponsors of hostage-taking. The United States law offence of hostage-taking implements the United States' obligations under the Hostages Convention and defines hostage-taking in identical terms. The Convention itself does not establish any civil law exception to foreign State immunity for hostage-taking so the FSIA exception reflects domestic not international law.

Nonetheless, the significant number of FSIA cases involving hostage-taking provide useful interpretive guidance on the Convention definition, particularly given the scarcity of criminal or extradition proceedings in national law. Thus, for instance, United States courts have found that the intention of a perpetrator is decisive, not whether his or her purpose or demands were communicated to a third party,⁸⁰ or whether his or her demands are realistic or achievable.⁸¹ Unpleasant imprisonment absent an intent to compel another is not hostage-taking.⁸²

The United States cases have also clarified what it means to "seize" or "detain" a person, namely that a person is held or confined against his or her will for an appreciable period of time.⁸³ Actual physical force or violence is unnecessary as long as the person was threatened, frightened, deceived or coerced so as to cause the person to remain under the offender's control.⁸⁴ Thus a person may be constructively detained, as where Americans were compelled to hide in safe houses or diplomatic premises under the constant fear of capture by Iraqi security forces, where threats to Americans were being used by Iraq to prevent to the United States from attacking it.

In an administrative law case, the Israeli Supreme Court held that a domestic statute authorising administrative detention could not permit detaining non-threatening

United States v. Fei 141 F.3d 1180 (9th Cir 1998); *United States v. Wang Kun Lue* 134 F.3d at 81; *United States v. Lopez-Flores* 63 F.3d 1468 (9th Cir 1995); and *United States v. Carrion-Caliz* 944 F.2d 220 (5th Cir 1991).

⁷⁵ *United States v. Si Lu Tian* 339 F.3d 143 (2d Cir 2003).

⁷⁶ *Ibid.*

⁷⁷ *United States v. Carrion-Caliz* 944 F.2d 220 (5th Cir 1991) 225.

⁷⁸ *United States v. Rodriguez* 587 F.3d 573 (2d Cir 2009).

⁷⁹ *United States v. Santos-Riviera* 183 F.3d 367 (5th Cir 1999).

⁸⁰ *Simpson v. Socialist People's Libyan Arab Jamahiriya* 470 F.3d 356 (DC Cir 2006) 360.

⁸¹ *Wyatt v. Syrian Arab Republic* 362 F.Supp.2d 103 (DDC 2005) 113.

⁸² *Price v. Socialist People's Libyan Arab Jamahiriya* 294 F.3d 82, 352 U.S.App.D.C. 284 (2002).

⁸³ *Vine v. Republic of Iraq* 459 F.Supp.2d 10 (DDC 2006) 17-19.

⁸⁴ *United States v. Si Lu Tian* 339 F.3d 143 (2d Cir 2003) 153.

persons as “bargaining chips”, since that did not comply with article 1 of the Hostages Convention or article 34 of the Geneva Convention Relative to the Protection of Civilian Persons in Time of War.⁸⁵ While those treaty provisions were not domestically binding in the absence of legislation, the Court found that there was a “presumption of compatibility” between international law and domestic law, which applied in the interpretation of the domestic detention statute.

The cases mentioned above illustrate that the Hostages Convention has influenced diverse legal contexts, including criminal, extradition, civil, administrative, human rights, and refugee law.

Related Materials

A. Legal Instruments

International

Universal Declaration of Human Rights, Paris, 10 December 1948, General Assembly resolution 217 (III) of 10 December 1948.

[Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field](#), Geneva, 12 August 1949, United Nations, *Treaty Series*, vol. 75, p. 31.

[Geneva Convention for the Amelioration of the Condition of the Wounded, Sick and Shipwrecked Members of the Armed Forces at Sea](#), Geneva, 12 August 1949, United Nations, *Treaty Series*, vol. 75 p. 85.

[Geneva Convention relative to the Treatment of Prisoners of War](#), Geneva, 12 August 1949, United Nations, *Treaty Series*, vol. 75, p. 135.

[Geneva Convention Relative to the Protection of Civilian Persons in Time of War](#), Geneva, 12 August 1949, United Nations, *Treaty Series*, vol. 75, p. 287.

[Convention relating to the Status of Refugees](#), Geneva, 28 July 1951, United Nations, *Treaty Series*, vol. 189, p. 137.

International Covenant on Civil and Political Rights, New York, 16 December 1966, United Nations, *Treaty Series*, vol. 999, p. 171.

[Convention for the Suppression of Unlawful Seizure of Aircraft](#), The Hague, 16 December 1970, United Nations, *Treaty Series*, vol. 860, p. 105.

[Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation](#), Montreal, 23 September 1971, United Nations, *Treaty Series*, vol. 974, p. 177.

[Convention on the Prevention and Punishment of Crimes against Internationally Protected Persons, including Diplomatic Agents](#), New York, 14 December 1973, United Nations, *Treaty Series*, vol. 1035, p. 167.

[Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts \(Protocol I\)](#), Geneva, 8 June 1977, United Nations, *Treaty Series*, vol. 1125, p. 3.

⁸⁵ *Anonymous (Lebanese citizens) v. Minister of Defence, Final decision*, Israeli Supreme Court (Court of Appeals), FCrA 7048/97.

[Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts \(Protocol II\)](#), Geneva, 8 June 1977, United Nations, *Treaty Series*, vol. 1125, p. 609.

[Rome Statute of the International Criminal Court](#), Rome, 17 July 1998, United Nations, *Treaty Series*, vol. 2187, p. 3.

International [Convention for the Suppression of the Financing of Terrorism](#), New York, 9 December 1999, United Nations, *Treaty Series*, vol. 2178, p. 197.

National

[Australia, Extradition Regulations](#) (1988).

Canada, Criminal Code (R.S.C., 1985, c. C-46).

United States, Foreign Sovereign Immunities Act (FSIA) (1976).

B. Jurisprudence

International

International Court of Justice, [United States Diplomatic and Consular Staff in Tehran \(United States of America v. Iran\)](#), *Judgment, I.C.J. Reports 1980*, p. 3.

International Criminal Tribunal for the former Yugoslavia, [Prosecutor v. Blaskic](#), IT-95-14-A, Appeals Chamber, Judgement of 29 July 2004.

Special Court for Sierra Leone, [Prosecutor v. Sesay, Kallon and Gbao \(RUF Case\)](#), SCSL-04-15-A, Appeals Chamber, Judgment of 26 October 2009.

European Court of Human Rights, [Finogenov and others v. Russia](#), Application Nos. 18299/03 and 27311/03, Judgment of 20 December 2011.

National

United States Court of Appeals for the District of Columbia Circuit, *United States v. Yunis*, 924 F.2d 1086 (1991), 29 January 1991.

United States Court of Appeals for the Fifth Circuit, *United States v. Carrion-Caliz*, 944 F.2d 220 (1991), 27 September 1991.

United States Court of Appeals for the Ninth Circuit, *United States v. Lopez-Flores*, 63 F.3d 1468 (1995), 10 August 1995.

United States Court of Appeals for the Second Circuit, *United States v. Wang Kun Lue*, 134 F.3d 79 (1998), 14 January 1998.

United States Court of Appeals for the Ninth Circuit, *United States v. Fei Lin*, 139 F.3d 1303 (1998), 30 March 1998.

United States Court of Appeals for the Ninth Circuit, *United States v. Fei*, 141 F.3d 1180 (1998), 30 March 1998.

United States Court of Appeals for the Fifth Circuit, *United States v. Santos-Riviera*, 183 F.3d 367 (1999), 29 July 1999.

United States Court of Appeals for the Eleventh Circuit, *United States v. Ferreira*, 275 F.3d 1020 (2001), 11 December 2001.

United States Court of Appeals for the District of Columbia Circuit, *Price v. Socialist People's Libyan Arab Jamahiriya*, 294 F.3d 82, 352 U.S.App.D.C. 284 (2002), 28 June 2002.

United States Court of Appeals for the Second Circuit, *United States v. Si Lu Tian* 339 F.3d 143 (2003), 12 August 2003.

United States Court of Appeals for the District of Columbia Circuit, *Wyatt v. Syrian Arab Republic*, 362 F.Supp.2d 103 (2005), 3 March 2005.

United States Court of Appeals for the District of Columbia Circuit, *United States v. Tchibassa*, 452 F.3d 918 (2006), 7 July 2006.

United States Court of Appeals for the District of Columbia Circuit, *Vine v. Republic of Iraq*, 459 F.Supp.2d 10 (2006), 7 September 2006.

United States Court of Appeals for the District of Columbia Circuit, *Simpson v. Socialist People's Libyan Arab Jamahiriya*, 470 F.3d 356 (2006), 21 November 2006.

United States Court of Appeals for the Second Circuit, *United States v. Rodriguez*, 587 F.3d 573 (2009), 30 November 2009.

United States District Court for the Eastern District of Virginia, *United States v. Salad*, 907 F.Supp.2d 743 (2012), 27 November 2012.

Israeli Supreme Court (Court of Appeals), *Anonymous (Lebanese citizens) v. Minister of Defence*, Final decision, FCrA 7048/97, 12 April 2000.

United Kingdom House of Lords, *R v. Bow Street Metropolitan Stipendiary Magistrate and others, Ex part Pinochet Ugarte*, No. 3 AC 147 (2000).

High Court of Justice of England and Wales, Family Division, *HM, PM v. KH, HM*, [2010] EWHC 870 (Fam), 30 April 2010.

C. Documents

Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations ([General Assembly resolution 2625 \(XXV\) of 24 October 1970](#), annex).

Letter dated 28 September 1976 from the Vice-Chancellor and Minister for Foreign Affairs of the Federal Republic of Germany to the Secretary-General ([A/31/242](#), 28 September 1976).

Sixth Committee of the General Assembly, Summary records of the 55th and 58th meetings of the thirty-first regular session of the General Assembly, held, respectively, on 26 and 30 November 1976 ([A/C.6/31/SR.55](#) and [58](#)).

Report of the Sixth Committee to the General Assembly (Drafting of an international convention against the taking of hostages) ([A/31/430](#), 14 December 1976).

[General Assembly resolution 31/103 of 15 December 1976](#) (Drafting of an international convention against the taking of hostages).

Working paper submitted by the Federal Republic of Germany (A/AC.188/L.3), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II A).

Working paper submitted by Lesotho and the United Republic of Tanzania, later joined by Algeria, Egypt, Guinea, the Libyan Arab Republic and Nigeria (A/AC.188/L.5), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II C).

Working paper submitted by Mexico (A/AC.188/L.6), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II D).

Working paper submitted by Algeria and the United Republic of Tanzania, later joined by Egypt, Guinea, Kenya, Lesotho, the Libyan Arab Jamahiriya and Nigeria (A/AC.188/L.7), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II E).

Working paper submitted by France (A/AC.188/L.8) concerning article 4 of the working paper submitted by the Federal Republic of Germany (A/AC.188/L.3), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II F).

Working paper submitted by the Libyan Arab Jamahiriya (A/AC.188/L.9), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II G).

Working paper submitted by the Syrian Arab Republic (A/AC.188/L.11) concerning the working paper submitted by Algeria, Egypt, Guinea, Kenya, Lesotho, the Libyan Arab Jamahiriya, Nigeria and the United Republic of Tanzania (A/AC.188/L.7), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II I).

Working paper submitted by France (A/AC.188/L.13) concerning the working paper submitted by the Federal Republic of Germany (A/AC.188/L.3), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II K).

Working paper submitted by the Netherlands (A/AC.188/L.14) concerning the working paper submitted by the Federal Republic of Germany (A/AC.188/L.3), reproduced in the Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977, annex II L).

Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/32/39](#), 27 September 1977).

[General Assembly resolutions 32/148 of 16 December 1977](#) (Drafting of an international convention against the taking of hostages).

Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/33/39](#), 4 May 1978).

[General Assembly resolution 33/19 of 29 November 1978](#) (Drafting of an international convention against the taking of hostages).

Report of the Ad Hoc Committee on the Drafting of an International Convention against the Taking of Hostages ([A/34/39](#), 20 March 1979).

Report of the Working Group on the Drafting of an International Convention against the Taking of Hostages, 16 November 1979 (A/C.6/34/L.12, 16 November 1979, and A/C.6/34/L.12/Corr.4, 3 December 1979).

Sixth Committee of the General Assembly, Summary record of 62nd meeting of the thirty-fourth regular session of the General Assembly, held on 7 December 1979 ([A/C.6/34/SR.62](#)).

[Security Council resolution 1267 \(1999\) of 15 October 1999](#).

[Security Council resolution 1373 \(2001\) of 28 September 2001](#).

D. Doctrine

C. Aston, "The United Nations Convention Against the Taking of Hostages: Realistic or Rhetoric?", in *British Perspectives on Terrorism*, Paul Wilkinson, ed., Allen & Unwin, Australia, 1981.

J. Lambert, *Terrorism and Hostages in International Law: A Commentary on the Hostages Convention 1979*, Grotius Publications, Cambridge, 1990.

Annex 494

Els De Busser, Open Source Data and Criminal Investigations, Groningen J.I.L. 2(2) (2014)

Open Source Data and Criminal Investigations: Anything You Publish Can and Will Be Used Against You

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Keywords

DATA PROTECTION; INFORMATION EXCHANGE; OPEN SOURCE DATA; RIGHT TO BE FORGOTTEN

Abstract

Various misconceptions exist regarding open source data, what is meant by this term and how these data can legally be used. This contribution focuses on developing a comprehensive definition of the term and highlights the differences with similar – often confusing – concepts. The fact that open source data are publicly available does not mean that they can be used and processed in any way or for any purpose. As far as open sources contain personal data, the general data protection legislation (national as well as EU and Council of Europe legislation) is applicable. Several difficulties however arise, especially when different types of data are mixed.

This can happen in the context of a criminal investigation. The use of personal data for the purpose of prevention, investigation or prosecution of criminal offences is protected by more specific legal provisions to protect the secrecy of the investigation as well as the fundamental rights of the suspect and the victim(s). The fair trial rights of article 6 ECHR should be respected once a criminal charge has been made.

Open source data are vulnerable for abuse by any individual. Additionally, they are widely available and distributable when the internet is used. In several instances open source data have been used for the purpose of vigilantism (individuals taking law enforcement into their own hands). It is important to draw the line between a legal use of open source data, including the use of open source data for the purpose of a criminal investigation and the illegal use of open source data.

This contribution combines the elements of open source data, personal data and criminal investigations. Answers to the following research questions are sought:

- What are open source data?
- How to protect personal data included in open source data?
- How to use open source data in criminal investigations while respecting data protection legislation?

I. Introduction

Various misconceptions exist regarding open source data, what is meant by this term and how these data can legally be used. This contribution focuses on developing a comprehensive definition of the term and highlights the differences with concepts that seem similar and therefore are often confused. The fact that open source data are publicly available does not mean that they can be used and processed in any way or for any

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purpose. As far as open sources contain or consist of personal data, general data protection legislation (national as well as European Union and Council of Europe legislation) is applicable. Several difficulties, however, arise related to the nature of the data and their use or processing.

Besides data protection laws, the use of personal data for the purpose of prevention, investigation or prosecution of criminal offences is also protected by more specific legal provisions to protect the secrecy of the investigation as well as the fundamental rights of the suspect and the victim(s). The fair trial rights of Article 6 European Convention of Human Rights should be respected once a criminal charge has been made. This goes for personal data that are open source as well as closed source data. More and more open source data are used by law enforcement and intelligence services, especially where social media is concerned. In 2012 LexisNexis® Risk Solutions surveyed 1,200 United States federal, state, and local law enforcement professionals concluding that four out of five use various social media networks to assist in investigations with Facebook and YouTube ranking among the most used platforms. This use concerned identifying people and locations; discovering criminal activity and locations; and gathering evidence. Of all respondents, 67% reported believing that social media helps solving crime more quickly.¹ Even though this survey was conducted in the United States, it shows the rising importance of social media as an investigative tool for law enforcement.

Open source data are vulnerable for abuse by any individual. Additionally, they are widely available and distributable when the Internet is used. In several instances open source data have been used for the purpose of vigilantism (individuals taking law enforcement into their own hands). It is important to draw the line between a legal use of open source data, including the use of open source data for the purpose of a criminal investigation and the illegal use of open source data. Lastly, since the Court of Justice of the European Union (CJEU) ruled on a landmark case against Google in May 2014, it is equally relevant to discuss here the catchphrase “the right to be forgotten”, the fact that it does not exist and what this debate is really about.

Referring to the so-called Miranda rights in the title—the rights that should be read by US law enforcement officers when taking an individual into custody—is not meant to sound harsh or depressing. It is rather intended to create awareness for Internet and social media users indiscriminately, publicly posting personal data identifying themselves or others. The consequences of this recent trend are not always directly perceived, which makes it all the more difficult to control. Besides raising awareness, this contribution focuses on identifying the precise problem(s) rather than offering concrete solutions.

Combining the elements of open source data, personal data and criminal investigations, this paper intends to offer an answer to questions such as what are open source data; how can personal data included in open source data be protected; and how can open source data be used in criminal investigations while respecting data protection legislation? The legal instruments that are used to answer these questions are the relevant legal instruments adopted by the Council of Europe (CoE) and by the European Union (EU). These include the European Convention on Human Rights (ECHR), the Convention on the processing of personal data by automated means (Data Protection

¹ LexisNexis Risk Solutions, *Role of Social Media in Law Enforcement Significant and Growing*, available online at lexisnexis.com/en-us/about-us/media/press-release.page?id=1342623085481181#sthash.pbREo4je.dpuf (accessed 30 July 2014).

Convention),² Resolutions 73(22) and 74(29), and Recommendation 87(15). For the EU the most relevant legal instruments include Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (Directive 95/46/EC),³ the Framework Decision 2008/977/JHA of 27 November 2008 on the protection of personal data processed in the framework of police and judicial cooperation in criminal matters (Framework Decision 2008), and the legislative proposals that are being negotiated at the present time to reform both the Directive⁴ and the Framework Decision.⁵ Using these legal instruments does not mean that the geographical scope of this paper is limited to the EU. Rather, all Member States of the CoE are bound by the same data protection standards as well as countries that are not Member States of the CoE.

II. Defining Open Source Data

In order to define what open source data are, it is necessary to first explain what they are not. Open source data are not identical to personal data but can contain or consist of personal data. Traditionally, personal and non-personal data are distinguished based on the characteristic of identifying an individual or enable to identify an individual. Personal data enable one to “single out” a person. The fact whether personal data are open source or not is not part of the definition. On the contrary, the definition of personal data includes any information, which can be open source or closed source. Open source data in their turn can be personal or non-personal.

II.1. Personal Data

The concept of personal data is frequently confused with the right to a private life or privacy. Both concepts overlap, but only to a certain extent. They are certainly not identical. Where personal data are those data that identify or enable to identify an individual, the private life of a person consists of personal as well as of non-personal data. As one of the most difficult concepts to explain—not in the least because of its evolvment in line with technological advancements—the best definition is still the traditional definition introduced by Warren and Brandeis in 1890 describing the right to a

² Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data, 1981, ETS No. 108 available online at <conventions.coe.int/Treaty/en/Treaties/Html/108.htm> (accessed 27 September 2014) (CoE Data Protection Convention).

³ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, available online at <eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31995L0046&from=EN> (accessed 1 2014) (Data Protection Directive 95/46/EC).

⁴ Proposal for a Regulation on the protection of individuals with regard to the processing of personal data and on the free movement of such data, 25 January 2012, COM (2012)11 final, available online at <ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf> (accessed 16 November 2014).

⁵ Proposal for a Directive on the protection of individuals with regard to the processing of personal data by competent authorities for the purposes of prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and the free movement of such data, 25 January 2012, COM (2012), 10, available online at <eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0010:FIN:EN:PDF> (accessed 3 November 2014).

private life as the right to be let alone.⁶ Exercising the right to be let alone and not tolerate interference from private or public persons such as the government, involves more than only personal data.⁷ One should thus be careful not to confuse both concepts. Nonetheless, in the jurisprudence of the European Court of Human Rights (ECtHR) the right to a private life has been used to include rulings on personal data. After all, a genuine right to data protection is so far only included in the EU Charter on Fundamental Rights and Freedoms, not in the ECHR.

The data protection standards applicable in the EU and the CoE Member States originate from the CoE Data Protection Convention and two preceding Resolutions.⁸ In the Convention and in Directive 95/46/EC, personal data are defined as any information relating to an identified or identifiable individual.⁹ Public sector information is also covered by this definition.¹⁰ An identifiable person is a physical¹¹ person who can be easily identified, meaning not by using very sophisticated¹² methods that should be judged considering technological evolutions.¹³

“Any information” refers to any type of information, objective as well as subjective statements concerning objects, events or persons. Opinions, assessments or conclusions about objects or persons establish subjective information. The format in which the information is held or its carrier is not relevant. Information in any structured or

⁶ Often incorrectly quoted as “to be *left* alone”. See Warren, S. D. and Brandeis, L. D., “The right to privacy”, *Harvard Law Review*, vol. 4, 1890, 193–220. See also Council of Europe, Parliamentary Assembly, *Recommendation 509(1968) on human rights and modern scientific and technological developments*, 1968, available online at <assembly.coe.int/Main.asp?link=/Documents/AdoptedText/ta68/EREC509.htm> (accessed 30 July 2014). This Recommendation started the legislative development of data protection rules and guidelines.

⁷ See also De Busser, E., *Data Protection in EU and US Criminal Cooperation*, Maklu Publishers, Antwerp-Apeldoorn, 2009, 48–52.

⁸ The Convention’s Explanatory Report explained that the terms and definitions generally follow those used in Resolutions (73) 22 and (74) 29. Some modifications and additions have been made in view of recent national legislation and having regard to the special problems called forth by transfrontier data flows.

⁹ Article 2(a) CoE Data Protection Convention; Article 2(a) Data Protection Directive 95/46/EC.

¹⁰ See Article 29 Data Protection Working Party, *Opinion 3/99 on public sector information and the protection of personal data*, WP 20, 3 May 1999, available online at <ec.europa.eu/justice/data-protection/article-29/documentation/opinion-recommendation/files/1999/wp20_en.pdf> (accessed 30 July 2014).

¹¹ In accordance with Article 3, paragraph 2(b) of the Convention, Member States have the opportunity to declare the provisions of the Convention applicable to legal persons. Declarations in that sense have been submitted by Albania, Austria, Italy, Liechtenstein and Switzerland.

¹² The focus on ‘very sophisticated methods’ as is mentioned in the Explanatory Report to the Data Protection Convention can lead to confusion. One might think that the higher the level of sophistication in the method used in order to identify a person, the less likely it is for the personal information that is detected this way to fall within the scope of the Convention. However—and rightfully pointed out by Bygrave—the higher the level of sophistication is, the easier it is for a person to identify an individual and consequently have access to personal data. Bygrave, L.A., *Data protection law. Approaching its rationale, logic and limits*, Kluwer law International, The Hague, 2002, 43–44.

¹³ Council of Europe, Explanatory Report to the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data, ETS No. 108, 1981, available online at <conventions.coe.int/treaty/en/Reports/Html/108.htm> (accessed 30 July 2014). See also the remarks made by the Court in: *Klass and others v. Germany*, App no 5029/71, para. 4, and ECtHR, 16 February 2000, *Amman v. Switzerland*, App no 27798/95, Section 56. See also Concurring Opinion of Judge Pettiti in ECtHR, 2 August 1984, *Malone v. UK*, App no 8691/79.).

unstructured form (numerical, photographic, acoustic or stored in a computer file)¹⁴ is covered by the definition, taking into consideration future technological developments.

The phrase “related to” would logically mean that the information is about a specific person.¹⁵ However, the EU’s Article 29 Data Protection Working Party¹⁶ in a 2005 opinion on the application of Directive 95/46/EC on the practice of RFID-tags¹⁷ stated that this phrase ‘refers to the identity, characteristics or behaviour of an individual or if such information is used to determine or influence the way in which that person is treated or evaluated’.¹⁸ In view of recent discussions on gathering data on people’s online surfing behaviour and personalised online advertising, it is significant that also such data can qualify as personal data. Nevertheless, data gathered by RFID tags or surfing behaviour would not be open source data.

In 2007 the Data Protection Working Party divided the meaning of “relating to” in two parts. On the one hand, certain content is required to make information relate to a person, meaning it should provide in the person’s identity, his or her characteristics or behaviour. No purpose or consequence on behalf of the handler of the data is necessary. On the other hand, the use that is made of the information is divided into demonstrating either an element of purpose to assess, treat in a different way or influence a person’s status or behaviour or an element of result or impact. The latter refers to the impact on a person’s rights and interests or the different treatment of a person as a result, independent of the question whether this result was achieved.¹⁹

Singling out an individual from the general population or a smaller group of persons by the use of information, or even the possibility of distinguishing an individual from a multitude or a category of persons, constitutes the determining factor in personal data. Identifying someone’s unique behaviour can already be sufficient, for example by means of the aforementioned RFID-tags.²⁰ A person can be isolated directly by using identifying elements such as a name, provided that the name is sufficiently distinctive. Whether more identifiers (address, phone number, physical characteristics, employment information, etc.) are needed, depends on the context. The same piece of information can be personal data in one context and not be sufficient as an identifier in a different setting.²¹

Recital 26 of the Directive 95/46/EC preamble includes a reasonable means-test with regard to the means used for identifying a person. The Data Protection Working Party

¹⁴ Article 29 Data Protection Working Party, *Opinion 4/2007 on the concept of personal data*, WP 136, 20 June 2007, available online at <ec.europa.eu/justice/policies/privacy/docs/wpdocs/2007/wp136_en.pdf> (accessed 30 July 2014), 7.

¹⁵ *Id.*, 9.

¹⁶ The name “Article 29 Data Protection Working Party” is derived from the Article 29 of Directive 95/46/EC that set up this working party. It publishes opinions on specific issues related to the application of the Directive.

¹⁷ Radio Frequency Identification Technology stands for a microchip storing data on certain behaviour, for example purchasing behaviour, by the person carrying the tag, which is read by the controller of the tag.

¹⁸ Article 29 Data Protection Working Party, *Working Document on data protection issues related to RFID technology*, WP 105, 19 January 2005, 8.

¹⁹ Data Protection Working Party Opinion 4/2007, *supra* nt. 14, 10–11.

²⁰ Data Protection Working Party Opinion 4/2007, *supra* nt. 14, 13–14; see also above nt. 17.

²¹ See CJEU 6 November 2003, *Lindqvist*, C-101/0101, para. 27. In this case the Court decided on data on an Internet page referring to person’s names in conjunction with their phone number or information concerning their working conditions and hobbies, to be personal data within the meaning of Directive 95/46/EC.

added the criteria of cost²² of conducting the identification, the intended purpose, the way the processing is structured, the advantage expected by the controller, the interests at stake for the individuals, the risk of organisational dysfunctions and technical failures.²³ All means that are likely reasonably used by the handler of the data to identify the person concerned should be considered by the judge deciding upon a case-by-case-basis. The phrase “likely reasonably” causes confusion as to its exact meaning, in particular by joining such element of probability with the element of difficulty.²⁴ The fact that the handler of the information would be capable of identifying a person does not necessarily mean that he will in fact put this into practice. However, this would not cause the data to lose their quality of personal data.²⁵

During the negotiations on the reform of the data protection legal framework in the EU, the concept of singling out was added to the text of the preamble in the amendments made by the European Parliament.²⁶ This was not a new notion as the Data Protection Working Party already used it in its 2007 opinion on the concept of personal data.²⁷ Data that can lead to the singling out of a person from a group of persons thus needs to be so specific—depending on the size of the group²⁸—that only one individual can be isolated from the rest of the group.

II.2. Open Source Data

Open source data or open data do not have an official definition that is laid down in any legal instrument. Many documents use the term without defining it, yet limited sources have included their own definition.²⁹ The common characteristic of the definitions lies in the information being publicly available. When data are closed off from the general public, they can clearly not be considered open source data. When a fee is required to obtain the data, can they still be considered open source? And does it include information on social media profiles that are not public but still open to thousands of users? Where do we draw the line?

²² The Article 29 Data Protection Working Party explicitly mentions the costs as a criterion for concluding on the identification (even though it states it is not the only factor). In 1997 the Council of Europe no longer included costs as a reliable criterion due to developments in computer technology. See Council of Europe, Committee of Ministers, *Recommendation No. R(97)5 on the protection of medical data*, 13 February 1997, available online at wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=564487&SecMode=1&DocId=560582&Usage=2 (accessed 30 July 2014).

²³ Data Protection Working Party Opinion 4/2007, *supra* nt. 14, 15.

²⁴ Bygrave, L. A., *Data protection law. Approaching its rationale, logic and limits*, Kluwer law International, The Hague, 2002, 44.

²⁵ *Ibid.*

²⁶ European Parliament legislative resolution of 12 March 2014 on the proposal for a regulation of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation) (COM(2012)0011 – C7-0025/2012 – 2012/0011(COD)), available online at europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2014-0212+0+DOC+XML+V0//EN (accessed 3 November 2014), Amendment 66.

²⁷ Data Protection Working Party Opinion 4/2007, *supra* nt. 14, 13.

²⁸ For example when data refers to a dark haired woman in her thirties living in New York, the group of people will be too large to identify this individual. When the data are more specific and refer to a dark haired woman in her thirties living in New York and teaching English literature at University X in Manhattan, New York City, this would single out a specific individual.

²⁹ See also Eijkman, Q. and Weggemans, D., “Open source intelligence and privacy dilemmas”, *Security and Human Rights*, No. 4, 2012, 286-287.

Open source data is not a new concept as such, demonstrated by the references in guidelines and manuals for intelligence services. Nevertheless, the boom of social media and other sources on the Internet have given it a new dimension by flooding the pool of existing open source data. That does not mean that open source data need to be digital. Even if the majority of open source data today will be found in digital form, observations, photographs or paper publications may just as well be open and publicly available data. The CoE Convention on Cybercrime uses the term open source data, but only indirectly refers to it as publicly available data without giving a definition.³⁰ With due care not to confuse information and intelligence notions, it is still useful to examine the definitions used in the area of (criminal as well as military) intelligence because open source data are also for intelligence services a necessary source, possibly even a starting point.

The United Nations Office on Drugs and Crime (UNODC) describes open source data as information that is publicly available and adds that one of the main difficulties in working with this type of source is evaluation, as information available in the public domain can frequently be biased, inaccurate or sensationalised.³¹ This definition is clearly accommodated towards criminal intelligence analysts and is much wider than information containing personal data. In its *Open Source Intelligence Handbook*, North Atlantic Treaty Organization (NATO) first separates open source intelligence from academic, business or journalistic research by highlighting that “it represents the application of the proven process of national intelligence to a global diversity of sources, with the intent of producing tailored intelligence for the commander”.³² The proven process of national intelligence logically refers to the analysing of information for military purposes. Nonetheless, NATO’s discerning definitions of four types of information and intelligence are relevant in this discussion due to the elements of restriction of information for a specific person or group of persons on the one hand and the element of verification or accuracy on the other hand. According to NATO, open source information means that a form of processing has taken place from the raw open source data.³³ It refers to those data that can be put together, generally by an editorial process that provides some filtering and validation as well as presentation management. Open source information is thus generic information that is usually widely disseminated and includes newspapers, books, broadcast, and general daily reports. Open source intelligence refers to information that has been deliberately discovered, discriminated, distilled, and disseminated to a select audience in order to address a specific question. This type of information applies the proven process of intelligence to the broad diversity of open sources of information, and creates intelligence. A more advanced type of information is the validated open source intelligence. This is defined as information to which a very high degree of certainty can be attributed. It can be produced by an all-source intelligence professional, with access to classified intelligence sources. It can also

³⁰ Council of Europe, *Explanatory Report to the Convention on Cybercrime*, ETS No. 185, 8 November 2001, available online at <conventions.coe.int/Treaty/en/Reports/Html/185.htm> (accessed 3 November 2014).

³¹ United Nations Office on Drugs and Crime, *Criminal Intelligence - Manual for Analysts*, 2011, available online at <unodc.org/documents/organized-crime/Law-Enforcement/Criminal_Intelligence_for_Analysts.pdf> (accessed 20 July 2014), 12.

³² NATO, *Open Source Intelligence Handbook*, 2001, available online at <oss.net/dynamaster/file_archive/030201/ca5fb66734f540fbb4f8f6ef759b258c/NATO%20OSINT%20Handbook%20v1.2%20-%20Jan%202002.pdf> (accessed 20 July 2014), 1–3.

³³ Open source data is defined as the raw print, broadcast, oral debriefing or other form of information from a primary source.

come from an assured open source to which no question can be raised concerning its validity.³⁴ Open source data and open source information are thus in the NATO definitions meant for a wider audience and have been subject to a lower degree of scrutiny, while open source intelligence and validated open source intelligence are rather conclusions drawn from the data and information, the degree of accuracy and reliability is higher and it is meant for a restricted audience.

Open source data can be authored and developed by any person. In some cases the author or producer is unknown and the reliability or accuracy cannot possibly be verified, for example fake profiles on social media. In other cases, such as journalism, the author is known and the information has a high degree of reliability and accuracy. Still this is considered open source data.³⁵ It is thus not relevant for the description of open source data whether its reliability and accuracy has been checked.

The size of the audience to whom the data are available brings up the question of payment. Can data that is only available on payment be considered open source or not? It would not be realistic to limit the definition of open source data to freely available data as technically one would have to consider the cost of Internet connections even when newspapers or social media have freely accessible websites.³⁶ However, open source data can also exist in the offline world. For example, an expensive book or report can be publicly available, but due to its price, it is limited in accessibility. For this reason the element of payment should not be included in the definition of open source data, rather the aspect of availability to a wide or restricted public is significant. A restricted public is not the general population but a group of people that is separated from the general population based on one or more filtering conditions such as their professional occupation, their paid or unpaid subscription to a newspaper or their friendship with a person on a social media profile. The latter brings up a particular question regarding the threshold that is required. When the account holder of a Facebook profile that is not public posts information, one would tend to label this information as closed source data. However, if this Facebook user has over 5,000 friends, can we still rightfully speak of closed source data? In addition, every one of these friends can share the information with his or her friends creating a snowball effect and an uncontrollable distribution of the information. The same goes for a newspaper that has thousands of paying subscribers who can spread information further. A solution could be to interpret the term "restricted public" as referring to the ability to specify the recipients of the data and to limit the dissemination of the information. This interpretation results in any information that is posted on a Facebook profile allowing the friends of the account holder to share, should be labelled as open source data. This does not mean that any person can do anything he or she wants with the data, for two reasons. First, the fact that such data are open source does not mean that they are reliable or accurate. Second, open source data can contain personal data. If this is the case they are protected by data protection regulations.

Developing a definition of open source data that is not exclusively meant for the field of criminal and military intelligence, it is clearer to describe what open source data are not rather than to describe what is covered by the term. Based on the analysis above,

³⁴ Explanatory Report to the Convention on Cybercrime, *supra* nt. 30.

³⁵ See above, nt. 29.

³⁶ Even in the description of personal data in 1997, the Council of Europe did not consider cost a reliable criterion due to the developments in computer technology. Council of Europe Committee of Ministers, *Recommendation No. R(97)5 on the protection of medical data*, 13 February 1997, available online at <wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=564487&SecMode=1&DocId=560582&Usage=2> (accessed 30 July 2014).

open source data can be described as any information that is not restricted to a specified public and that is not necessarily reliable or accurate. Whether or not the information identifies or enables to identify an individual is not part of the definition since open source data can include both personal data and non-personal data.

III. Personal Data Protection

When open source data contain personal data, they are protected by the traditional data protection standards. These are laid down in binding legal instruments. The data protection legal instrument that has the widest geographical scope and is also the oldest international convention on this matter is the 1981 CoE Data Protection Convention. Ratified by forty six states, the Convention has introduced the basic principles to be complied with when personal data are processed. Even though its scope is limited to automatic processing, many states have widened the scope of their implementing legislation to also include non-automatic data processing. In this part, the data protection standards are applied to the central theme of open source data including the particular challenges that this type of data can raise for data protection.

III.1. Data Protection Standards

As the basic binding³⁷ legal instrument, the Data Protection Convention sets out the five minimum requirements personal data should fulfil. Article 5 of the Convention was based on the text of two older CoE Resolutions³⁸ and distinguishes two groups of standards: quality standards for personal data on the one hand, and quality standards for the processing of personal data on the other hand. Both are divided into more detailed principles that will be dealt with here in line with the two fundamental legal standards presented by the CoE.³⁹ Besides the data subject giving his or her consent, derogations are allowed but only in accordance with Article 9 that is in turn based on the provisions of Article 8 ECHR. It should be pointed out that for the EU Member States, the standards of the Convention have been implemented and further specified in Directive 95/46/EC for commercial matters and in Framework Decision 2008 for criminal matters.

³⁷ As non-binding instruments, the OECD Guidelines Governing the Protection of Privacy and Trans-border Flows of Personal Data, C(80)58/Final, 23 September 1980 (OECD Guidelines) and the United Nations Guidelines concerning Computerized Personal Data Files, General Assembly, 14 December 1990, encompass the same basic principles, leaving room for national legislators to implement data protection rules based on these guidelines (UN Guidelines).

³⁸ Resolution (73) 22 of the Committee of Ministers of 26 September 1973 on the Protection of the Privacy of Individuals *vis-à-vis* Electronic Data Banks in the Private Sector, available online at <wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=589402&SecMode=1&DocId=646994&Usage=2> (accessed 21 September 2014); Resolution (74)29 of the Committee of Ministers of 20 September 1974 on the Protection of the Privacy of Individuals *vis-à-vis* Electronic Data Banks in the Public Sector, available online at <wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=590512&SecMode=1&DocId=649498&Usage=2> (accessed 21 September 2014).

³⁹ Explanatory Report of the Council of Europe Convention for the Protection of Individuals with Regards to the Automatic Processing of Personal Data, ETS no. 108, Section 40, available online at <conventions.coe.int/Treaty/EN/Reports/Html/108.htm> (accessed 27 September 2014).

III.1.1. Quality Standards for Personal Data

III.1.1.1. Accuracy and Reliability

Ensuring the accuracy of personal data that are processed and updating them whenever necessary is the first standard of data protection. In other words, this standard assures the correspondence of the data to the reality they refer to, such as a person's name and address, employment status, health data, etc. The Data Protection Convention provides the data subject (the person who is identified by the data) with the right to have data corrected or erased if they do not comply with this standard. This implies notification to the data subject of the fact data were gathered and the purpose thereof, unless the individual already has this information or unless other exceptions apply such as the prevailing interests of an ongoing investigation.

As additional protection, Directive 95/46/EC assigns the data controller as the responsible party for ensuring the accuracy of the data as well as updates.⁴⁰ The data controller is the natural or legal person, public authority, agency or any other body which alone or jointly with others determines the purposes and means of the processing of personal data.⁴¹ The frequency of updates is not regulated. Although United Nations (UN) Guidelines recommend updates to be held regularly or when the data contained in a file are used,⁴² the Convention and the Directive limit updating data to "where necessary".⁴³ The Organisation for Economic Co-operation and Development Guidelines mention that data quality standards are not intended to be more far-reaching than is necessary for the purposes for which the data are used.⁴⁴ For example, data processed for historical or statistical purposes do not necessarily need updating.

In accordance with the definition of open source data developed in this contribution, they are not necessarily accurate or reliable. When open source data contain data that identify or enable to identify an individual however, they should also be updated or corrected when necessary. Considering the possibly wide and uncontrollable distribution of open source data, updating and correcting can only be done at the source, whether this is an update on a social media page or a newspaper publishing an erratum. Logically, the data subject can enforce his or her right to correct or erase false personal data that are open source.

⁴⁰ Article 6, Section 1(d) and Section 2, Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, available online at <eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:en:HTML> (accessed 27 September 2014).

⁴¹ *Id.*, Article 2(d).

⁴² Article A.2, GA Resolution 45/95 (68th plenary meeting) A/RES/45/95 14, December 1990.

⁴³ Article 5(d) CoE Data Protection Convention; Article 6(1)(d) Data Protection Directive 95/46/EC.

⁴⁴ Article 53, OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data, available online at <oecd.org/internet/ieconomy/oecdguidelinesontheprivacyandtransborderflowsofpersonaldata.htm> (accessed 27 September 2014).

III.1.1.2. Adequate, Relevant and Proportionate Personal Data

Personal data should be adequate, relevant and not excessive in relation to the purposes they are gathered and processed for. The Data Protection Convention⁴⁵ and the Directive⁴⁶ provide for a qualitative and a quantitative condition;⁴⁷ no personal data should be collected and stored in view of a potential future use, without having an exact view on the purpose it would be used for.⁴⁸ This was one of the reasons why on 8 April 2014 the CJEU annulled the controversial Directive 2006/24/EC (Data Retention Directive) obliging telecommunication providers to store personal data for periods of time up to two years in case they may be needed in a future criminal investigation or prosecution.⁴⁹

A qualitative connection should exist between the personal data and the purpose. If there is no direct nexus—for example the same result can be achieved by other less intrusive means⁵⁰—the data are not adequate or relevant in relation to the purpose. No personal data can be processed for undefined purposes,⁵¹ a specified purpose should be provided as well as a direct link between purpose and data. Respecting the proportionality rule means that the data controller should determine and distinguish the minimum amount of personal data needed in order to successfully accomplish a specific purpose and limit its processing to these data.⁵² Blanket data collection or fishing expeditions⁵³ are not in line with the data protection standards.⁵⁴

The purpose for the processing of personal data included in open source data could be journalistic purposes or academic research. Determining whether personal data are in such cases adequate, relevant and not excessive can be challenging. The recent case before the Court of Justice on the debated and often misunderstood catchphrase ‘the right to be forgotten’ demonstrates how difficult the adequacy and relevance of personal data in open source situations can be. For this reason a separate part of this contribution is dedicated to an analysis of the Court of Justice ruling of spring 2014.

⁴⁵ Article 5(c), CoE Data Protection Convention.

⁴⁶ Article 6, Section 1(c), Data Protection Directive 95/46/EC.

⁴⁷ Also the non-binding UN Guidelines, Section A.3 and OECD Guidelines, para. 53 provide in this rule.

⁴⁸ This should be distinguished from the case in which data are gathered and kept for a particular foreseeable emergency which may never occur, for example, where an employer holds details of blood groups of employees engaged in hazardous occupations. Information Commissioner, Data Protection Act 1998, Legal Guidance, 1998, 37.

⁴⁹ European Court of Justice (ECJ), 13 May 2014, *Google Spain SL, Google Inc. v. Agencia Española de Protección de Datos (AEPD), Mario Costeja González*, C-131/12.

⁵⁰ For example the Belgian Privacy Commission did not authorise the National Organization for the Identification and Registration of Dogs access to the national register of inhabitants based on the lack of proportionality, since in case a dog owner should be contacted, local or federal police authorities can be involved in order to find the owner’s contact data. Belgian Privacy Commission, Advise no. 38/2001, 8 October 2001.

⁵¹ *Open Source Intelligence Handbook*, *supra* nt. 32, 41.

⁵² Information Commissioner, Data Protection Act 1998, Legal Guidance, 1998, 36.

⁵³ Fishing expeditions refer to random and untargeted searches in a large collection of data in an attempt to find relevant information.

⁵⁴ See Committee of Ministers, Resolution (1973) 22, Article 21, in which adopting a rule that would ‘halt unbridled hoarding of data’ is recommended.

III.1.1.3. No Such Thing as a Right to Be Forgotten

The so-called right to be forgotten became a catchphrase in 2012 with the launch of the EU data protection legal framework reform. The term however is fundamentally incorrect. There is no such thing as a right to be forgotten and there never will be as long as the individual human memory and the collective memory cannot be physically tampered with.⁵⁵ What exists in accordance with applicable data protection rules is a right to have personal data corrected, updated or deleted when necessary. This is nothing new as this right has been in existence since the aforementioned data quality standards were laid down in the 1981 Data Protection Convention.

On 13 May 2014 the Court of Justice ruled on a preliminary question brought before it by the Spanish Audiencia Nacional. The Court decided that the world's most popular search engine Google is responsible for removing links to personal data that are no longer relevant to the purpose they were processed for. Data subject in the case is Costeja González, a Spanish citizen who had social security debts in the late nineties. The recovery of these debts led to a real-estate auction that was in accordance with an order by the Ministry of Labour and Social Affairs announced in newspaper *La Vanguardia* with the purpose to give the auction maximum publicity and attract as many bidders as possible. In 1998, not every newspaper had an online version as is the case today. Also, *La Vanguardia* has in the meantime made its publication and archive available online, including the announcement mentioning Costeja González. When he realised the open source availability of this information after a Google search on his name, he submitted complaints with the Spanish data protection authority against the newspaper and against Google. According to the data protection authority, the publication by *La Vanguardia* was legally justified because of the order by the Ministry of Labour and Social Affairs. As a result, this complaint was rejected. The complaint against Google and the request that Google remove the links to the published personal data was brought before a national judge, who sent a request for a preliminary ruling to the Court of Justice. Contrary to what the Advocate General to the Court of Justice concluded, the Court first of all considered Google a data controller for the activity consisting in finding information published or placed on the Internet by third parties, indexing it automatically, storing it temporarily and, finally, making it available to Internet users according to a particular order of preference. Secondly, the Court considered the search engine also responsible for removing the links making the information concerning Costeja González available on the Internet.

The personal data as such are not contested in this case as they are not incorrect. Nevertheless, according to Costeja González an announcement for a real-estate auction held in 1998, published for the purpose of ensuring a higher amount of bidders has lost all relevance two decades later. Because personal data should be relevant for the purpose they were processed for, and should not be stored in a database longer than is necessary for that purpose, thus far the Court of Justice's ruling is acceptable. Holding Google responsible for the fact that this announcement is still available today however is focusing on the wrong target. Google only makes information that already exists searchable and creates an index of search results; it did not create the data, nor was Google the source of the information as such. Requiring Google to remove the links is not the correct issue to

⁵⁵ See also De Hert, P. and Papakonstantinou, V., "How the European Google Decision May Have Nothing To Do With a Right to Be Forgotten", *Privacy Perspectives*, International Association of Privacy Professionals, 19 June 2014, available online at <privacyassociation.org/news/a/how-the-european-google-decision-may-have-nothing-to-do-with-a-right-to-be> (accessed 27 September 2014).

address from a data protection point of view. Even after removal of the link, the information is still available on the La Vanguardia website. Many countries have legal provisions on the publication of certain announcements or judgments that entered into force before the development of the Internet. In the meantime, the concept of publication has evolved. It now also includes online publication, making newspapers available on a wider scale and for a possibly indefinite period of time. The real issue here is the fact that the personal data are still present on the La Vanguardia website two decades after it was legal and necessary to publish it for a particular real-estate auction. The correct target is therefore the national Spanish law and its data retention provisions, not Google. The Court of Justice was logically limited by the scope of the request for a preliminary ruling but could have at least ruled that Google was not responsible for removing the links in question.

Besides the described data protection issue in this case, it is also dangerous to put a private company in a position to decide whether or not the link to certain information is relevant. A search engine's interests are of a commercial nature and do not encompass the rights of the data subject. This is a task for a data protection authority or a judge, not a private company. Moreover, Google is now overwhelmed with over 90,000 requests for the removal of links since the Court of Justice ruling.⁵⁶ The company has even reinstalled links to newspaper articles from the Guardian after the British newspaper protested their removal.⁵⁷ This shows the difficulties for a private company to be in such a position and the inevitable tension with the freedom of information.

III.1.2. Quality Standards for the Processing of Personal Data

Personal data should be obtained and processed fairly and lawfully. This data protection rule means that gathering personal data, and as a possible result infringing upon a person's right to a private life, can only be done when this encompasses lawfully derogating from Article 8 ECHR. In other words, the gathering of personal data must be laid down in law, it should have a legitimate aim and it should be necessary in the interest of protecting state security, public safety, the monetary interests of the state or the suppression of criminal offences or in the interests of protecting the data subject or the rights and freedoms of others. Two principles complete the quality standards for data processing: the purpose limitation principle and the data retention principle.

⁵⁶ Schechner, S., "Google Grants Majority of 'Right to Be Forgotten' Requests", *The Wall Street Journal*, 24 July 2014, available online at <online.wsj.com/Articles/google-grants-more-than-half-of-right-to-be-forgotten-requests-processed-so-far-1406223241?mod=yahoo_hs> (accessed 27 September 2014).

⁵⁷ Lee, D., "Google reinstates 'forgotten' links after pressure", *BBC News*, 4 July 2014, available online at <bbc.com/news/technology-28157607> (accessed 27 September 2014).

III.1.2.1. Purpose Limitation

In the aforementioned 1973 Resolution of the CoE, purpose limitation first made its introduction when the need was felt to control the use made of information stored in electronic databanks.⁵⁸ The purpose limitation principle means that personal data should be stored for specified and legitimate purposes only and should not be used in a way that is incompatible with those purposes. In other words, the purpose for which personal data may be processed is either the original purpose they were collected for or a purpose that is compatible therewith. What exactly constitutes a compatible purpose is not defined by the Data Protection Convention or its explanatory report. It was not until 2013 that the EU Data Protection Working Party published an opinion on what should be understood by the term “compatible purpose”.⁵⁹ Rather than offering a strict definition of compatibility, which would be too stringent, the Working Party listed key indicators to be considered when assessing compatibility. These are the relationship between the purposes for which the data have been collected and the purposes of further processing, the context in which the data have been collected and the reasonable expectations of the data subjects as to their further use, the nature of the data and the impact of the further processing on the data subjects and the safeguards applied by the controller to ensure fair processing and to prevent any undue impact on the data subjects. Since this is an opinion, it is not legally binding. Nevertheless, it offers guidance to data controllers, data protection authorities or judges deciding on the matter.

In this respect, Article 8, paragraph 2 ECHR should be referred to, since every interference with the right to privacy should be legal and necessary in the interests of a legitimate aim. Even with the difference between the right to privacy and the processing of personal data described above, derogating from both is governed by the same restrictions as Article 9 of the Data Protection Convention is modelled on the provisions of Article 8, paragraph 2 ECHR. Lawfully derogating from the data protection standards will be discussed in the next sub-section of this paper.

III.1.2.2. Purpose Limitation and Open Source Data

The significance of purpose limitation for open source data lies in the fact that the public availability of open source data raises the risk of processing for incompatible purposes. Any personal data that can be drawn from an open source, such as statements or pictures, posted on a public social media profile can be misused for other purposes.⁶⁰

⁵⁸ Committee of Ministers, Resolution (73)22 on the Protection of the Privacy of Individuals *vis-à-vis* Electronic Data Banks in the Private Sector, 26 September 1973. In addition a similar Resolution was adopted on the protection of privacy of individuals *vis-à-vis* electronic data banks in the public sector, Committee of Ministers, Resolution (74)29 on the Protection of the Privacy of Individuals *vis-à-vis* Electronic Data Banks in the Public Sector, 20 September 1974. The Explanatory Report to Resolution (73)22 demonstrates the fear of data abuse: ‘There is a certain risk that the user of a data bank, in order to pay off the cost of storing data, might try to find new applications for which the data in his possession could be used. If such applications were to go beyond the original purposes for which the information had been compiled, a violation of the right of the persons concerned to privacy might ensue.’

⁵⁹ Article 29 Data Protection Working Party, Opinion 03/2013 on purpose limitation, 2 April 2013, 23–27, available online at <ec.europa.eu/justice/data-protection/article-29/documentation/opinion-recommendation/files/2013/wp203_en.pdf> (accessed 27 September 2014).

⁶⁰ This does not mean that a data protection infringement is the only possibly intrusion, (criminal) offences such as defamation and slander could occur or intellectual property rights could be disrespected. These, however, reach outside the scope of this contribution.

The first question is what the original purpose of the open source data is. In some cases such as academic research or journalism this can be clear, in the case of social media the purpose for publishing personal data can range from holiday pictures to wedding announcements, informing people of a new phone number or simply chatting. The bottom line is communication. Perhaps one could even consider social media as a purpose in itself combining the communication element with the element of spreading information on oneself to a limited group of persons or to the general public.⁶¹ An example of misusing open source data could be the public posting of a birth announcement—including the address of the new parents—on a social media page that is followed by an insurance company sending the parents folders for life insurance.

This seems similar to behavioural advertising but the difference is that the latter uses cookies or similar devices installing software on Internet users' computers to track their surfing behaviour, enabling them to show users personalised ads on specific webpages. The EU Data Protection Working Party has argued that the use of such identifiers enabling the creation of very detailed user profiles can in most cases be considered personal data processing, so users' prior consent for installing cookies is required.⁶² This does not concern open source data since the surfing behaviour can only be tracked by specific software that is connected to companies' websites; thus the data that are gathered are restricted to a specified public.

When personal data on social media are publicly available, often the perception is that these may be used for any other purpose by anyone. Nonetheless, traditional data protection laws still apply and besides the described compatible purposes, such personal data, may only be used when the legality and necessity requirements are fulfilled. A typical example is a criminal investigation. The riots in several London neighbourhoods in 2011 led not only to the arrests of those inciting the looters on Facebook and Twitter, but also those who had unwisely posted pictures of themselves on social media with stolen goods. In the next part of this contribution, the use of open source data for criminal investigations and prosecutions will be discussed further.

III.1.2.3. Retention of Personal Data

Even if personal data are adequate, relevant and not excessive at the moment of their collection, after a certain amount of time these data could be no longer adequate and relevant in relation to the purpose they were gathered for. This was the case in the recent ruling by the Court of Justice against Google (see above).

The longer personal data are stored for, the higher the risk of intentional or unintentional misuse becomes.⁶³ The data retention principle specifies that personal data can be saved in databases for as long as is required for the purpose they are stored for. After this period of time has passed, the data can still be retained but need to be separated from the identifying factor, removing the quality of personal data. This separation does not need to be permanent, it is sufficient that the identification of the person concerned cannot be done easily.⁶⁴

⁶¹ Oxford Dictionary defines social media as websites and applications that enable users to create and share content or to participate in social networking.

⁶² Article 29 Data Protection Working Party, Opinion 2/2010 on online behavioural advertising, 22 June 2010, 9, available online at <ec.europa.eu/justice/policies/privacy/docs/wpdocs/2010/wp171_en.pdf>.

⁶³ Committee of Ministers, Resolution (73)22 on the Protection of the Privacy of Individuals *vis-à-vis* Electronic Data Banks in the Private Sector, 26 September 1973, paras. 23–25.

⁶⁴ *Open Source Intelligence Handbook*, *supra* nt. 32, 42.

Derogating from the data retention principle is lawful under the same conditions as explained above. In other words, personal data can be stored for longer than necessary, but this must be laid down in law and it needs to be necessary in the interests of protecting state security, public safety, the monetary interests of the state or the suppression of criminal offences or in the interest of protecting the data subject or the rights and freedoms of others. Before declaring the Data Retention Directive invalid, the Court of Justice confirmed that the fight against serious crime is indeed of the utmost importance in order to ensure public security. However, according to the Court such an objective of general interest cannot in itself justify a retention measure such as that established by the contested Directive being considered to be necessary for the purpose of that fight. In addition, the Court criticised the text of the Directive since it covers, in a generalised manner, all persons and all means of electronic communication as well as all traffic data without any differentiation, limitation or exception being made in the light of the objective of fighting against serious crime. The Directive applies even to persons for whom there is no evidence capable of suggesting that their conduct might have a direct or remote link with serious crime. It does not provide for any exception, meaning that it applies even to persons whose communications are subject, according to rules of national law, to the obligation of professional secrecy. Therefore, the Directive does not limit the processing of personal data to what is strictly necessary.⁶⁵

III.1.2.4. Data Retention and Open Source Data

A significant issue with open source data and data retention is the lack of control. The availability of the data gives them a perceived outlaw-status. Without the data subject's knowledge, data identifying him or her can be copied and stored on servers, computers or portable devices where they may remain stored for very long periods of time and may or may not impact the data subject's life at a much later stage, as was the case in the aforementioned judgment against Google. Similar issues rise with public pictures or statements on social media that can be easily found online by potential employers negatively influencing their image of the data subject. For the reasons set out above, search engine operators should not be made responsible for providing links to open source data that are online.

In case a data subject would want to file a complaint against such retention and misuse of personal data, it is thus not the search engine but the website keeping the personal data in their databases that should be the target.

III.2. Derogating from Data Protection Standards

The lawful ways of derogating from the data protection standards have been briefly touched upon above. Not being able to derogate from these standards would hinder many forms of data processing that have legitimate aims and are necessary for the functioning of a democratic society, such as the prevention, investigation and prosecution of criminal offences. When open source data that contain or consist of personal data are processed outside the scope of the data protection standards, the processing should fulfil the requirements of legality and necessity.

Typically it is the necessity requirement that causes most difficulties in practice. The requirement of necessity was introduced in order not to give a state too much leeway and to identify a pressing social need. Still it encompasses a range of interests—fundamental

⁶⁵ ECJ, 8 April 2014, *Digital Rights Ireland and Seitlinger and Others*, C 293/12 and C 594/12, 51–58.

values in a democratic society—that could make derogating from the standards necessary.⁶⁶ The protection of state security refers to internal and external threats, making it legal to violate privacy rights—for example by conducting a telephone tap—in the context of an investigation against an attack on state institutions but also the gathering of intelligence. This derogation could therefore be used for allowing the use made of personal data by security services provided there is a nexus with a specific investigation. The monetary interests of the state refer to tax collection requirements and exchange control.⁶⁷ It does not entirely cover the economic well-being of the state, which was the wording used in Article 8, paragraph 2 ECHR. It covers however a specific part of it, namely all means of financing a state's policies. It is important—especially for the next part of this contribution—which the suppression of criminal offences does not require a criminal charge has been made against the individual involved. Where Article 8, paragraph 2 ECHR provides an exception for the prevention of disorder or crime, it encompasses a wider range of acts than merely investigation and prosecution of a criminal offence.

In its jurisprudence the European Court of Human Rights (ECtHR) has added three conditions: infringements of the right to a private life should also be precise, foreseeable and proportionate.⁶⁸ This means that every time an individual's right to a private life is restricted, the restriction should be counterbalanced by the assurance that it is legal and necessary for fulfilling a legitimate aim. Besides the fact that the legal provisions describing the allowed infringement should be precise enough, the individual should be able to predict from the relevant law in which cases his or her personal data could be collected and processed and these provisions should be precise and foreseeable in order for the individual to regulate his or her conduct accordingly.

Derogating from the right to a private life by processing personal data needs to be proportionate to the legitimate aim that is pursued. Proportionality is thus a requirement for the data itself as well as for the processing of the data. On the one hand, the personal data gathered by means of infringing upon an individual's privacy should not be excessive in quantity in relation to the objective to be served, for example the annulment of the Data Retention Directive was besides the potential use also based on the massive and indiscriminating retention of data. On the other hand, regardless the amount of data gathered, in cases where the same result could have been accomplished with actions that are less privacy-intrusive the proportionality requirement is not fulfilled.

The foreseeability aspect relates to the clarity of the legal provisions on processing of personal data as exceptions to the right to a private life. National data protection laws should be sufficiently clear in defining what constitutes a compatible purpose due to the interference with an individual's private life that the use of personal data entails. It is, however, not enough to simply provide in sufficiently clear laws. The EU Data Protection Working Party stated that in practice, laws should not only mention the final objectives of the legislative measure and designate the controller of the processing. They should also specifically describe the objectives of the relevant data processing, the

⁶⁶ CoE Data Protection Convention, *supra* nt. 2, paras. 55–56.

⁶⁷ *Id.*, para. 57.

⁶⁸ European Data Protection Supervisor, Third Opinion 27 April 2007 on the Proposal for a Council Framework Decision on the Protection of Personal Data processed in the Framework of Police and Judicial Cooperation in Criminal Matters, *O.J.* C139, 23 June 2007, 5, available online at <secure.edps.europa.eu/EDPSWEB/webdav/shared/Documents/Consultation/Opinions/2007/07-04-27_3dpillar_3_EN.pdf> (accessed 27 September 2014); ECtHR, 2 August 1984, *Malone v. UK*, 8691/79, paras. 67–68; and ECtHR, 4 May 2000, *Rotaru v. Romania*, 28341/95, para. 55.

categories of personal data to be processed, the specific purposes and means of processing, the categories of persons authorised to process the data, the procedure to be followed for the processing, and the safeguards against any arbitrary interference by public authorities.⁶⁹

Derogating from the rule of purpose limitation or from the data retention principle can only be foreseeable if it is formulated with sufficient precision to enable any individual – if need be with appropriate advice – to regulate his or her conduct. The individual should be able to predict the consequences of certain behaviour to a reasonable degree. However, the consequences should not be foreseeable with absolute certainty.⁷⁰ This requirement implies a responsibility on behalf of a state’s legislator to design clear-cut and transparent provisions when enacting measures that interfere with individuals’ right to a private life. In the judgment annulling the Data Retention Directive the Court of Justice criticised the EU legislator for not limiting data retention to what is strictly necessary. On EU level objective criteria should have been formulated, according to which the national legislators could limit the periods of data retention as well as the access rights to the databases.

IV. Evidence in Criminal Investigations

Open source data can and will be often used as evidence in criminal investigations. Based on their impact on the human rights of the individual(s) concerned—suspect, victims, witnesses, etc.—and on the society or community in which a criminal offence has been committed, criminal investigations and prosecutions are regulated by a special set of rights. The information that is used to investigate the offence and to establish the truth will also contain personal data, whose processing is regulated by the data protection standards discussed above. Open source data can equally be included in criminal investigations and prosecutions, triggering separate issues. In this section, these issues are identified after introducing the correct terminology and the rights to be considered.

IV.1. Information, Intelligence and Evidence

Before engaging in a discussion on investigations into criminal offences and the evidence used in criminal proceedings, it is important to understand the difference between the terms “information”, “intelligence” and “evidence”. Similar to NATO’s explanation (see above), the UNODC explained the relevant terminology and stated that information is raw data of any type, whilst intelligence is data that has been worked on, given added value or significance. Information is evaluated through a process of considering it with regard to its context through its source and reliability.⁷¹ This could, for example, include the combining of information with other information, the “connecting the dots” process.

Obviously information can consist of open source data. By interpreting open source data and giving them meaning, intelligence can be obtained. This is not yet evidence. Evidence is information and intelligence that is used to establish proof of one of more criminal offences. Which evidence is admissible and how evidence can be presented is

⁶⁹ See above nt. 22, 38.

⁷⁰ ECtHR, 16 February 2000, *Amman v. Switzerland*, 27798/95, para. 56; ECtHR, 26 April 1979, *The Sunday Times v. United Kingdom*, 6538/74, para. 49.

⁷¹ United Nations Office on Drugs and Crime, *Criminal Intelligence – Manual for Analysts*, 2011, 1-2, available online at <unodc.org/documents/organized-crime/Law-Enforcement/Criminal_Intelligence_for_Analysts.pdf> (accessed 20 July 2014).

regulated by national laws. In principle there is no objection for open source data not to become evidence in criminal proceedings when they are relevant for the case and they are admissible as evidence. However, when open source data consist of personal data, then data protection standards should be complied with. Stating that police can use the information on a public social network profile without any restriction is thus incorrect.⁷²

Besides the described data protection standards, another set of rights should be respected once a criminal charge is made: the so-called fair trial rights of Article 6 ECHR. In this context it is relevant to highlight the relationship between Article 6 and Article 8 ECHR. The latter describes the right to a private life, which is not identical to the right to data protection. At the present time only the EU has adopted a genuine right to data protection, in the Charter on Fundamental Rights and Freedoms. In the jurisprudence of the ECtHR however, the right to private life has been used to protect personal data as well. Therefore it is relevant to include the tension between Article 6 and Article 8 ECHR in this discussion.

IV.2. Fair Trial Rights

Article 6 ECHR is often referred to as the fair trial right, since it encompasses inter alia the requirement of an independent and impartial tribunal; the presumption of innocence and the right to a confrontation of witnesses. These rights should protect the defendant from arbitrariness or prejudgment in the course of the proceedings. Article 6 is applicable in civil as well as in criminal proceedings. However, when criminal proceedings are concerned, it is only applicable after a criminal charge has been made. In *Deweere v. Belgium*, the ECtHR determined this moment by means of the official notification of the allegation that the individual concerned has committed a criminal offence or an implication thereof has been given.⁷³ Whether or not a charge was criminal—and not administrative—was interpreted in further case-law. For a criminal charge it is necessary that the relevant national provisions belong to the criminal law of a state, disciplinary law or both, and when the nature of the offence and the severity of the penalty are considered to be criminal.⁷⁴

Gathering information and intelligence is for a large part done before a criminal charge is made; usually it is needed in order to make a criminal charge. This would mean that the evidence derived from this information and intelligence would fall outside the scope of Article 6. With regard to the proactive use of special investigative techniques to collect information, the CoE has adopted specific recommendations.⁷⁵ Special

⁷² Voigt, S., Jansen, N. and Hinz, O., “Law Enforcement 2.0 – The Potential and the (Legal) Restrictions of Facebook Data for Police Tracing and Investigation”, *European Conference on Information Systems 2013 Completed Research*, 2013, available online at <staff.science.uu.nl/~Vlaan107/ecis/files/ECIS2013-0141-paper.pdf> (accessed on 25 July 2014).

⁷³ ECtHR, 27 February 1980, *Deweere v. Belgium*, 6903/75, para. 46.

⁷⁴ ECtHR, 8 June 1976, *Engel and others v. the Netherlands*, 5100/71, 5101/71, 5102/71, 5354/72, 5370/72, para. 82; ECtHR, 21 February 1984, *Öztürk v. Germany*, 8544/79, paras. 55–56.

⁷⁵ Council of Europe, *Guidelines on Human Rights and the Fight against Terrorism*, 11 July 2002, available online at <umn.edu/humanrts/instree/HR%20and%20the%20fight%20against%20terrorism.pdf> (accessed 1 October 2014); Council of Europe, *Recommendation Rec(2005)9 to member states on the protection of witnesses and collaborators of justice*, 20 April 2005, available online at <wcd.coe.int/ViewDoc.jsp?id=849237&Site=COE> (accessed 1 October 2014); Council of Europe, *Recommendation Rec(2005)10 to Member States on special investigation techniques in relation to serious crimes including acts of terrorism*, 20 April 2005, available online at <wcd.coe.int/ViewDoc.jsp?id=849269> (accessed 1 October 2014).

investigative techniques will not be needed when open source data are concerned. The question remains whether open source data that consist of personal data and have been collected before a criminal charge was made, can be used as evidence in criminal proceedings.

IV.3. Gap between Article 6 and Article 8 ECHR

Article 8 ECHR prohibits unnecessary interference with an individual's private life. It can be derogated from, provided that this is laid down in clear-cut and accessible legislation and provided it is necessary in the interests of preventing disorder or crime. Accurate information should be provided to the competent authorities that violation of a person's right to a private life is in fact genuinely preventing disorder or crime.⁷⁶ When it is clear to public authorities that there is little or no risk of disorder or crime occurring, they should refrain from interfering in a person's private life.⁷⁷

Even though it was pointed out before that in the ECtHR jurisprudence Article 8 ECHR is used to protect personal data, it can still only serve as a basic rule and not as a detailed set of provisions for protecting personal data that are gathered for the purpose of prevention, investigation, prosecution and punishment of criminal offences. Article 6 ECHR in its turn protects the individual against whom a criminal charge was made but does not foresee in specific rights protecting the individual's private life or personal data.

The ECtHR has ruled more than once on the effect of a violation of Article 8 on the trial. In *Schenk v. Switzerland* and *Teixeira de Castro v. Portugal*, the Court considered it not necessary to discuss Article 8 after deciding on Article 6. In the first case no breach of Article 6 was detected due to the disputed recording of a private telephone conversation not being the only evidence.⁷⁸ In the *Teixeira de Castro* case the use of evidence as a result of incitement by undercover agents meant a clear breach of the right to a fair trial, so the Court did not see a need to consider the complaint on a breach of Article 8 separately.⁷⁹ In the *Khan* case, however, the Court took a stand on the relationship between Article 6 and Article 8. It ruled that a fair trial had been provided to the applicant who received due opportunities for challenging the evidence, even after confirming a breach of Article 8 based on the use of unlawfully installed listening devices.⁸⁰ With this judgment the Court cut the link between Article 6 and 8. The ruling is inspired by the established ECtHR case law stating that the right to a fair trial is based on all circumstances of the case. The proceedings as a whole, including appeal and cassation, should be part of the assessment whether a fair trial has taken place or not.⁸¹ Rules on the admissibility of evidence as such are not within the ECtHR's competence. However, the Court concluded that, as long as the defendant has been given the

⁷⁶ ECtHR, 6 June 2006, *Segerstedt-Wiberg and others v. Sweden*, 62332/00, paras. 89 and 92. See also ECtHR, 6 September 1978, *Klass and others v. Germany*, 5029/71, para. 48; ECtHR, 25 December 2011, *P.G. and J.H. v. The United Kingdom*, 44787/98, paras. 50–51; ECtHR, 28 April 2003, *Peck v. the United Kingdom*, 44647/98, para. 67.

⁷⁷ For example, police officers should refrain from entering a person's private home in order to prevent crime or disorder when this is highly unlikely to occur due to the absence of the person who was considered to potentially cause a breach of the peace. See in that regard for example ECtHR, 23 September 1998, *McLeod v. United Kingdom*, 72/1997/856/1065, paras. 56–57.

⁷⁸ ECtHR, 12 July 1988, *Schenk v. Switzerland*, 10862/84, paras. 49 and 53.

⁷⁹ ECtHR, 9 June 1998, *Teixeira de Castro v. Portugal*, 44/1997/828/1034, paras. 39 and 43.

⁸⁰ ECtHR, 4 October 2000, *Khan v. United Kingdom*, 35394/97, paras. 38–40.

⁸¹ ECtHR, 16 December 1992, *Edwards v. United Kingdom*, 13071/87, para. 39; ECtHR, 26 October 1984, *De Cubber v. Belgium*, 9186/80, para. 30.

opportunity to challenge the evidence brought against him and the evidence is reliable and not gathered by means of entrapment or inducement, encroaching on the right to a private life can still produce admissible evidence.⁸²

Taking all circumstances of the case into account, three considerations should be made. First, the evidence resulting from the breach of privacy should not be the only evidence in the case. In practice, no prosecutor would take the risk basing a whole case on such evidence, especially if this evidence would be open source data. Open source data are not necessarily reliable or accurate and would therefore have to be accompanied by other evidence. Second, the nature of the violation of the right to a private life should be considered. Evidence resulting from entrapment or incitement cannot lead to a fair trial due to its effect on the reliability of the evidence. No entrapment or incitement will be needed to collect open source data. Uncertainty regarding their accuracy and reliability is inherently linked to the make-up of open source data. Third, the right to challenge the evidence means that the person concerned should be given the opportunity to object to the use of such data as evidence implying that he or she needs to be informed of the use of these data.

IV.4. Personal Open Source Data in Criminal Investigations

IV.4.1. Accuracy and Reliability

Since open source data can theoretically be produced and distributed by any person, their accuracy and reliability is difficult to verify. When using such data for an investigation into a criminal offence or an offender, sufficient care should be taken to check source and content of the data. Law enforcement and intelligence authorities have implemented systems for verifying such data. Already in 1987 the CoE recognised the importance of these issues for police authorities in Recommendation (87)15.⁸³ With this recommendation, a group of experts drafted a special set of data protection principles for the specific tasks of the police while at the same time adapting them to take account of particular requirements, notably in respect of the suppression of criminal offences.⁸⁴

The explanatory text of the recommendation rightfully states that the retaining of personal data in a police file may lead to a permanent record and indiscriminate storage of data, which may prejudice the rights and freedoms of the individual. It is also in the interests of the police that it has only accurate and reliable data at its disposal for the performance of its tasks. For these reasons, these guidelines encourage the implementation of a system of data classification; suggest distinctions between corroborated data and uncorroborated data, including assessments of human behaviour; between facts and opinions; between reliable information (and the various shades thereof) and conjecture; between reasonable cause to believe that information is accurate,

⁸² ECtHR, 4 October 2000, *Khan v. United Kingdom*, 35394/97, para. 36.

⁸³ Council of Europe, *Recommendation No.R(87) 15 regulating the use of personal data in the police sector*, 17 September 1987, available online at wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=2196553&SecMode=1&DocId=694350&Usage=2 (accessed 1 October 2014).

⁸⁴ Even though this is not a legally binding instrument, it was explicitly endorsed in legally binding instruments covering police cooperation, such as the Europol Decision, the Schengen Implementation Convention as far as police cooperation is concerned, the Prüm Convention and the decision on the stepping-up of cross-border crime and the decision concerning access for consultation of the Visa Information System (VIS) by designated authorities of Member States and by Europol.

and a groundless belief in its accuracy.⁸⁵ For example Europol has not only included Recommendation (87)15 in their standard of data protection,⁸⁶ the EU's agency for police cooperation also has a system in place for distinguishing incoming information based on its reliability.

In the current debates on the revision of the EU's data protection legal framework, the proposed directive for data protection in criminal matters included an additional provision on distinguishing personal data in accordance with their degree of accuracy and reliability. Also, the distinction between personal data based on facts and personal data based on personal assessments has been introduced in the text of the proposed directive.⁸⁷ Upon adoption of the proposed directive, making such distinction would then be mandatory for all data controllers processing personal data within the scope of this legal instrument.

IV.4.2. Necessity

Information will be collected for the purpose of a criminal investigation for a large part before a criminal charge is made; often it will be collected in order to make a criminal charge in the first place. This means that the protection of Article 6 ECHR is not activated yet, but the collected information can include data on suspects, witnesses as well as victims, and it can range from hard facts to suspicion and mere speculation. These can contain personal data so the data protection standards should apply. In most cases this would mean derogating from the standards as the use of personal data for criminal investigations will be an incompatible purpose as well as a possible breach of the data retention principle. Since derogating from the data protection standards is only lawful when it is laid down in law and necessary in the interests of – in this case – the suppression of criminal offences, the precise meaning of necessity in this respect deserves a closer look.

In the above explanation, necessity was referred to as the link between personal data and the purpose for which they are processed, in this case an investigation into one or more criminal offences. It does not explicitly require a criminal charge to be made, allowing a wider form of information—including proactive—gathering of personal data. Defining this link however, remains a nearly impossible task. In its assessment of the necessity of the mass retention of data in accordance with the Data Retention Directive the EU Court of Justice stated that the fight against serious crime, in particular against organised crime and terrorism, is indeed of the utmost importance in order to ensure public security and its effectiveness may depend to a great extent on the use of modern investigative techniques. The Court continued nonetheless that such an objective of general interest, however fundamental it may be, does not, in itself, justify a retention

⁸⁵ Council of Europe, *Recommendation No.R(87) 15 regulating the use of personal data in the police sector – Explanatory Memorandum*, 17 September 1987, para. 52, available online at <wcd.coe.int/ViewDoc.jsp?id=704861&Site=CM> (accessed 28 November 2014).

⁸⁶ Council Decision of 6 April 2009 establishing the European Police Office (Europol) (2009/371/JHA), OJ L121/37, 15 May 2009, available online at <europol.europa.eu/sites/default/files/council_decision.pdf> (accessed 1 October 2014).

⁸⁷ European Parliament legislative resolution of 12 March 2014 on the proposal for a directive of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data by competent authorities for the purposes of prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and the free movement of such data (COM(2012)0010 – C7-0024/2012 – 2012/0010(COD)), 12 March 2014, available online at <europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2014-0219> (accessed 1 October 2014).

measure such as that established by Directive 2006/24 being considered necessary for the purpose of that fight.⁸⁸ If the fight against serious crime is too wide to justify necessity, then a more specific link must exist. The 1987 CoE Recommendation regulating the use of personal data in the police sector gives further indications.⁸⁹ With regard to the collection of personal data, the recommendation defines the derogation regarding the suppression of criminal offences as the prevention of a real danger or the suppression of a specific criminal offence. “Real danger” should then be understood as not being restricted to a specific offence or offender but includes any circumstances where there is reasonable suspicion that serious criminal offences have been or might be committed to the exclusion of unsupported speculative possibilities.⁹⁰

Translated into the issue of open source data, this means that it is a lawful exception to the data protection standards when open source data consisting of personal data are collected for the purpose of investigations into a specific criminal offence or offender, or in cases where a reasonable suspicion exists that one or more serious criminal offences have been or might be committed. Purely speculative collection of data—so-called fishing expeditions—does not concern necessary data collection and does not fall within the scope of the lawful derogation.

IV.4.3. Vigilantism

When discussing the topic of open source data and criminal investigations, the relatively recent trend of vigilantism using open sources on social media or the Internet should not be overlooked. What is meant by “vigilantism” or “vigilante justice” is a movement among citizens who take justice into their own hands and—often violently—react to alleged offenders out of discontent with law enforcement’s action or lack thereof. Vigilantism in itself is not new, however it has been facilitated in recent years by the expansion of social media.

With estimates ranging from 80-90% of intelligence coming from open sources,⁹¹ it is unsurprising that open sources are abused by persons outside the law enforcement and intelligence community. The fact that open source data are publicly available means that they are often viewed by the public as being used freely. This does not only have data protection violations as a consequence. Referring back to the aforementioned issue of

⁸⁸ Court of Justice of the European Union, 8 April 2014, *Digital Rights Ireland and Seitlinger and Others*, C 293/12 and C 594/12, para. 51.

⁸⁹ Council of Europe, *Recommendation No.R(87) 15 regulating the use of personal data in the police sector*, 17 September 1987, available online at <wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=2196553&SecMode=1&DocId=694350&Usage=2> (accessed 1 October 2014).

⁹⁰ In the text of the recommendation a helpful example is added: reasonable suspicion that unspecified drugs were being illegally brought into a country through a port by unidentified private yachts would justify the collection of data on all such yachts using that port, but not all yachts, their owners and passengers using every port in that country. See Council of Europe, *Recommendation No.R(87) 15 regulating the use of personal data in the police sector*, 17 September 1987, available online at <wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=2196553&SecMode=1&DocId=694350&Usage=2> (accessed 1 October 2014).

⁹¹ Congressional Research Service, Best, R.A. and Cumming, A., *Open Source Intelligence (OSINT): Issues for Congress*, 5 December 2007, available online at <fas.org/sgp/crs/intel/RL34270.pdf> (accessed on 26 July 2014), 4.

accuracy and reliability of open source data, in cases of vigilantism, abusing such data can have fatal consequences.⁹²

V. Reflections on Open Source Data

Open source data may appear, to the general public, as having an outlaw status and open to all kinds of use. This assumption is essentially incorrect. When open source data contain or consist of data that can identify or enable to identify an individual, they may not be used at free will. Even when the user is a law enforcement or intelligence officer doing his or her job to prevent or investigate a criminal offence, the data protection legislation should be complied with. Use of open source data for the suppression of criminal offences allows derogating from the personal data protection principles; nonetheless the following points deserve special attention.

Open source data are not necessarily verified, accurate or reliable. In comparison to already verified data, law enforcement and intelligence authorities have to invest more resources in organising, filtering and subsequently using open source data that are relevant for preventing and investigating criminal offences. The current revision of the EU's data protection legal framework makes the distinction of personal data based on different degrees of accuracy and reliability mandatory for data processing for the purpose of prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties.

Collecting and processing open source data for targeted prevention and investigation into criminal offences constitutes a lawful derogation from the data protection standards. Mass or untargeted personal data collection, however, does not. Regardless of personal data being open source or closed source, the necessity and proportionality requirements apply.

A different light is shed on these data protection standards however by the ECtHR jurisprudence that has ruled on an independent relationship between the right to a private life and the right to a fair trial. When the person concerned had the opportunity over the course of the proceedings to challenge the evidence used against him, an interference with his privacy can still lead to a fair trial. Theoretically, this could endanger the necessity and proportionality requirements, also with regard to open source data. It is essential to closely monitor any future jurisprudence concerning this subject.

Open source data are available in vast amounts on account of the Internet and search engines such as Google, and they are tempting. In that sense, they are also unforgiving with regard to past mistakes and unfortunate life events. It may sound unfair to call this a "new reality", since the use of the Internet and social networks has increased for several decades already. However, the judicial and the legislative process are slow and cumbersome, or, to quote two privacy experts in a reaction to the judgment against Google: 'The CJEU decision is trying to balance things, perhaps assisting individuals a bit more than they deserve, until we all—Internet users, the Internet and Internet companies—get to better grips with the, still new, medium.'⁹³ On top of getting used to

⁹² For example The Guardian, Morris, S., *Investigations opened into vigilante murder of man mistaken for paedophile*, 29 October 2013, available online at <theguardian.com/uk-news/2013/oct/29/vigilante-murder-paedophile-bristol-bijan-ebrahimi> (accessed on 26 July 2014).

⁹³ Privacy Perspectives, De Hert, P. and Papakonstantinou, V., *How the European Google Decision May Have Nothing To Do With a Right to Be Forgotten*, 19 June 2014, available online at <privacyassociation.org/news/a/how-the-european-google-decision-may-have-nothing-to-do-with-a-right-to-be/> (accessed 30 July 2014).

this relatively new reality, modernising the data protection legal framework is an undertaking with many stakeholders and diverging interests at stake. Legislators as well as judges are realising that the new questions that have surfaced need answers and by the time an answer has been found to one question, another issue will have appeared. The aftermath of the judgment against Google shows exactly how challenging this new reality is for those who perform a supervising role in it. It is of fundamental importance that in getting used to this new reality and adapting the existing legal framework to it, we do not lose touch with the data protection principles that have survived technological developments for several decades already.

The particular issues and questions that are triggered by the use of open source data warrant thorough and detailed reflection, although, this is not only the case for legislators and judges. Also the general public should reflect thoroughly on how to behave appropriately in this new reality. Prevention being the best cure, the simple awareness of what could happen once personal data are posted publicly can make a difference. This does not mean that the future of Internet and social media should come with a warning similar to the Miranda rights referred to in the title of this paper; it means that the debate on open source data should not only be held in parliaments and around congress tables but also in living rooms and around kitchen tables.

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Annex 495

Michael G. Findley and Joseph K. Young, Terrorism, Spoiling, and the Resolution of Civil Wars,
77 J. of Politics 115 (2015)

Terrorism, Spoiling, and the Resolution of Civil Wars

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Civil war combatants use terrorism frequently, yet we understand little about terrorism's effects on war resolution. It is assumed that the primary combatants to a war hold a veto over resolution, but less attention has been devoted to whether the use of terrorism can derail peace agreements. We contend that even terrorism, a generally low intensity form of violence, can make civil war peace processes less likely to conclude in a peaceful, durable resolution. Using a new and large geographically coded database of terrorism in civil wars, we find that the use of terrorism can spoil peace processes by prolonging the duration of a war hastening the time until recurrence. Our argument and results add to the literature on civil wars by explicating the process linking terrorism to war duration and outcome. More generally, the results underscore the importance of investigating different varieties of political violence during civil conflict.

In civil wars throughout the world, achieving durable peace is difficult because of the role of leaders and groups that seek to destabilize and often derail peace processes. The behavior of such leaders and groups has resulted in the failure of peace processes in contexts as diverse as Rwanda, Northern Ireland, and Bosnia, which has resulted in the resumption and sometimes expansion of civil war. Until Stedman's (1997) work on what he termed *spoilers* of signed peace agreements, conflict resolution scholars paid little direct attention to the challenges that these leaders or groups pose to peace. In recent years, a number of studies have appeared suggesting that spoiling could have dire consequences, but nearly all of them lack systematic evidence about the effects of violence in peace processes. By contrast, several arguments suggest that spoilers should not influence the peace because signatories to an agreement have already factored in potential spoiling when signing agreements (Nilsson 2008). Additionally, Kydd and Walter (2002) offer a formal model that suggests that instead of the tactics of the spoiler mattering, peace will endure

depending on the perceived weakness of the moderates making the deal.

In this paper, we take a first step toward more complete and systematic tests of the effects of violence on the outcome of peace processes by considering how terrorism affects civil war resolution. We investigate why terrorism may have a negative impact on combatants' ability to reach an agreement and then, if signed, implement that agreement. A variety of motives underlie the use of terrorist violence during war, which we investigate, and regardless of motivation, such acts likely complicate moves toward peace. The case of Angola is illustrative.

In Angola, several peace agreements were signed in the early 1990s, but as the peace process ramped up, so too did terrorist violence by UNITA, the National Union for the Total Independence of Angola. Arguably the violence destabilized the other parties' (the Popular Movement for the Liberation of Angola and the National Front for the Liberation of Angola) commitment to the peace process as well. Figure 1a shows a

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Data and supporting materials necessary to reproduce the numerical results in the paper are available in the JOP Dataverse (<https://dataverse.harvard.edu/dataverse/jyoung>). An online appendix with supplementary material is available at <http://dx.doi.org/10.1086/682400>.

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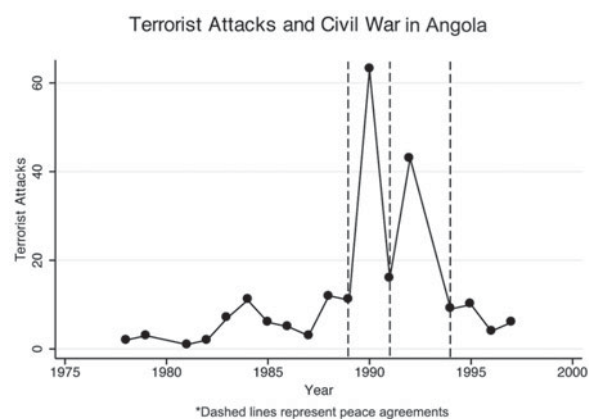
timeline of events from 1977 to 1997. The dashed vertical lines represent three signed peace agreements as defined by the Uppsala Conflict Database (Uppsala 2006). The connected, dotted line represents the number of terrorist events over time occurring in civil war zones. It is clear that the number of events is very low until the peace process gains momentum in the late 1980s, at which time terrorism begins to ramp up. There is a small increase in the number of events in the year prior to the first agreement, and then there are two large increases in the years following the first two peace agreements, potentially contributing to their demise. These data thus illustrate the possibility that terrorism in civil wars may have spoiled steps toward peace.

The case of Bangladesh offers a different perspective. The conflict between the government and the United People's Party of the Chittagong Hill Tracts and its armed wing, the Shanti Bahini, occurred for nearly two decades, from 1977 to 1997. At issue were indigenous rights for those in the Chittagong Hill

Tracts and some form of autonomy from the central government. After a lengthy peace process, the government and representatives for the rebels signed the Chittagong Hill Tracts Peace Accord. As figure 1b demonstrates, terrorism was common in the context of the conflict, but it did not spike during the period of peace agreement implementation. In fact, terrorism reached its apogee in 1996, then declined precipitously in the year leading up to the agreement. After the agreement was signed in December of 1997, terrorism remained relatively low compared to the average levels during the conflict. In contrast to Angola, terrorist acts by the violent wing of the United People's party did not spoil an existing peace and civil war did not recur after the signing of the accord. Terrorist acts by this group, however, may have contributed to increasing the duration of the conflict, especially in the early 1990s.

While these examples deal with terrorism influencing the duration of conflict, spoiling could also be related to ending the peace and bringing about a new civil conflict. A deadly bombing in August 1998 by the Real Irish Republican Army, an IRA splinter group, for example, attempted to restart the civil conflict in Northern Ireland.¹ While the so-called *Troubles* occurred off and on for decades, peace was near. The more extreme R-IRA bombing had no effect, however, in spoiling the peace as the act was widely condemned and the Good Friday Agreements that effectively ended the *Troubles* was reached. These case discussions briefly illustrate the potential effects terrorism might have on the ending and recurrence of civil war. While there are some case examples of how terrorism might cause recurrence or not and of why terrorism might lead to a longer conflict or not, as with most of the literature, they are anecdotal. What we lack is a broader investigation of how spoiling behavior and specifically terrorism influences these civil war processes.

In this paper, we provide an empirical test of the consequences of terrorism for war endings and recurrence in all civil wars between 1970 and 2002. We use data on terrorist events worldwide (LaFree and Dugan 2007) and map the data subnationally to civil war zones to isolate how localized terrorism affects peace processes. Most terrorist events worldwide are geocoded (geographic coordinates are coded), and we spatially join the terrorist events to geocoded data on civil war zones in order to identify events that relate to civil wars. All attacks against military and government targets are dropped to avoid capturing violence that is a regu-



(a) Spoiling during the Angolan Peace Process



(b) Lack of Spoiling following the Bangladeshi Peace Process

Figure 1. Peace and violence trajectories in Angola (a) and Bangladesh (b).

1. The Uppsala Conflict Data Program codes the conflict as minor for most of the 1970s, 1980s, and early 1990s. They code this minor conflict ending in 1991, then a recurrence of conflict due to the Omagh bombing in 1998. See <http://www.ucdp.uu.se/gpdata/gpcountry.php?id=163#>.

lar part of the civil war. Using event-history models, we test the hypothesis that terrorism should lengthen the time until conflict ends and shorten the time until conflict recurs.

In what follows, we first examine literature on terrorism and spoiling during and after civil wars. Extant literature focuses primarily on the post-agreement period, and as such we develop other conceptual and theoretical arguments about the consequences of terrorist violence during and after war-time. The argument identifies testable expectations about the consequences of terrorist violence on the course of a peace process. Following this, we detail the research design and empirical tests, which evaluate the hypotheses and provide a number of implications for the civil war literature. A primary lesson that emerges from the analysis is that terrorism is a consequential means to spoil peace processes. Scholars and practitioners should thus be cautious about ignoring the potential destabilizing influence that terrorist violence can have.

TERRORISM AND SPOILING IN CIVIL WARS

Terrorism is used for a variety of reasons both in and out of civil war. With a few exceptions (e.g., Findley and Young 2012b; Kalyvas 2004; Sambanis 2008), very little work examines the role of terrorism during civil wars. Some have considered violence against civilians for purposes of inducing compliance (Balcells 2010; Kalyvas 2006), outbidding rival groups (Bloom 2005), facilitating bargaining with governments (Hultman 2007; Lake 2002), intimidating or outlasting other groups (Kydd and Walter 2006), as a substitute for guerrilla tactics conditional on state response (Carter 2015), and recruitment (Humphreys and Weinstein 2006).

While it has many purposes more generally, one key role of terrorism when used during war is to spoil attempts at achieving durable peace (Bueno de Mesquita 2005; Kydd and Walter 2002, 2006). Some actors may hope to stop the peace process and return to war, whereas others may not intend to cause the breakdown of peace but could instead use terrorist violence to extract further concessions, for example. But a crucial question remains, if terrorist violence is used, regardless of the motivation, does it derail the peace process by prolonging the time until settlement or hastening the time until recurrence?

Spoilers and spoiling

A fundamental challenge to understanding the role of spoiling is to clarify (i) how to identify spoilers and (ii) when they are active. Much current work on spoilers identifies any group that attempted to derail a peace process completely, whether successful or not, as a spoiler. Implicitly, this approach assumes that only certain actors are problematic—those that attempted to stop the peace process. It neglects the possibility that, a

priori, all groups have the potential to use strategies, such as terrorism, that risk subverting the peace. Furthermore, identifying spoilers based on behavioral traits fails to distinguish between actors with different intentions. Some groups use various strategies with the intention to wreck the peace process completely and return to war. Other groups might use these same strategies with the simple intention of increasing their bargaining leverage, hoping not to cause the complete breakdown of the peace process, but nonetheless they risk derailing it permanently.

Analytically, labeling groups as spoilers is laden with pitfalls. Shifting the emphasis from a group label to an action helps solve the problem. Rather than discuss *spoilers*, one can think in terms of the action of *spoiling*, in which various forms of behavior, such as terrorism, may affect the course and the outcome of the peace process.² Alternatively, because all combatants in a civil war use various violent strategies to achieve their goals—many of which threaten peace processes—one could maintain group labels but refer to groups as *potential spoilers*. In the context of this paper, each combatant (potential spoiler) uses terrorism to alter the course and outcome of a war and peace process and, whether intending to or not, risks complicating or derailing the process completely.

A related difficulty surrounding the concept of spoilers is that these groups are often thought to be marginal actors who espouse fringe or extremist preferences and who do not have a chance at being included in a postwar settlement. That is, these groups cannot compete with the primary combatants; therefore, they resort to terrorism or other lower-level violence in an attempt to upset others' chances. With few exceptions, marginal groups are largely considered irrelevant, especially if they are using small-scale tactics such as terrorism. Perhaps because such groups are considered only marginal actors, the civil war literature focuses more extensively on two primary combatants: a government and a single opposition group (e.g., Mason and Fett 1996; Walter 2002).

Recent work contends that we should look beyond two-actor models and incorporate a role for greater heterogeneity of combatants. Some have argued, for example, that certain actors are “veto players.” Cunningham (2006) argues that there could be more than two relevant actors but that additional actors must be fairly coherent, structured groups, which neglects the possibility that less cohesive groups can have

2. Asal et al. (2012) discuss a similar debate over focusing on actors involved in terrorism vs. terrorist acts and the implications for research on the topic. Also, on different conceptualizations of spoiling, Findley (2007) contends that spoiling may not just be violent but could include a range of nonviolent strategies.

an influence by other means. Third-party extremists, for example, could be weak structurally or in their capabilities yet still be able to have an influence over moderates or the government (Bueno de Mesquita 2005; Kydd and Walter 2002). This research highlights important possibilities about the role of multiple actors, and an important next step is to begin more systematic empirical investigations.

Moving further from a two-actor understanding of spoilers, one could further distinguish between groups and individuals as potential spoilers. Even individuals typically act on behalf of a group, however. Jonas Savimbi in Angola, for example, is widely blamed for derailing the 1991 peace agreement with the MPLA-led government, but he relied on the rebel group UNITA to carry out the violence. In some cases, potential spoiler groups are fairly cohesive entities, whereas at other times they are fractured and may stretch the definition of a group. Regardless, it may not take an excessive number of people to engage in terrorist violence that risks spoiling the peace.

Empirical studies of spoiling

Theoretical and conceptual work on spoiling is abundant, with much research arguing that potential spoilers are dangerous to the peace process (e.g., Greenhill and Major 2007; Newman and Richmond 2006; Stedman 1997; Zahar 2003). Despite significant attention directed to potential spoilers, systematic empirical analysis is limited. The most prominent empirical studies are insightful but incorporate only brief empirical discussions, focusing on a limited number of cases (Greenhill and Major 2007; Johnston, n.d.; Newman and Richmond 2006; Stedman 1997). Other studies empirically analyze single cases, primarily referencing terrorism in the Israeli-Palestinian conflict and the Bosnian war (e.g., Braithwaite, Foster, and Sobek 2010; Kydd and Walter 2002).

Some scholars have turned to cross-country statistical analyses examining the duration of peace following war. Implicitly, these studies incorporate a potential role for violence that risks spoiling the peace but only indirectly and not as a primary objective (e.g., Fortna 2004a; Nilsson 2008). Nilsson (2008), for example, examines the duration of peace following civil war settlements between 1989 and 2003. She posits that groups signing peace deals are likely to anticipate violence from excluded groups and only sign if they believe they can withstand post-agreement violence. Thus, a commonly held assumption that only deals including all potential spoilers should increase the likelihood that peace will last might not be accurate.

Nilsson's 2008 work is an important step toward sorting out and testing hypotheses applicable to spoiling and opens further avenues of research. The empirical analysis, how-

ever, only considers the post-settlement behavior of warring parties. Although this is consistent with what Stedman (1997) originally outlined, it excludes the possibility of understanding the consequences of violence earlier in the peace process. That is, like most other works in this area, it is unable to account for the peace agreements that did not happen when groups successfully prevented agreements from being signed in the first place. While Nilsson is doubtful that groups can derail peace when they are outside of an agreement, she (2008) finds that spoilers have no effect on the peace. Nilsson's key explanatory variables are the number of groups and exclusion/inclusion from the process—neither of these factors directly proxy violence that can spoil the peace later.

Other studies have begun to consider the role of violence during peace processes more directly, but they are typically limited to smaller comparisons of cases (Darby and MacGinty 2003; Höglund 2008). Cross-country empirical analyses explicitly devoted to violence during peace processes have only begun to address the topic more directly. Ayres (2006) attempts a direct analysis using seven civil wars and measures 15 active potential spoilers; he finds preliminary support for the hypotheses that (i) rates of attacks and (ii) numbers of casualties may have an impact on whether groups "win." Although this is an important start, the study relies on a limited number of cases, does not examine multiple stages of the peace process, and does not move beyond a descriptive application of the data.

In sum, existing work makes important contributions to the study of spoilers, yet it also stimulates other possibilities for research. Most striking, perhaps, very little research has examined the consequences of violence on whether peace processes are spoiled. Further, almost no research systematically addresses violence over the course of a peace process, as opposed to following a peace agreement. Yet we might expect that potential spoilers would be most active in using strategies such as terrorism to alter the course and outcome of the peace process from the outset. The following theoretical section makes a case for this possibility and generates testable hypotheses.

TERRORIST VIOLENCE AND SPOILING THE PEACE

Peace emerges only as part of a long and complicated process that includes negotiations, agreements, and post-agreement cooperation (Darby 2001; Walter 2002). For example, Hamas has consistently used terrorist tactics prior to (and during) negotiations between the Israeli government and the Palestinian Authority. In the Chechen conflict, terrorism occurred prior to reaching agreements as well as after the agreements were signed, which resulted in the resumption of war. In each case the direct motives for terrorism varied,

but the terrorist violence had the effect of spoiling moves toward peace.

Why do groups use violence during peace processes?

Our primary motivation is to explain the effect of terrorist violence once undertaken. To understand this effect, however, first we need to consider what motivates groups to use terrorist violence. Typically, groups hope to obtain some outcome from the civil war or associated peace process. During war, combatants might seek a military victory on the battlefield, which guarantees full control over the postwar settlement terms; military victory, however, is often the most difficult outcome to achieve (Bohrer and Hartzell 2005; Fortna 2004b). When combatants pursue a negotiated agreement, they are vying for a share in the outcome of peace accords, which include a variety of factors, such as property rights, electoral rules, disarmament, territory, and amnesty for political prisoners (Darby and MacGinty 2000; Wood 2006). The Good Friday Agreement in Northern Ireland, for example, had a number of provisions, including a power-sharing parliamentary assembly and a coalition government (both with Catholic and Protestant representation), disarmament of paramilitary factions within two years, and the release of prisoners charged with terrorist acts. In some cases, groups seek a share in these benefits and use violence to force their way into contention for these goods. In other cases, groups oppose the particular settlement terms being negotiated because the proposed changes fundamentally threaten the group's interests, such as with Bosnian Serbs during the Vance-Owen peace process, who effectively derailed this push for peace. These groups thus use violence to undermine any serious discussion. Terrorism, in particular, has been used in a diverse set of conflicts to attempt to achieve these various goals.

Bargaining during wartime is a complex process full of uncertainties. Because of the uncertainties, as the peace process progresses and becomes more institutionalized, groups must repeatedly (i) attempt to shape the process, (ii) re-evaluate whether they are obtaining their objectives, and (iii) stop the process if they are losing out in important ways. Terrorist violence can occur anytime during the entire process, and it is one means by which groups try to achieve their goals. Throughout the peace process, groups might only seek a temporary interruption to gain more leverage over future negotiations or implementation. This is important because it acknowledges that groups might use violence for different purposes at various stages of the peace process (see, e.g., Darby and MacGinty 2003; Höglund 2008). During early negotiations, for example, groups might use violence

to demonstrate the necessity of being included in the negotiations and agreement (i.e., that they could wreck the agreement down the road, and so others should be aware). During implementation, the violence might be used to derail the peace process completely. Or it might be used to force the renegotiation of certain terms of a settlement. Despite the variety of motivations that can change both within and across conflicts, the violence always has the potential to derail the peace process.

The consequences of terrorist violence

This perspective raises the issue of what happens to the peace process when terrorist violence is used: does it result in spoiled peace? Kydd and Walter (2002) argue that violence by a faction of one of the parties creates distrust in the groups that are actively negotiating or that signed onto an agreement.³ Not only does the violence generate mistrust, it can intimate a general lack of commitment to the peace process in its current form. Even in cases where groups use violence intending to force their way into the peace process, the immediate effect can be to communicate disapproval of the current process and undermine others' valuations of the likelihood of successfully agreeing to peace. The violence could be the ticket into the peace process, but other groups will lack short-term assurances that violence will eventually subside and that the group using violent tactics intends to act in good faith. This should influence the duration of the conflict.

Terrorist violence by moderate or extremist factions may also provoke a harsh response from the government. Although the harsh government response could hurt those using violence, it often leads to the anger, injury, or death of once-neutral individuals or groups. This collateral damage can lead to more recruits and renewed interest in fighting against the government. Importantly, this process also potentially alters the distribution of capabilities among the combatants (Lake 2002).

According to rationalist explanations of war, both of these processes create uncertainty about the distribution of capabilities, the resolve of the combatants, or the credibility of any commitments that parties negotiate with each other. As Mattes and Savun (2009) argue, agreements to end civil war need to provide commitment mechanisms to reduce fear and costs to noncompliance. Agreements that do not

3. In the context of intragroup relations, violence actually could increase trust between parties, such as when groups use violence against subgroups that they are trying to keep in line. In this case, violence demonstrates to the opponent that the main group can control its followers. Such intragroup violence, however, is beyond the scope of this paper.

resolve these commitment problems should then lead to an increased likelihood of recurrence. In the absence of clear information about these factors, combatants are not likely to cooperate with each other. In sum, whether groups are deciding to reach an agreement or implement the agreement, violent behavior only undermines parties' abilities to continue their support of the peace process in the short term.

This discussion leads to a negative expectation. Terrorist violence by moderates or extremists should make it more difficult to reach and implement a peace agreement. In some cases, such as Northern Ireland, parties learn over time that the moderates intend to cooperate despite violence by peripheral groups (such as the Real IRA). In these events, it takes significant time for the parties to develop the trust to move forward despite the violence. This suggests that violence does make agreements and implementation more likely to be spoiled, but it also indicates that violence affects the duration until a peace settlement as well as the duration until recurrence of a war should the peace fall apart.

Terrorism, as compared to other forms of violence in a civil conflict may be unique in its ability to spoil either trust between moderates (Kydd and Walter 2002) or other conditions that are necessary to either generate or maintain a peaceful equilibrium. Abrahms (2013), like the rationalist models of civil conflict, suggests that terrorism is a credible signal of resolve in a conflict. In contrast to arguments that suggest that terrorism may be an effective tool at extracting concessions from a state, Abrahms (2013) argues that extreme tactics by the rebels demonstrate to the state that negotiation is impossible with the group. In short, terrorism leads to a reduction in the willingness of governments to reach a negotiated settlement even when the demands of the group are relatively moderate.⁴ Thus, we hypothesize the following:

H1. As terrorism occurs more frequently, the duration until a war ends should increase.

H2. As terrorism occurs more frequently, the duration of postwar peace should decrease.

Note that these hypotheses state expectations about what happens to the peace process when groups engage in terrorism. We expect that terrorism impedes progress, making wars longer and postwar peace shorter. The peace process might not be even-handed or optimal, and therefore the vi-

4. Terrorism can also occur from pro-government groups and thus reduce the credibility of the state to comply with peace agreements.

olence might be justified by the participants, but such questions are beyond the scope of this paper.

These hypotheses suggest that terrorism is a strategy by an opponent to achieve an objective, either continuing a conflict or bringing about a new one. Abrahms (2006, 2012) suggests that terrorism is a losing strategy and thus attempts to achieve even these process goals are likely self-defeating. By contrast, others contend that terrorism is successful (Pape 2005). Among them, Thomas (2014), using data from African civil wars, finds that terrorism can be an effective tool to gain concessions from the state and to get a seat at the negotiation table. Still others might argue that when the government and moderates reach an agreement, then terrorism may occur concurrently with long wars as the government works with moderates to slowly outlast the violence, which would be consistent with hypothesis 1 but for different reasons. While our tests cannot resolve the debate over the relevance and effectiveness of terrorism, they should provide evidence that will begin to address the underlying mechanisms. In the following section, we discuss the research design and accompanying empirical tests.

RESEARCH DESIGN

To test these hypotheses on the consequences of terrorism, we consider two outcomes of interest. One dependent variable is the time to the end of the war. The end of a war is coded dichotomously as either (1) ended or (0) not ended in a given country-month, based on Cunningham (2006). Because we are interested in whether terrorist violence prevents the war from ending, which means that the war lasts longer, we use a duration modeling approach. The unit of observation in these models is the civil war-month. Our spatial domain is all countries experiencing civil war, and the temporal domain includes all months during these conflicts from 1970 to 2002.⁵ Again, we expect that increases in terrorism events will increase the time to the end of a civil war.

The second dependent variable is time to recurrence of war once a previous civil war ended. In this second analysis, we use data from Collier, Hoeffler, and Söderbom (2008) on recurrence of war, which is coded dichotomously as (1) war recurred or (0) war did not recur in a given year. Because of a lack of monthly data in postconflict years, the unit of observation for these data is the country-year for a

5. We are limited by the available terrorism data to this time period. We do not expect, however, that our inferences would change if we were able to extend the data back to 1945. Prior to World War II, as Kalyvas and Balcells (2010) suggest, international factors may influence the patterns of internal violence in different ways. Once terrorism data are geographically coded from 2002 to the present, future research should consider whether the patterns change in the post-9/11 period.

state that has previously experienced a civil war. Our spatial domain again is all countries that have experienced the ending of a civil war. The number of observations is necessarily limited as compared to the first analysis, as we include observations once a war has ended and do not include observations for countries that have never experienced a civil war. Our expectation is that more frequent terrorist events will lead to shorter durations until war recurrence.

Graphs of the baseline hazard rates for each reveal non-monotonic hazard rates. In other words, the baseline hazard rate may increase or decrease at different periods of time. We estimated this in two ways. First, we used a routine that estimates the baseline hazard without covariates. Second, we used Carter and Signorino's (2010) code for predicting these baseline hazards, using a discrete hazard model with the full set of covariates set at the mean. Each graph confirms our expectations (see the online appendix).

Given these nonmonotonic baseline hazards, we use three approaches to estimate the time to war ending as well as the time to war recurrence. First, we use a parametric model that can take into account nonmonotonic hazards. The log-normal model can model this process well (Cleves et al. 2008). Second, we estimate Cox proportional hazard models. These models do not assume any functional form for the baseline hazard. Their use is common in the social sciences, especially where we lack strong theory predicting what the baseline hazard should look like (Box-Steffensmeier and Jones 2004). They are less efficient, however, than properly parameterized duration models. Third, we estimate a discrete time model in a logistic regression framework. In sum, the dependent variable is either war ending or war recurrence. A variable that counts the years since war began or since the end of the previous civil war is included. Additionally, squared and cubed versions of this counter are included to provide a flexible way to model the hazard of failure (Carter and Signorino 2010). This way of estimating a duration model is analogous to a Cox implementation as using a cubic form of time allows for nearly any shape for the baseline hazard of failure.⁶ The main results reported here utilize the parametric, log-normal regression technique, but the results are not sensitive to this estimation choice.

Terrorism and spoiling

While spoiling could occur in different ways, we consider one very prominent form, terrorism (Kydd and Walter 2006), based on the *Global Terrorism Database* (GTD; LaFree and Dugan 2007). The GTD defines *terrorism* as "the threatened

or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious or social goal through fear, coercion or intimidation" (LaFree and Dugan 2007). The GTD contains approximately 60,000 terror events worldwide from 1970 to 1997 and an additional 7,154 from 1998 to 2004 collected separately (using a slightly different definition).⁷

The data cover both domestic and transnational terrorist events perpetrated by a diverse set of opposition groups against a variety of civilian, military, and government targets. In order to avoid capturing normal wartime events, we drop any event directed at a military or government target from the two analyses. Compared to other data sets on terrorism, the GTD contains at least five times as many events, making it the most comprehensive source of terrorism database available.⁸

Even if terrorist violence does not capture all acts that groups take that might spoil the peace, these events occurring in the context of war and peace processes are one of the best measures of spoiling behavior. Targeting civilians rather than combatants is a signal that unrestrained violence may continue.

Kydd and Walter (2006, 72–76) make a compelling case that one of the primary strategies of terrorism is spoiling peace processes.⁹ For them, peace processes dominated by moderates threaten extremist and terrorist goals, creating incentives to stop the peace process. In this paper, we con-

7. The 1998–2004 data were collected using different coding rules than the 1970–97 data. As such, pooling the two time periods might be problematic. Because we want to use both sets of data together, we take a couple of steps to be sure that the data are comparable. As a first cut, we estimate the models on both samples separately and note that the results are qualitatively similar (the coefficients are of the same sign and the results are statistically significant). This suggests that measurement differences are not fundamentally altering the results but is by no means conclusive. We also conduct a Chow test, which essentially tests whether coefficients estimated for two groups of data are the same, to demonstrate that the samples can, in fact, be pooled together. The results of these two steps offer support for the decision to pool the two potentially different samples.

8. Like most data, this source of data needs to be accompanied by some caveats. According to LaFree and Dugan (2007), the 1970–97 data were coded as terrorist incidents if they "substantially concur with the definition." Thus, the measurement is largely consistent with the operationalization but leaves open a subjective element in the coding process. Second, each incident required only a single source to be coded, whereas it might be desirable to cross-check each source. Third, as LaFree and Dugan (2007) outlines, the 1993 data were lost, but the GTD project has recovered "marginal" estimates of the overall number of attacks. We use the marginals for 1993 in this paper. Despite possible concerns in the measurement and coding process, these data provide a useful means to test the hypotheses set forth above. We also estimated models without these 1993 marginals, and the results are substantively the same.

9. See also arguments by Bueno de Mesquita (2005).

6. A simple time counter assumes some monotonic increase or decrease, whereas a cubic term implies a quadratic form.

tend that groups might be motivated to use violence for a variety of reasons. Regardless of the motivation, however, the violence should have a negative effect. From Northern Ireland to Israel, and Chechnya to Colombia, it is evident that groups engage in terrorist-type behavior in attempts to derail peace agreements.

Clearly not all terrorism is related to civil wars. Terrorist events in the United States, such as the Fort Hood shooting or the Oklahoma City bombing, are not related to a civil war.¹⁰ Even terrorist events within a country engaged in a civil war might not be related to that war. Not all terrorist events in India, for example, are related to the conflict in Kashmir. Instead, many terrorist events can occur for other reasons, such as the pursuit of limited policy change or the pursuit of some status quo (e.g., Klan violence in the American South during Reconstruction). This creates a problem of how to associate terrorist events with civil wars. In many cases, the groups perpetrating terrorism are identified in the data, and we can determine whether they are also rebel groups engaged in a civil war. In other cases, however, the perpetrators are not coded. To compound the problem of group identification, multiple groups could carry out (or claim credit for) a single attack. A group that did not, in fact, perpetrate the attack could also claim credit for the attack in an attempt to increase its status.

To identify which terrorist events are associated with civil war in a more systematic way, we follow recent practice (Findley and Young 2012b; Nemeth, Mauslein, and Stapley 2014) and use geographic coordinates for nearly all of the terrorist events in the GTD (about 50,000 of the events).¹¹ The geo-coded terrorist events contain the latitude and longitude of each event based on the city in which the event occurred or the city to which the event was closest. Once geo-coded, we spatially joined the terrorist event codes with a database of geographically coded civil war zones as defined in the *ViewConflicts* software by Rød (2003). The terrorism data are precise to the daily level, and the civil war coordinate data are precise at the monthly level, so there is a slight disconnect in the temporal periods.

10. Sambanis (2008), e.g., argues that one of the distinguishing characteristics of civil war relates to it being a form of violence that exceeds a given threshold. Definitions and conceptualizations of terrorism never include a death threshold (Weinberg, Pedahzu, and Hirsch-Hoefler 2004; Young and Findley 2011).

11. The GTD 1.1 database is available as study no. 22541 from ICPSR at the University of Michigan: <http://www.icpsr.umich.edu/cocoon/TPDRC/STUDY/22541.xml>. The GTD provided preliminary geographic coordinates for a portion of the data set. Findley and Young (2012b) used many of these in conjunction with the coordinates they had independently coded. Thus, they coded geographic coordinates for many more events than are in the GTD. Because it is the most comprehensive and contains over time information, we use the Findley and Young (2012b) data in this paper.

In general, overlaying the data in such a way increases the likelihood that the terrorist events are indeed related to the civil war. This approach is fairly conservative, because terrorist events related to the civil war could occur outside of the civil war zone and our initial approach does not capture these events. The Moscow theater bombing and the Beslan school attack in Russia are both examples of terrorist behavior clearly related to the civil war in Chechnya, but both took place outside of the conflict zones.¹²

To illustrate the match between the civil wars and terrorist events, figure 2 matches terrorist events and civil war geographically in Colombia. The darker-colored, background regions of Colombia represent the civil war zones, and the dots represent the terrorist events. This figure demonstrates that a large proportion of terrorist violence occurs in the regions in which civil war is taking place. Although just one example, Colombia is representative of many other civil war zones throughout the world.

Because terrorist events are heavily skewed to the right (concentrated closer to zero, and they have fewer large values), we log the value of terrorism for the model estimation. In the main analyses, we lag the logged terrorism measure by one period and also include a smoothed measure of terrorism in the previous and current periods. We include the current period in the smoothed estimate because the impact is dependent not only on events in the months or years preceding potential settlements but also in the days immediately prior. As noted above, we exclude all events that occurred in civil war zones during the civil wars if they were directed against the military, police, or government, in order to reduce the chance of capturing traditional war-related violence such as battle deaths.¹³

Control variables

Because the samples are different (during vs. after wars), we estimate two sets of models. We included some similar control variables in both sets of models but also some different covariates more appropriate to each stage.¹⁴ In general, we include common measures from studies of recurrence and

12. We estimated models using all terrorist events rather than those only in civil war zones. The results are similar qualitatively, but not identical. In all but one case, the size of the effects decreases, likely due to the inclusion of many unrelated events. Moreover, the *p*-values attenuate in comparison to the main results reported in the paper, though all but one case is still statistically significant at conventional levels.

13. Because our argument is not precise enough to operationalize terrorism in a single way, we also estimated models using alternative measures of the terrorism concept. Whether we use an indicator of attacks, lagged attacks, logged attacks, lagged and logged attacks, or smoothed attacks over different time periods, the results are consistent.

14. For sources and descriptive statistics, see the appendix.

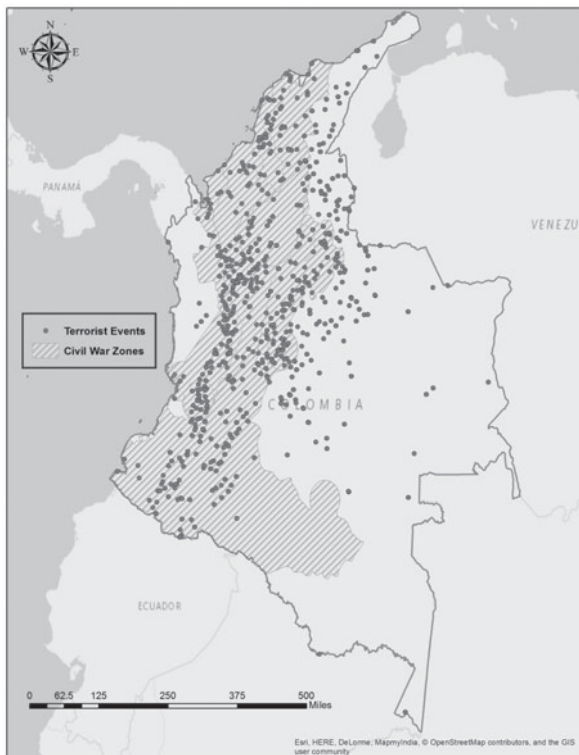


Figure 2. Terrorist events and civil war in Colombia. This figure shows the country of Colombia with terrorist events plotted onto civil war zones. The darker background shades on the western side of Colombia represent the main area of civil war. As is evident, most terrorist events occur in the civil war zones.

civil war duration (Collier, Hoeffler, and Söderbom 2004; DeRouen and Sobek 2004). To maintain a relatively parsimonious model, we concentrate on control variables that might influence terrorism and the duration of the conflict (Achen 2005; Ray 2005).

For the duration of war models, we include measures of the number of parties to the war, as this could lead to changes in the amount of terrorism (Bloom 2005; Findley and Young 2012a), and population (logged), as it covaries with both terrorism and civil war duration (Collier et al. 2004; Li 2005; Young and Findley 2011).¹⁵ The ethnolinguistic fractionalization index has an uncertain relationship with each, but this is often included to attempt to explain both civil war duration and terrorism. We include a logged measure of battle deaths to avoid the possibility that the terrorist attacks are simply measures of traditional civil war battles. Gross

15. We also used a more stringent measure of the number of actors, namely, "veto players." The results for terrorism reported in the paper hold with or without the inclusion of the veto players measure.

domestic product (GDP) per capita has been used as a proxy for many different concepts in civil war and terrorism research, such as poverty, state capacity, and effective counterinsurgency (Fearon and Laitin 2003; Findley and Young 2011; Sambanis 2004). Regardless, GDP may correlate with both terrorism and the duration of wars. Difficult terrain, or the percentage of mountainous terrain in a country, is correlated with duration and may also influence rebels' abilities to use violence, such as terrorism (Collier et al. 2004). Finally, the presence of a security guarantee (Walter 2002) may lead to an incentive for using terrorism while reducing the duration of the war.

For the civil war recurrence models, we again include the ethnolinguistic fractionalization index, GDP per capita, and population (logged). We also include a measure of whether there is instability in the state, as this instability could lead to both terrorism and recurrence of war. A control for the average democracy score of neighbors is included to control for the influence of the stability of the region on both forms of conflict. Finally, whether a third-party force was present might influence both terrorist attacks and war recurrence.

EMPIRICAL ANALYSIS

The first step in the analysis is to consider whether and how terrorism affects the duration of war. In the following, we consider whether terrorism increases the risk of war recurrence. To preview, these results show that terrorism makes wars last longer and increases the risk of war recurrence once a war has ended. These results are robust across a wide variety of specifications, suggesting that terrorism is frequently responsible for spoiling peace processes by increasing the duration of war or hastening the time until war recurrence.

Spoiling war ending

Table 1 shows the results of two models estimating the relationship between terrorism and the duration of wars. Model 1 contains the results in which terrorism is lagged by one month. Because the model is estimated in accelerated failure-time form, a positive coefficient indicates longer durations (Box-Steffensmeier and Jones 2004). Thus, the results show that as the amount of terrorism increases, the duration of war also increases, which is consistent with hypothesis 1.

Although model 1 suggests a strong relationship between terrorism and longer civil wars, arguably the logged/lagged measure is not the best indicator of the concept. Numerous events in the Israeli-Palestinian peace process, for example, illustrate that groups use terrorism not only in the months prior to proposed agreements but also in the days immediately preceding. The level of terrorism in the current period, therefore, might be most appropriate for estimating when

Table 1. Log-normal Survival Models of War Ending and Recurrence

	Hazard (War Ending)					
	Model 1			Model 2		
	$\hat{\beta}$	SE	<i>p</i>	$\hat{\beta}$	SE	<i>p</i>
War-related terror (log/lag)	.369	.188	.049			
War-related terror (log/smooth)				.566	.222	.011
Population (log)	.369	.116	.001	.363	.120	.002
Ethnic fractionalization	-.499	.783	.524	-.255	.781	.744
GDP (log)	-.194	.177	.272	-.237	.179	.187
Number of actors	.776	.192	.000	.857	.190	.000
Battle deaths (log)	.126	.095	.183	.115	.095	.224
Mountainous terrain	.002	.006	.731	.000	.006	.976
Security guarantee	-6.097	2.734	.026	-6.310	2.716	.020
Constant	-.660	1.903	.729	-.429	1.946	.826
Results in accelerated-failure time form; Years = 1970–2002; Number of subjects = 119; Total war endings = 63						
	Hazard (War Recurrence)					
	Model 3			Model 4		
	$\hat{\beta}$	SE	<i>p</i>	$\hat{\beta}$	SE	<i>p</i>
War-related terror (log/lag)	-.501	.122	.000			
War-related terror (log/smooth)				-.609	.121	.000
Population (log)	-.075	.160	.641	-.059	.145	.683
Ethnic fractionalization	.783	.661	.237	.706	.604	.242
GDP/capita (log/lag)	.622	.281	.027	.681	.265	.010
Instability	-.953	.391	.015	-1.004	.367	.006
Democracy in region	.127	.054	.018	.127	.050	.012
No third-party peacekeepers	-.841	.489	.086	-.843	.457	.065
Constant	10.871	2.601	.000	10.865	2.375	.000
Results in accelerated-failure time form; Years = 1970–99; Number of subjects = 60; Total recurrences = 30						

civil wars end. Using only those events could be problematic, however, because events could occur after an agreement is reached, suggesting that terrorism is not affecting the duration of the war.

Because of these concerns, we use a smoothed measure of terrorism in model 2 (table 1) that weights terrorism in

the previous month with terrorism in the current month. While this does not solve the problem of events occurring after an agreement, it allows us to consider the current month while incorporating the weight of the recent past. The results for the smoothed measure in model 2 indicate that spoiling is again associated with longer durations of civil war.

To aid substantive interpretation, we calculated the predicted hazard of war ending. We generate predictions when all other variables are set at their means and medians and the shift in terrorism is from the mean to one standard deviation above the mean. A standard deviation increase in the logged/lagged version of the variable leads to, on average, an expected decrease in the risk of civil war ending by 52% (model 1, table 1). A standard deviation increase in the logged, smoothed version of the variable leads to, on average, an expected decrease in the risk of civil war ending by 86% (model 2, table 1).

Figure 3a plots these predicted hazards and shows that for average (mean) levels of terrorism, the risk of war ending is higher than it is when there are greater numbers of terrorist events. Put differently, the less terrorism that occurs the more likely it is the war ends sooner. The more terrorism there is, the risk of war ending goes down (the war is longer). These results support hypothesis 1 and indicate that terrorism can have strong negative effects on reaching a settlement to the war.

Spoiling the implementation of peace

Table 1 shows the results of two models estimating the duration of peace until war recurrence. Model 3 shows the results in which the measure of terrorism is lagged by one year. The results show that as the amount of terrorism increases, the duration of time until the war recurs decreases, which is consistent with hypothesis 1. Because the temporal unit of analysis is the year, using information from the current year is very important in these analyses in order to capture events preceding settlements by days or months. As with model 2, we thus use a smoothed measure over the current year and one previous year. Using information from the current year shows that the results are stronger.

To aid substantive interpretation, we again considered predicted changes in the hazard of war recurrence. We generate predictions when all other variables are set at their means and medians and the shift in terrorism goes from the mean to one standard deviation above the mean. A standard deviation increase in the logged, lagged version of the variable leads to, on average, an expected increase in the risk of civil war recurrence by 55% (model 3, table 1). A standard deviation increase in the logged, smoothed version of the variable leads to, on average, an expected increase in the risk of civil war recurrence by 60% (model 4, table 1).

Figure 3b displays these predicted hazards and shows that for average levels of terrorism the risk of war recurrence is lower than it is when more terrorism occurs. Put differently, the more terrorism that occurs, the higher the risk of civil war recurrence. Taken together, these results support hy-

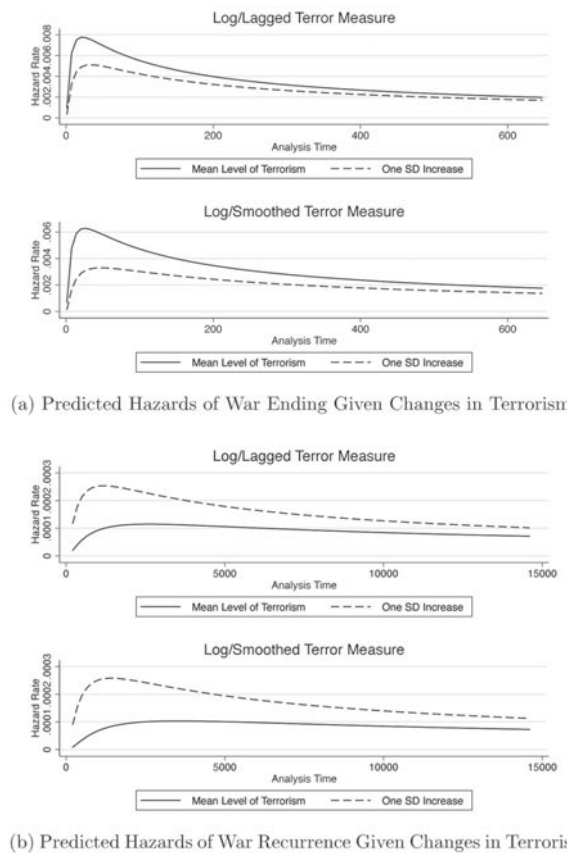


Figure 3. Predicted hazards of war ending (a) and recurrence (b) given changes in terrorism.

pothesis 2 and suggest that terrorism can be detrimental and hasten the time to war recurrence.

We also estimated models 1–4 with and without controls as well as with a variety of different control variable specifications, and the results are not sensitive to these changes in specification. We also include the change in war-related terrorism over time. Presumably, both the levels and changes ought to have an effect on the duration of the war. Increases in terrorism should make wars longer (and time-to-recurrence quicker), whereas decreases in terrorism should make war shorter (and time-to-recurrence longer). As with levels of terrorism, we also calculated the smoothed changes in terrorism over two months, and the results are robust to including earlier changes. The results attenuate some, suggesting that the more proximate changes have a greater effect.

Models 1–4 above include a variety of control variables thought to affect the duration of war and, if ended, the subsequent duration of peace. The results for the control variables are, qualitatively, what we would expect based on past research. Thus, although the results suggest that terrorism

is an important factor, it is not the sole factor nor is it necessarily the most important. Including terrorism complements other explanations and is robust across a diverse set of alternative factors. In all of these analyses, the results demonstrate that terrorism makes civil wars more difficult to resolve.

Robustness

To probe the robustness of the results to different specifications, alternative measures, and ways to better isolate the potential impact of terrorism on civil war duration and recurrence, we estimate a series of models in an appendix.¹⁶ In sum, we find unqualified support for hypothesis 2, or that terrorism tends to increase the likelihood that war recurs, across many different models. Our support for hypothesis 1, or that terrorism tends to increase the duration of civil war, is generally supported. We do find that the inference becomes less stable when implementing different estimators for the survival analysis and when including controls for state violence. With that said, the majority of the models provide support for this hypothesis.

CONCLUSION

Our argument and results suggest that terrorism influences civil war processes and results in making wars more difficult to resolve and more likely to recur. Although many scholars discount the role of potential spoilers as marginal or fringe actors, these results show that even low-level terrorist-type violence during peace processes can have a powerful effect on the outcomes of the war. The results are robust across a variety of specifications.

These results offer insights for several different literatures. First, the general literature on civil war resolution mostly considers only the two main actors to the war: a government and opposition (e.g., Mason and Fett 1996; Walter 2002). Our results suggest that other peripheral parties can have an important impact on war outcomes. Although we do not examine a more micro-level analysis of this process, we expect that looking at a particular dynamic interaction between a state and a main insurgent group and violence from tertiary actors would provide an extension and direction for future research.¹⁷ Second, the spoiler literature has argued that spoiler groups could affect whether wars recur (e.g., Greenhill and Major 2007; Stedman 1997) but has not pro-

vided systematic empirical tests of the hypothesis. This study provides a test not only for the postwar phase but also for the negotiation phase and offers new empirical insights about the possible effects of extremist group violence.

Further research on this topic needs to address at least a few areas. First, it might be the case that specific targets (or tactics) are chosen in attempts to spoil. As a first venture into this domain, we have aggregated all terrorist events on the logic that they all are relevant to the peace process. Disaggregation, however would likely create some important insights about which targets are chosen and which tactics are most useful in spoiling the peace. Notably, the intensity of the attack or its symbolic value may have differential impacts. Suicide terrorism is one version of spoiling, which could have its own logic (Pape 2005) or may be utilized in constrained sets of circumstances (Bloom 2005). Second, there could be a feedback effect in that terrorism affects the outcome of the war, which affects whether more terrorism is used, which in turn affects whether wars recur. Uncovering how the sequence of events motivates behavior is an important but challenging next step. To sort out possible endogeneity, this area faces significant challenges in identifying instrumental variables and other randomization strategies. That said, we conjecture that there could be natural experiments that could be leveraged in order to take advantage of the benefits of randomization. The prerequisite would be to identify terrorism that is used as-if at random and then identify the differential effects of areas with and without terrorism. While these empirical findings are solid, the mechanisms for why spoiling can succeed or fail are not fully identified here or elsewhere. In the future, work that can sort among potential claims and examine more micro-level data could help develop a more complete picture of this process of violence. Finally, once terrorism data are geographically coded for the most recent decade, this question should be considered again for possible post-9/11 differences. Although scholars have identified some post-9/11 effects, it is not straightforward that patterns within civil war zones would change in this most recent era.

In conclusion, much of the recent work on civil war and terrorism treats these forms of political violence as distinct phenomena worthy of independent analysis.¹⁸ If they are both types of contention that are utilized when states and dissidents cannot resolve disputes through institutional means, then considering how they interact, overlap, and relate is an important path of inquiry. Related, many of these violent interactions develop out of initially nonviolent interactions be-

16. See www.michael-findley.com and <https://dataverse.harvard.edu/dataverse/jyoung> for the appendix and replication materials.

17. See Phillips (2015) for a discussion about focusing on terrorist groups as the unit of observation.

18. Findley and Young (2012b) and Sambanis (2008) are exceptions.

tween and among societal actors. Recent work has renewed interest in nonviolent dissent (Stephan and Chenoweth 2008) and should be integrated with the study of larger processes that lead to political violence to help explain why some tactics are primarily utilized in certain conflicts while others are largely ignored.

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REFERENCES

- Abrahms, Max. 2006. "Why Terrorism Does Not Work." *International Security* 31 (2): 42–78.
- Abrahms, Max. 2012. "The Political Effectiveness of Terrorism Revisited." *Comparative Political Studies* 45 (3): 366–93.
- Abrahms, Max. 2013. "The Credibility Paradox: Violence as a Double-Edged Sword in International Politics." *International Studies Quarterly* 57 (4): 660–71.
- Achen, Christopher. 2005. "Let's Put Garbage-Can Regressions and Garbage-Can Probits Where They Belong." *Conflict Management and Peace Science* 22 (4): 327–39.
- Asal, Victor, Luiz De La Calle, Michael Findley, and Joseph Young. 2012. "Killing Civilians or Holding Territory? How to Think about Terrorism." *International Studies Review* 14 (3): 475–97.
- Ayres, William. 2006. "No Peace at Any Price: The Effectiveness of Spoilers in Intrastate Conflicts." Presented at the annual meeting of the International Studies Association, San Diego, March 22–25.
- Balcells, Laia. 2010. "Rivalry and Revenge: Violence against Civilians in Conventional Civil Wars." *International Studies Quarterly* 54 (2): 291–313.
- Bloom, Mia. 2005. *Dying to Kill: The Allure of Suicide Terror*. New York: Columbia University Press.
- Bohrer, Robert E., II, and Caroline Hartzell. 2005. "After the Shooting Stops: Civil War Settlements and the Postwar Environment." Presented at the annual meeting of the International Studies Association, Honolulu, HI.
- Box-Steffensmeier, Janet M., and Bradford Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. Cambridge: Cambridge University Press.
- Braithwaite, Alex, Dennis Foster, and David Sobek. 2010. "Ballots, Bargains, and Bombs: Terrorist Targeting of Spoiler Opportunities." *International Interactions* 36 (3): 294–305.
- Bueno de Mesquita, Ethan. 2005. "Conciliation, Counterterrorism, and Patterns of Terrorist Violence." *International Organization* 59 (1): 145–76.
- Carter, David. 2015. "Provocation and the Strategy of Terrorist and Guerrilla Attacks." *International Organization*. Forthcoming.
- Carter, David, and Curtis Signorino. 2010. "Back to the Future: Modeling Time Dependence in Binary Data." *Political Analysis* 18 (3): 271–92.
- Cleves, Mario, William Gould, Roberto Gutierrez, and Yulia Marchenko. 2008. *An Introduction to Survival Analysis Using Stata*. College Station, TX: Stata.
- Collier, Paul, Anke Hoeffler, and Måns Söderbom. 2004. "On the Duration of Civil War." *Journal of Peace Research* 41 (3): 253–73.
- Collier, Paul, Anke Hoeffler, Måns Söderbom. 2008. "Post-Conflict Risks." *Journal of Peace Research* 45 (4): 461–78.
- Cunningham, David. 2006. "Veto Players and Civil War Duration." *American Journal of Political Science* 50 (4): 875–92.
- Darby, John. 2001. *The Effects of Violence on Peace Processes*. Washington, DC: United States Institute of Peace Press.
- Darby, John, and Roger MacGinty. 2000. *The Management of Peace Processes*. Houndsmills: Palgrave Macmillan.
- Darby, John, and Roger MacGinty, eds. 2003. *Contemporary Peacemaking: Conflict, Violence and Peace Processes*. Houndsmills: Palgrave Macmillan.
- DeRouen, Karl, and David Sobek. 2004. "The Dynamics of Civil War Duration and Outcome." *Journal of Peace Research* 41 (3): 303–20.
- Fearon, James, and David Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97:75–90.
- Findley, Michael G. 2007. "Spoiling the Peace or Seeking the Spoils? Civil War Resolution and the Role of Spoilers." PhD diss., University of Illinois, Urbana-Champaign.
- Findley, Michael G., and Joseph K. Young. 2011. "Terrorism, Democracy, and Credible Commitments." *International Studies Quarterly* 55 (2): 357–78.
- Findley, Michael G., and Joseph K. Young. 2012a. "More Combatant Groups, More Terror? Empirical Tests of an Outbidding Logic." *Terrorism and Political Violence* 24 (5): 706–21.
- Findley, Michael G., and Joseph K. Young. 2012b. "Terrorism and Civil War: A Spatial and Temporal Approach to a Conceptual Problem." *Perspectives on Politics* 10 (2): 285–305.
- Fortna, Virginia Page. 2004a. "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War." *International Studies Quarterly* 48(2): 269–92.
- Fortna, Virginia Page. 2004b. "Where Have All the Victories Gone? War Outcomes in Historical Perspective." Unpublished manuscript, Department of Political Science, Columbia University.
- Greenhill, Kelly, and Solomon Major. 2007. "The Perils of Profiling: Civil War Spoilers and the Collapse of Intrastate Peace Accords." *International Security* 31 (3): 7–40.
- Höglund, Kristine. 2008. *Peace Negotiations in the Shadow of Violence*, International Negotiation Series, vol. 6. Lieden, The Netherlands: Brill /Martinus Nijhoff.
- Hultman, Lisa. 2007. "Battle Losses and Rebel Violence: Raising the Costs for Fighting." *Terrorism and Political Violence* 19 (2): 205–22.
- Humphreys, Macartan, and Jeremy Weinstein. 2006. "Handling and Manhandling Civilians in Civil Wars." *American Political Science Review* 100 (3): 429–47.
- Johnston, Patrick. n.d. "Spoiler Problems and the Failure of the Sudanese Peace Processes." Unpublished manuscript, Northwestern University.
- Kalyvas, Stathis. 2004. "The Paradox of Terrorism in Civil War." *Journal of Ethics* 8:97–138.
- Kalyvas, Stathis. 2006. *The Logic of Violence in Civil War*. Cambridge: Cambridge University Press.
- Kalyvas, Stathis N., and Laia Balcells. 2010. "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict." *American Political Science Review* 104 (3): 415–29.
- Kydd, Andrew, and Barbara Walter. 2002. "Sabotaging the Peace: The Politics of Extremist Violence." *International Organization* 56 (2): 263–96.
- Kydd, Andrew, and Barbara Walter. 2006. "The Strategies of Terrorism." *International Security* 31 (1): 49–80.
- LaFree, Gary, and Laura Dugan. 2007. "Introducing the Global Terrorism Database." *Terrorism and Political Violence* 19:181–204.
- Lake, David. 2002. "Rational Extremism: Understanding Terrorism in the Twenty-First Century." *International Organization* 56 (Spring): 15–29.

- Li, Quan. 2005. "Does Democracy Promote or Reduce Transnational Terrorist Incidences?" *Journal of Conflict Resolution* 49 (2): 278–97.
- Mason, T. David, and Patrick Fett. 1996. "How Civil Wars End: A Rational Choice Approach." *Journal of Conflict Resolution* 40 (4): 546–68.
- Mattes, Michaela, and Burcu Savun. 2009. "Fostering Peace after Civil War: Commitment Problems and Agreement Design." *International Studies Quarterly* 53 (3): 737–59.
- Nemeth, Stephen C., Jacob A. Mauslein, and Craig Stapley. 2014. "The Primacy of the Local: Identifying Terrorist Hot Spots Using Geographic Information Systems." *Journal of Politics* 76 (2): 304–17.
- Newman, Edward, and Oliver Richmond. 2006. *Challenges to Peacebuilding: Managing Spoilers during Conflict Resolution*. Tokyo: United Nations University Press.
- Nilsson, Desirée. 2008. "Partial Peace: Rebel Groups Inside and Outside of Civil War Settlements." *Journal of Peace Research* 45 (4): 479–95.
- Pape, Robert. 2005. *Dying to Win: The Strategic Logic of Suicide Terror*. New York: Random House.
- Phillips, Brian J. 2015. "What Is a Terrorist Group? Conceptual Issues and Empirical Implications." *Terrorism and Political Violence* 27 (2): 225–42.
- Ray, James. 2005. "Constructing Multivariate Analyses (of Dangerous Dyads)." *Conflict Management and Peace Science* 22 (4): 277–92.
- Rød, Jan Ketil. 2003. "ViewConflicts: Software for Visualising Spatiotemporal Data on Armed Conflicts." Presented at the Joint Sessions of Workshops European Consortium for Political Research, Edinburgh, UK, March 28 to April 2.
- Sambanis, Nicholas. 2004. "What Is Civil War? Conceptual and Empirical Complexities of an Operational Definition." *Journal of Conflict Resolution* 48 (6): 814–58.
- Sambanis, Nicholas. 2008. "Terrorism and Civil War." In Philip Keefer and Norman Loayza, eds., *Terrorism, Economic Development, and Political Openness*. New York: Cambridge.
- Stedman, Stephen. 1997. "Spoiler Problems in Peace Processes." *International Security* 22 (2): 5–53.
- Stephan, Maria, and Erica Chenoweth. 2008. "Why Civil Resistance Works: The Strategic Logic of Nonviolent Conflict." *International Security* 33 (1): 7–44.
- Thomas, Jakana. 2014. "Rewarding Bad Behavior: How Governments Respond to Terrorism in Civil War." *American Journal of Political Science* 58 (4): 804–18.
- Uppsala. 2006. Uppsala Conflict Data Program, Uppsala Conflict Database, Uppsala University. <http://www.pcr.uu.se/database> (accessed May 30, 2006).
- Walter, Barbara F. 2002. *Committing to Peace: The Successful Settlement of Civil Wars*. Princeton, NJ: Princeton University Press.
- Weinberg, Leonard, Ami Pedahzur, and Sivan Hirsch-Hoefler. 2004. "The Challenges of Conceptualizing Terrorism." *Terrorism and Political Violence* 16 (4): 777–94.
- Wood, Elisabeth. 2006. "Forging an End to Civil War: Distributional Aspects of Robust Settlements." Unpublished manuscript, Department of Politics, New York University.
- Young, Joseph K., and Michael G. Findley. 2011. "Promise and Pitfalls of Terrorism Research." *International Studies Review* 13 (3): 411–31.
- Zahar, Marie-Joëlle. 2003. "Reframing the Spoiler Debate in Peace Processes." In John Darby, Roger MacGinty, and Rolf Habel, eds., *Contemporary Peace Making: Conflict, Violence, and Peace Processes*. Basingstoke: Macmillan, 114–24.

Annex 496

Keith Hiatt, Open Source Evidence on Trial, 125 Yale L.J. 323 (2016)

Open Source Evidence on Trial

Keith Hiatt

INTRODUCTION

Investigating war crimes is a messy business. It is difficult and dangerous. International criminal tribunals charge powerful individuals, including heads of state and leaders of armed forces, whose personal resources may well exceed the annual operating budget of the investigating tribunal.¹ It is not surprising when witnesses for the prosecution recant or decline to testify.² Witnesses may end up missing or killed. In court, as in war, witnesses bear the risks. While the court pays the financial expense of an investigation, witnesses put their lives on the line. No other form of evidence is so costly.³

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1. In 2011, defendant Uhuru Kenyatta had an estimated net worth of \$500 million. Kerry A. Dolan, *Tallying Africa's Wealthiest*, FORBES (Nov. 16, 2011), http://www.forbes.com/lists/2011/89/africa-billionaires-11_Uhuru-Kenyatta_FO2Q.html [<http://perma.cc/M68F-3NF8>].
 2. In 2014, the International Criminal Court (ICC) dismissed charges against President Uhuru Kenyatta, without prejudice, in part due to witnesses dying, recanting, or refusing to testify. Press Release, Int'l Criminal Court, Statement of the Prosecutor of the International Criminal Court, Fatou Bensouda, on the Withdrawal of Charges Against Mr. Uhuru Muigai Kenyatta (Dec. 5, 2014), http://www.icc-cpi.int/en_menus/icc/press%20and%20media/press%20releases/Pages/otp-statement-05-12-2014-2.aspx [<http://perma.cc/8BJS-7JLL>].
 3. In fact, the financial costs of investigations are relatively modest. For example, the 2015 budget of the Office of the Prosecutor of the ICC, which consists of both investigators and prosecuting attorneys, is roughly \$42 million—or \$18 million less than the City of Berkeley spends on its municipal Police Department. See *Report on Budget Performance of the International Criminal Court as of 30 June 2015*, INT'L CRIM. CT. 4 (Aug. 7, 2015), http://www.icc-cpi.int/iccdocs/asp_docs/ASP14/ICC-ASP-14-11-ENG.pdf [<http://perma.cc/A6CF-7GC3>] (noting that the approved annual budget for the Office of the Prosecutor for 2015 is €9.61 million); see also Teresa Berkeley-Simmons et al., *City of Berkeley FY 2014 & FY 2015 Adopted Biennial Budget*, OFF. BUDGET & FISCAL MGMT. 260 (June 26, 2013), http://www.ci.berkeley.ca.us/uploadedFiles/Manager/Budget/BudgetBookPRINT_102313.pdf [<http://perma.cc/5Y94-A3U3>] (noting that the adopted annual budget for the City of Berkeley police department in FY 2015 is \$60.24 million); Board of Governors of the Federal Reserve System (US) (Jan. 25, 2016), *U.S. / Euro Foreign Exchange Rate* [EXUSEU], retrieved from FRED, Federal Reserve Bank of St. Louis, <http://research.stlouisfed.org/fred2/series>

International human rights courts and their observers have expressed hope that new information technologies might bring about better, cheaper, and safer prosecutions. A promising but underexplored approach involves the use of “open source intelligence” in international prosecutions for genocide, war crimes, and crimes against humanity. Open source intelligence “refers to a broad array of information and sources that are generally available”⁴ to the public, such as news media, academic work, and public reports.⁵ Increasingly, social media and online video and image sharing services provide a rich, open source of information about crimes and their perpetrators. A recent survey of law enforcement professionals found that eighty percent “used social media platforms as intelligence gathering tools.”⁶ But to date, international criminal tribunals have made only limited use of such sources.⁷

In this Essay, I examine challenges presented by open source investigations that rely on social media or online video and image sharing websites. I present one example of these challenges drawn from the International Criminal Court (ICC). While questions remain about the reliability and admissibility of evidence obtained from open sources, I contend that these new investigative techniques are too important to ignore.

I. SECURITY

Open source investigations present several challenges. Reliance on open source evidence may increase the risks facing eyewitnesses and people who gather the information first-hand—the uploader of an incriminating video, perhaps, or bystanders in a photo. By using these materials, investigators may draw unwanted attention to people depicted in them. The disclosure of a photograph to a powerful defendant or a hostile government might expose the identity of a witness, or otherwise endanger third parties.

/EXUSEU [<http://perma.cc/596C-XSUA>] (noting USD:EUR exchange rate for December 2015 of 1.09:1).

4. *Intelligence Collection Disciplines (INTs)*, FED. BUREAU INVESTIGATION, <http://www.fbi.gov/about-us/intelligence/disciplines> [<http://perma.cc/W6XK-YNK3>].
5. Despite the identical terminology, “open source” investigations are not related to “open source” software. In the jargon of investigators, the term only refers to publicly available information, as distinct from human, signal, imagery, or other forms of intelligence.
6. Alexandra Mateescu et al., *Social Media Surveillance and Law Enforcement*, DATA CIVIL RIGHTS.ORG (Oct. 27, 2015), http://www.datacivilrights.org/pubs/2015-1027/Social_Media_Surveillance_and_Law_Enforcement.pdf [<http://perma.cc/D8R8-SVRE>].
7. Though the ICC’s Strategic Plan articulates the need to collect and analyze open source evidence, progress has been slow. See Office of the Prosecutor, *Strategic Plan 2016-2018*, INT’L CRIM. CT. ¶¶ 54-55 (July 6, 2015), http://www.icc-cpi.int/iccdocs/otp/070715-OTP_Strategic_Plan_2016-2018.pdf [<http://perma.cc/WA8W-ADYS>].

But despite the risks, in other ways open source investigations can actually be safer than traditional, eyewitness-based investigations.⁸ Investigators need not travel and can do much of their work from an Internet-connected device, away from physical dangers that missions may present. Additionally, open source investigations may draw on the expertise of multiple experts and “the crowd” through online collaboration.⁹ These collaborations have produced high-quality reports presenting compelling evidence about chemical weapon deployment in Syria¹⁰ and Russian involvement in Ukraine.¹¹

Importantly, those reports did not rely on witness testimony. Investigators made their case by relying exclusively on open source materials. In court, the use of open source information, together with other forms of corroborating evidence, can help protect witnesses. First, when key facts are established by open source evidence, fewer witnesses must take the risk of testifying. Second, when witnesses do testify, corroboration from open sources helps makes them safer. A lone witness is a vulnerable witness. But when witness testimony is backed by corroboration from other sources, the witness is bolstered and supported.¹² Witnesses will always be necessary at trial, and there will always be risks, but open source investigations can help make human rights prosecutions safer.

II. AVAILABILITY

Open source investigations face another challenge: the availability of open source materials in the region under investigation. Human rights tribunals usually are established after the cessation of hostilities, and it may take years

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8. Storyful, a pioneer in “social journalism” that relies heavily on open sources to corroborate and verify reported events, cites as its “founding commandment” the principle that “[t]here is [a]lways [s]omeone [c]loser to the [s]tory.” Mark Little, *Ten Principles that Power Social Journalism*, STORYFUL (Mar. 12, 2014), <http://blog.storyful.com/2014/03/12/ten-principles-that-power-social-journalism> [<http://perma.cc/65Q2-5MWE>].
 9. For example, see the many and varied contributors to Bellingcat’s citizen-led investigative efforts. *Contributors*, BELLINGCAT, <http://www.bellingcat.com/contributors> [<http://perma.cc/WBG4-SBTX>].
 10. See Patrick Radden Keefe, *Rocket Man: How an Unemployed Blogger Confirmed that Syria Had Used Chemical Weapons*, NEW YORKER (Nov. 25, 2013), <http://www.newyorker.com/magazine/2013/11/25/rocket-man-2> [<http://perma.cc/JTN9-M5GA>].
 11. See Maksymilian Czuperski et al., *Hiding in Plain Sight: Putin’s War in Ukraine*, ATLANTIC COUNCIL (Oct. 15, 2015), <http://www.atlanticcouncil.org/publications/reports/hiding-in-plain-sight-putin-s-war-in-ukraine-and-boris-nemtsov-s-putin-war> [<http://perma.cc/Y7NR-ALVY>].
 12. See Alexa Koenig, Stephen Cody & Eric Stover, *After Kenya, Lessons for Witness Protection*, INT’L CRIM. JUST. TODAY (June 1, 2015), <http://www.international-criminal-justice-today.org/arguendo/article/after-kenya-lessons-for-witness-protection> [<http://perma.cc/F6FA-JYGT>].

before they are ready for trial. As a result, today's investigations concern yesterday's atrocities. And those atrocities are documented with yesterday's technologies, like paper documents, witness statements, NGO reports, news media, and photographs obtained from the field. For example, the International Criminal Tribunal for the former Yugoslavia concerns itself with crimes committed during conflicts that were resolved by 2001, years before the advent of social media and online video sharing.¹³ Similarly, the ICC has only prosecuted crimes that occurred in regions of Africa where access to the Internet was limited.¹⁴

But times have changed, and human rights tribunals must change with them. The ICC is currently engaged in preliminary examinations in Colombia, Georgia, Palestine, and Ukraine, among other countries.¹⁵ In African countries, too, time has not stood still, and the court continues to investigate more recent human rights violations. If these preliminary examinations become prosecutions, the universe of potential evidence will be different, and much larger, than anything the court has seen in the past. Millions of people living in these regions have access to Internet-connected devices and social media. Hundreds of thousands of videos depicting human rights violations have already been posted online. Many of them will be relevant and all of them will need examination.

III. RELIABILITY

A. *Circumstantial, not Direct, Evidence*

Perhaps the biggest challenge presented by open source investigations is reliability. Open source evidence is almost always circumstantial, requiring an inferential step to connect the dots. For example, a video shared online depicting a Russian anti-aircraft system in Luhansk, Ukraine, supports an inference that the Russian military supplied the weapon to rebels in Ukraine.¹⁶ But that inference is not unassailable. Even assuming the video is entirely authentic, the footage might mean only that the Ukrainian army seized a

13. INT'L CRIMINAL TRIBUNAL FOR THE FORMER YUGOSLAVIA, *The Conflicts*, <http://www.icty.org/en/about/what-former-yugoslavia/conflicts> [http://perma.cc/Z2DY-T4MU].

14. *Prosecutions*, INT'L CRIM. CT., http://www.icc-cpi.int/en_menus/icc/structure%20of%20the%20court/office%20of%20the%20prosecutor/prosecutions/Pages/prosecutions.aspx [http://perma.cc/RU6B-ZER6].

15. *Preliminary Examinations*, INT'L CRIM. CT., http://www.icc-cpi.int/en_menus/icc/structure%20of%20the%20court/office%20of%20the%20prosecutor/comm%20and%20ref/Pages/communications%20and%20referrals.aspx [http://perma.cc/86AF-SYA6].

16. See Eliot Higgins, *Russia's Pantsir-S1s Geolocated in Ukraine*, BELLINGCAT (May 28, 2015), <http://www.bellingcat.com/resources/case-studies/2015/05/28/russias-pantsir-s1s-geolocated-in-ukraine> [http://perma.cc/37G5-3ZR6].

Russian weapon. Or it might be that the city seen in the video is not actually Luhansk, or that the weapon system is not actually Russian. A fair trier of fact, faced with the video, would likely want to examine corroborating evidence from other sources before reaching a conclusion. Indeed, open source evidence requires corroboration and triangulation from multiple sources to piece together what it might prove. It may also require an expert witness to explain what it is, and what it means. When taken in context, corroborated, and explained by knowledgeable witnesses, open source evidence can be very compelling.

B. *A Flexible, but Unclear, Evidentiary Standard*

But open source evidence is largely untested in international human rights tribunals. A recent example from the ICC will illustrate the uncertain evidentiary status of open source materials. The court's governing law, the Rome Statute, and its Rules of Procedure and Evidence require it to consider treaties and rules of international law.¹⁷ But the ICC is generally barred from following any particular set of national rules governing evidence.¹⁸ Interestingly, the Rules do not designate categories of inadmissible evidence. Instead, the Rules set out a simple framework for evidentiary analysis.¹⁹ As construed by the court, and in theory, the Rules require that evidence be admitted or rejected based on its (1) relevance, (2) probative value, and (3) prejudicial impact.²⁰ In practice, though, most evidence is admitted, and questions about the evidence go to its weight rather than its admissibility.²¹

C. *Bemba and Social Media*

The ongoing case against Jean-Pierre Bemba Gombo shows the impact of this flexible evidentiary standard. The ICC indicted Bemba, in his capacity as a

17. Rome Statute of the International Criminal Court art. 21(a), July 17, 1998, 2187 U.N.T.S. 90 [hereinafter Rome Statute].

18. Assembly of States Parties to the Rome Statute of the International Criminal Court, First Session, New York 3-10 September 2002 Official Records, pt. II.A, U.N. Doc. ICC-ASP/1/3 (Sept. 25, 2002) [hereinafter Rules of Evidence and Procedure].

19. Rules of Evidence and Procedure, *supra* note 18, at ¶ 63.

20. Prosecutor v. Bemba, ICC-01/05-01/08-2299, Decision on the Prosecution's Application for Admission of Materials into Evidence Pursuant to Article 64(9) of the Rome Statute, ¶ 7 (Oct. 8, 2012) [hereinafter *Bemba*, Decision on Admission].

21. Aida Ashouri, Caleb Bowers & Cherrie Warden, *An Overview of the Use of Digital Evidence in International Criminal Courts*, 11 DIGITAL EVIDENCE AND ELEC. SIGNATURE L. REV. 115, 118 (2014).

military commander, for murder, rape, and pillaging.²² But the court also alleged that Bemba attempted to pay off a witness. Lawyers for the prosecution submitted to the court evidence that showed a wire transfer of \$1,335.16 from Bemba's sister to a witness, who they claimed then relayed the money to another witness, who then gave false testimony.²³ The prosecution also submitted photographs obtained from a Facebook page.²⁴ The Facebook photos purported to show the two allegedly corrupted witnesses together—important linkage evidence for the prosecution.²⁵ The defense objected to the admission of these photos.²⁶

In this case, the dispute over admission of the photos consists of one question: whether they have probative value.²⁷ Probative value, according to the court, is determined via a “fact-specific inquiry [that] . . . take[s] into account innumerable factors, including the indicia of reliability, trustworthiness, accuracy . . . as well as . . . the extent to which the item has been authenticated.”²⁸ The defense contends that it is impossible to know who posted the photos, when they were taken, where they were taken, who took them, or even if the people in the photos are who the prosecution claims they are.²⁹ The defense also takes aim at the prosecution's method of extracting the photos from Facebook.³⁰ Because the prosecution does not have direct access to Facebook's servers or data, it relied on screenshots of Facebook pages showing the photos. As a result, the prosecution does not have access to metadata (such as a time stamp or the IP address of the uploader) to assist in authentication, and there is no way to authoritatively determine the identity of the person who posted the photos.³¹

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22. Prosecutor v Bemba, ICC-01/05-01/08-424, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor Against Jean-Pierre Bemba Gombo (June 15, 2009).
 23. Prosecutor v. Bemba, ICC-01/05-01/13-1170, Prosecution's Third Request for the Admission of Evidence from the Bar Table, ¶¶ 49-53 (Sept. 18, 2015).
 24. Prosecutor v. Bemba, ICC-01/05-01/13-1245, Public Redacted Version of Defense Response to Prosecution's Third Request for the Admission of Evidence from the Bar Table, ¶¶ 83 (Oct. 9, 2015) [hereinafter *Bemba*, Defense Response].
 25. See Prosecutor v. Bemba, ICC-01/05-01/13-1170, Prosecution's Third Request for the Admission of Evidence from the Bar Table, ¶¶ 49-53 (Sept. 18, 2015).
 26. *Bemba*, Defense Response, *supra* note 24, at ¶¶ 83-86.
 27. The defense appears to have conceded the other two criteria for admissibility under the Statute: relevance and lack of prejudicial impact. *Id.*
 28. *Bemba*, Decision on Admission, *supra* note 20, at ¶ 8 (quoting Prosecutor v. Bemba, ICC-01/05-01/08-2012, Public Redacted Version of the First Decision on the Prosecution and Defense Requests for the Admission of Evidence, ¶ 15 (Dec. 15, 2011)).
 29. See *Bemba*, Defense Response, *supra* note 24, at ¶¶ 83-84.
 30. *Id.* at ¶ 85.
 31. *Id.*

As of this writing, the ICC has not issued its decision. The court's flexible evidentiary standard makes it difficult to predict the court's ruling on the prosecution's submission or, more importantly, the future of open source evidence. It is likely that the court will admit the photos, because most evidence is admitted.³² But the probative value of the photos depends on whether they are what the prosecution says they are. Taken alone, the photos are not enough to establish that Bemba paid off witnesses. Taken together with other evidence, they might be.

Even though the court will likely admit the photos, it is less clear how much weight it will accord them. On the one hand, the ICC's flexible evidentiary standard allows it to take a holistic approach to weighing evidence. On the other hand, the flexibility has the effect of concealing the standard. The weighing happens in the judges' heads, not in a written decision.

By eschewing the complex and elaborated evidentiary standards of other jurisdictions, the ICC has maximized its flexibility to admit whatever it likes. But exclusionary rules of evidence exist for a reason. For example, in the United States, the hearsay rule excludes out-of-court statements when offered to prove the truth of the matter asserted, unless the statement is covered by one of several exceptions (such business, public, and family records). Courts have developed these exceptions over centuries, and they function as a guide to the kinds of statements judges will find reliable.³³ The ICC, free of the hearsay rule and its exceptions, is also "free" of clear guidance about what to consider reliable. For that reason, it is far from clear what standards the court will apply when it considers social media and open source evidence in the future.

CONCLUSION

Open source investigations present several challenges. They introduce certain safety risks even while mitigating or eliminating others. They may not be available or effective for situations that predate social media or video sharing, though this is an ever-diminishing concern. And they pose a challenge to tribunals about the nature of reliability and evidentiary standards. International human rights tribunals, like the ICC, are only just beginning to decide what to make of evidence obtained from open sources like Facebook and YouTube.

But the defenders of human rights must change with a changing world. The widespread adoption of Internet-connected mobile devices and social

32. Ashouri et al., *supra* note 21, at 118.

33. Eleanor Swift, *A Foundation Fact Approach to Hearsay*, 70 CALIF. L. REV. 1339, 1346 (1987) ("Judges, and now legislatures, have categorized the particular kinds of declarants, circumstances, and contents of speech that they believe increase the reliability of hearsay statements.").

media has resulted in rich but untraditional sources of evidence. Open source investigations offer a way to make sense of the vast amount of information available online. They will save money. More importantly, they will save lives. For these reasons, international human rights tribunals should embrace open source investigations, and should clarify evidentiary rules to allow for admission, and clearer weighing, of this new and powerful kind of evidence.

Keith Hiatt is the Director of the Human Rights and Technology Program at the Human Rights Center at UC Berkeley School of Law. He serves on the Technology Advisory Board of the International Criminal Court's Office of the Prosecutor. For her excellent research assistance, he thanks Natalia Krapiva.

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Annex 497

Design, maintenance and combat use of short-range surface-to-air missile systems. 9A310M1 self-propelled transporter-erector-launcher-radar. Set of lectures. Part 1. Skorik, A.B., Florov, O.D., Nikiforov, I.A., Halytskyi, O.F., Morhun, Ye.V.; Kharkiv: KhN

This document has been translated from its original language into English, an official language of the Court, pursuant to Rules of the Court, Article 51.

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MINISTRY OF DEFENSE OF UKRAINE
IVAN KOZHEDUB NATIONAL AIR FORCE UNIVERSITY
OF KHARKIV

**CONSTRUCTION, TECHNICAL OPERATION
AND COMBAT USE
OF FIRE CONTROL TOOLS
IN SHORT-RANGE
SURFACE-TO-AIR MISSILE SYSTEMS**

Part 1

SELF-PROPELLED FIRE INSTALLATION 9A310M1

Study Guide

Editors

A.B. Skoryk PhD (Engineering), lecturer

O.D. Florov PhD (Engineering), lecturer

Kharkiv

2017

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S15

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Authors: A.B. Skoryk, O.D. Florov, I.A. Nikiforov, O.F. Galytsky, Y.V. Morgun.

Reviewers: Prof M.O. Yermoshyn, PhD (Military Science);
Prof. V.V. Burtsev, PhD (Engineering)

Construction, technical operation and combat use of fire control tools in short-range
S15 surface-to-air missile systems Part 1.

Self-propelled fire installation 9A310M1: study guide/ A.B. Skoryk, O.D. Florov, I.A. Nikiforov, O.F. Galytsky, Y.V. Morgun, Ed. A.B. Skoryk and O.D. Florov. – Kharkiv National Air Force University, 2017. – 208 pages, illustrated.

The guide describes features characterizing the construction, functioning, hardware implementation and technical operation of the self-propelled mount launching system 9A310M1.

The guide is intended for use during training at the higher education establishments of the Ministry of Defense of Ukraine and other military institutions, in the study of the self-propelled mount launching system 9A310M1, a component of the BUK-M1 surface-to-air missile system. The guide is intended for use by officers in their independent study of specialist subjects as part of commanding officer training and in the technical and specialist training of personnel. The study guide “Construction, technical operation and combat use of fire control tools in short-range surface- to-air missile systems” consists of two parts.

Part 2, “The 9S35M1 radar”, was published separately in 2016. Authors: A.B. Skoryk, O.D. Florov, O.F. Galytsky, O.O. Zverev; Ed. A.B. Skoryk.

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1.2. SURFACE-TO-AIR MISSILE SYSTEMS: COMBAT TOOL CHARACTERISTICS

1.2.1. Command Post 9S470M1

The 9S470M1 command post (Figure 1.2) is intended for the automatic control of a detached surface to air missile battalion. The PBU 9S470M1 equipment provides automation for the following tasks:

- 1) putting the battalion's combat tools into different stages of combat alert;
- 2) gathering, processing and displaying information about the airborne environment received from the 9S18M1 acquisition radar and the SPM 9A310M1 launcher;
- 3) receiving and displaying data on the location and condition of 9K37M1 surface to air missile system combat tools and allocating areas of responsibility for TELAR 9A310M1;
- 4) processing and working out the optimum solution for target allocation;
- 5) transmitting target selection to the 9A310M1 TELAR and control over task performance;
- 6) control over combat tool operational modes in the surface to air missile system;
- 7) exchanging information with the surface to air missile brigade command post;
- 8) alerting friendly planes in the battalion's zone of action;
- 9) documenting combat;
- 10) simulating airborne environment for command post crew training;
- 11) monitoring the operation of the system's combat tools.

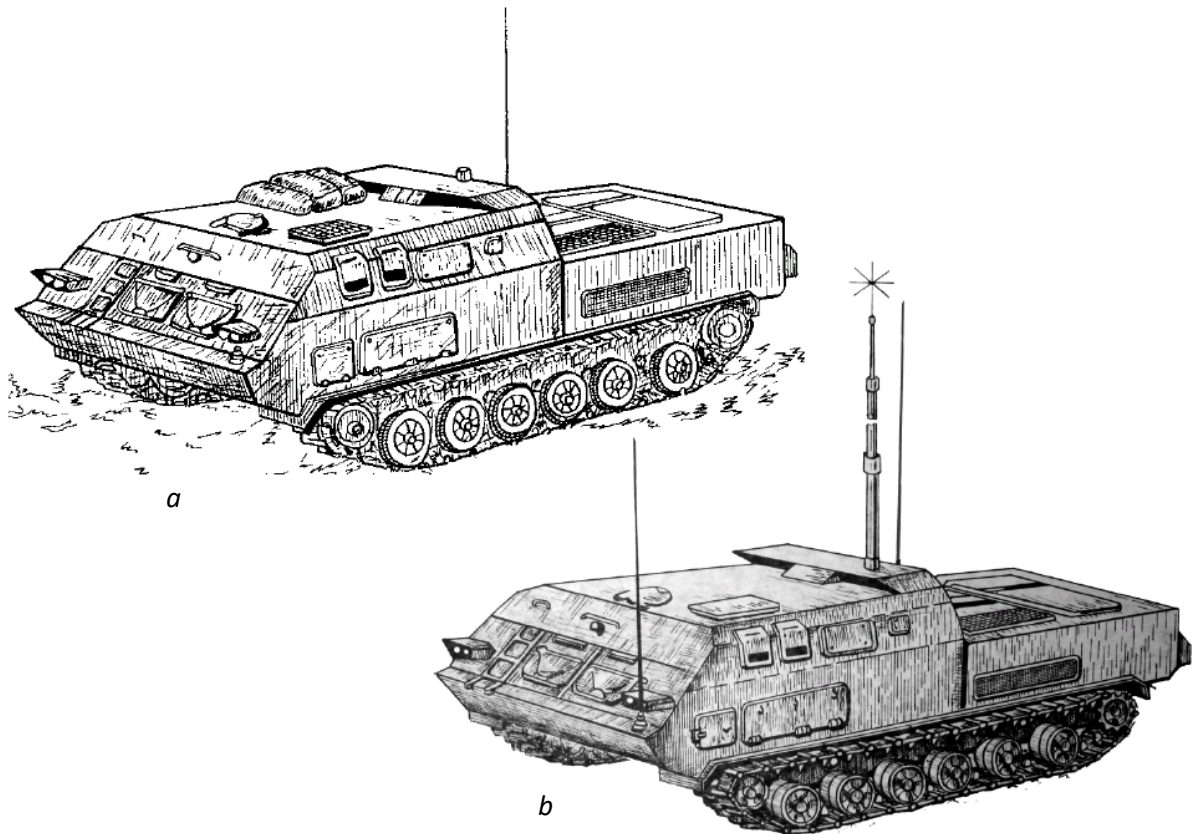


Figure 1.2. General view of command vehicle PBU 9S470M1: *a*) in standby position; *b*) in locked position.

PBU 9S470M1 combat crew is made up of 6 personnel: battalion commander, chief of command post/section commander, senior operator, operator, radio and telecoms engineer, driver.

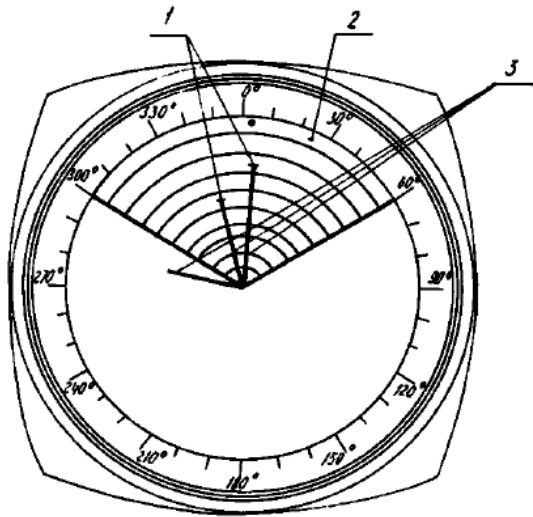


Figure 3.1. View of R-4SA radar screen when switching on the target locking marker to search mode:

- 1 – banned target mark;
- 2 – allowed target mark;
- 3 – locked target mark

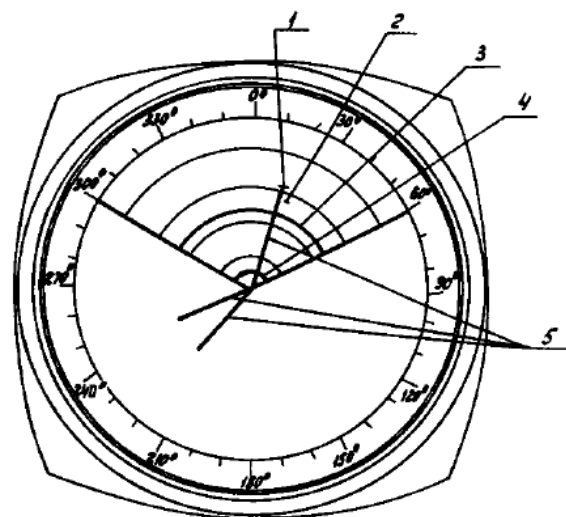


Figure 3.2. View of R-4SA radar screen when switching on the target locking marker in tracking mode:

- 1 – tracked target mark;
- 2 – warning point mark; 3 – long-distance point;
- 4 – short-distance point; 5 – locked target mark

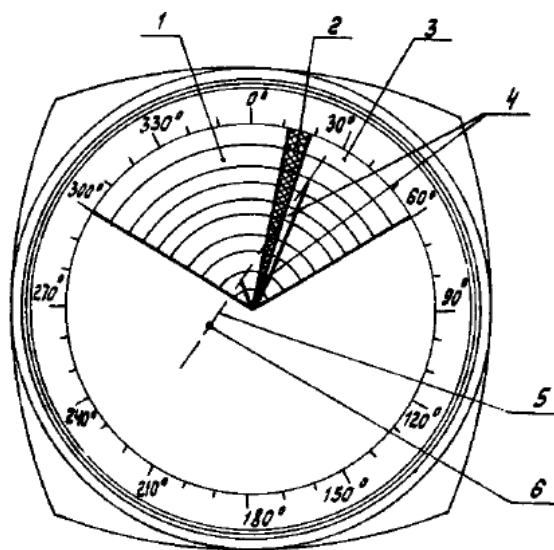


Figure 3.3. View of R-4SA radar screen in Triangulation mode:

- 1,3 – distance from target;
- 2 – sector located by noise radar;
- 4 – discreet target indication mark 75 and 15;
- 5 – conventional noise radar line for the first SPM;
- 6 – SPM interface position (conventional)out from the group.

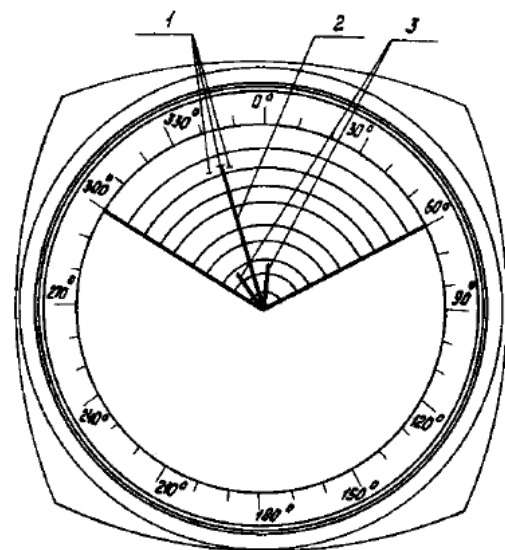


Figure 3.4. View of R-4SA radar screen when switching the TARGET mark to group target search mode:

- 1 – group target;
- 2 – target indication mark;
- 3 – mark of suspected target which stands

The R-4V *spotter* is intended for indicating the airborne environment, target recognition results (prior to locking) and target selection for autotracking. The screen shows the radar situation similar to the situation on the sectoral screen. The screen has a right-angled section (figures 3.5, 3.6)

The screen shows distance calibration marks depending on the distance set on the R-4SA unit and the sight mark guided according to the azimuth and distance (speed in quasi-continuous emission mode) by the R-51TsA joystick.

In the quasi-continuous emission mode, instead of calibration marks, the indicator screen shows division by time channels. The front panel of the R-4V unit has a board which shows the linear scan sequence according to the location angle, as well as buttons to start searching a single row according to the location angle – where the target signal has the maximum value.

The precise coordinates indicator R-4NA is intended for strobing the target according to distance in impulse mode and according to speed in quasi-continuous emission mode. There are two nets on the indicator screen in the form of horizontal lines: the upper line is the exact distance net, and the bottom line is the rough distance net. The lower net distance may be, respectively 100 or 50 km, depending on the distance set on the R-4SA unit.

The exact net displays the dark sight, while the rough net displays the target location (TL) strobe in chirp mode and the target indication strobe (figure 3.7).

The dark sight is linked to the TL strobe, with an enlarged scale of the exact net showing the same section of the rough net where the TL strobe is.

In quasi-continuous emission mode, the upper net shows the scan outlet of the quasi-continuous receiver and the guided heterodyne (GH) mark. The GH mark is moved with the R-51SA joystick and the R-51-SA steering wheel.

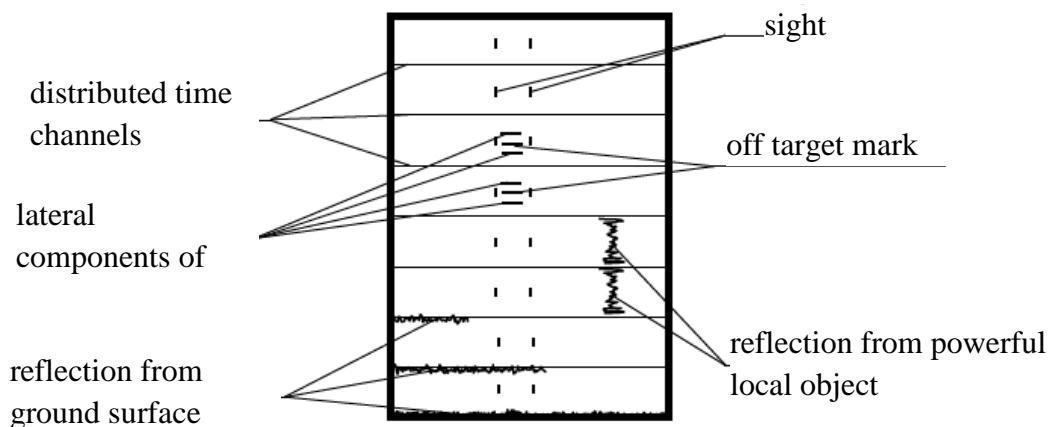
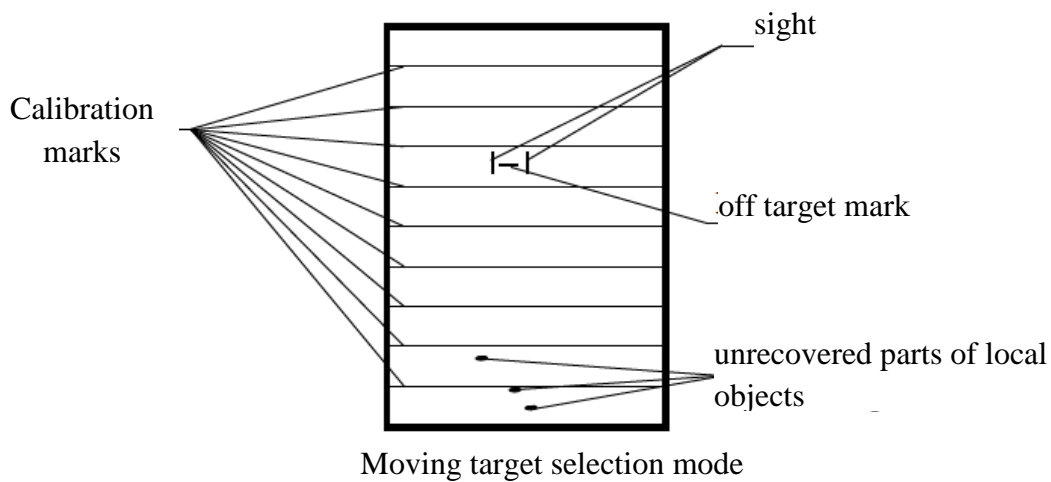
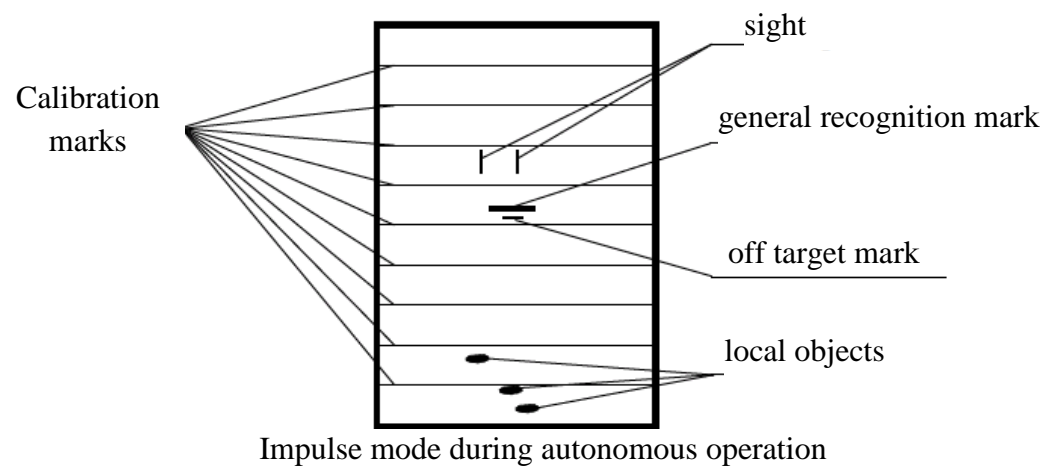


Figure 3.5 View of R-4V indicator screen in search mode

The bottom net may display: one of the eight scan channels, one of two the radar receiver outlets, one of two long-distance receiver outlets as well as the quasi-continuous emission impulse from the RPDP [unknown abbreviation]. The information displayed on the bottom net is selected using the switches on the front panel of the R-4HA unit.

A system of angular tracking ensures the locking and tracking of the detected target according to angle coordinates. In chirp mode, if there is a target mark in the target position strobe and a "Zone 10°" command, the antenna switches from the 10° x 6° search mode to guiding a package of impulses from the target to a designated digital computer. The calculation is performed after a "Zone 10°" command and impulses are received from the start and end of the package from the R-75 unit.

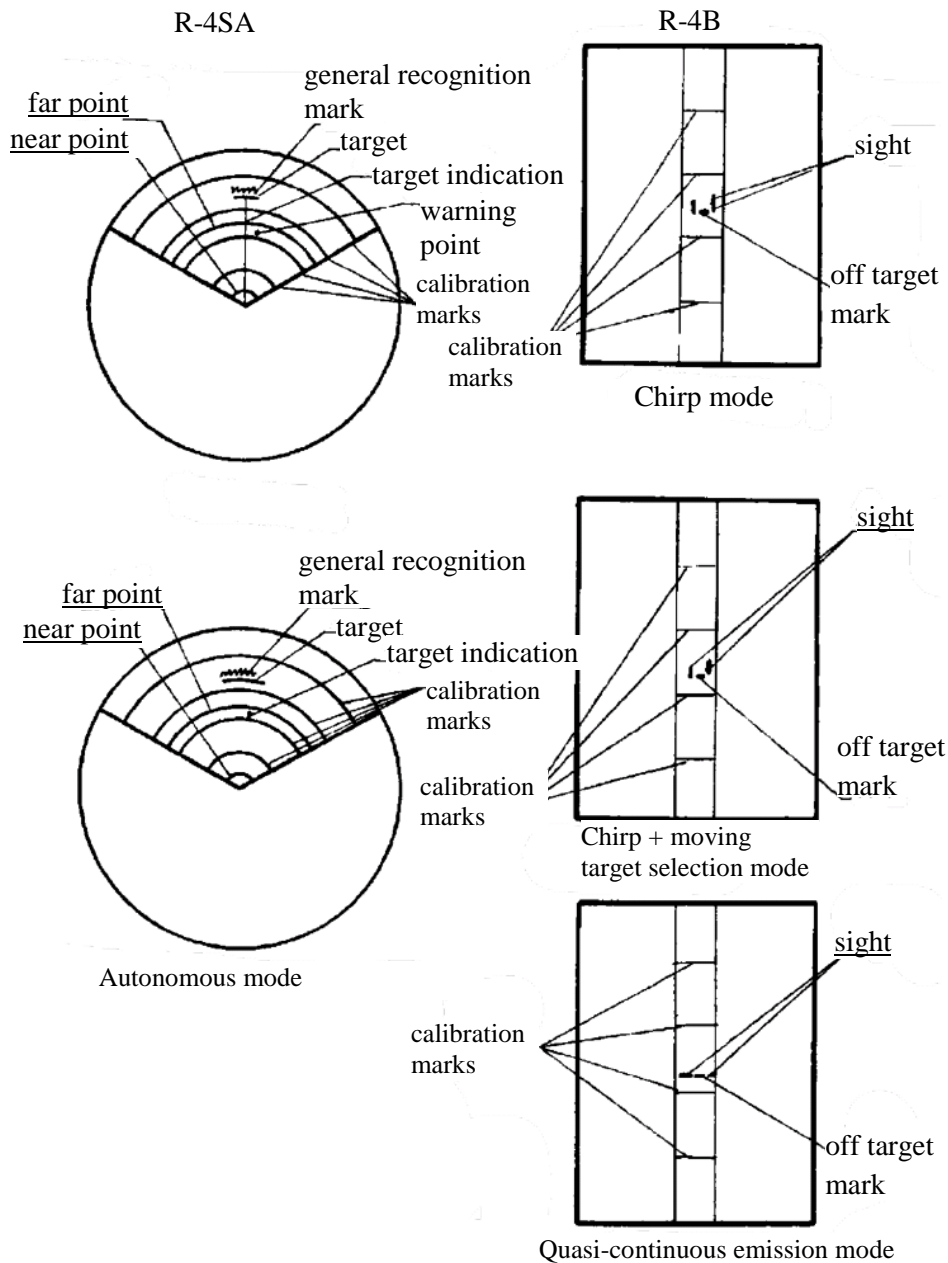


Figure 3.6 View of indicator screens during target locking and tracking

When in search mode, the R-75 target detection unit, accumulates a package signal, forms the target detection impulses and the start and end of package impulse. These impulses are received by the digital computer which, in the Zone 10° mode, scans the angle automation sensor for the mirror coordinates according to the location angle and azimuth, corresponding to the start and end of the package.

The computer calculates the package center according to the scanned coordinates and, after a "Calculate AZ-I" command, the computer uses the closed tracking system while processing the discrepancy signal, to guide the antenna mirror to the calculated target coordinates. A tracking is used to process the antenna position, which is locked onto the angle position sensor via the 9S471M1 digital computer.

The transition to autotracking takes place if the target shows in the ray, if it is strobed according to distance and there is an AZ-I command.

- U0.08.01.00 – response signal imitator;
- 2) transmitting device – U0.22.00.00-B comprising:
 - U0.02.04.00 – feeder device;
 - U0.02.01.00-A – setting generator
- 3) *the coding/decoding device* comprises the main and auxiliary equipment. The main equipment which supports combat operation includes the 6110-21 device, which is installed on the SPM TELAR.

Auxiliary equipment installed outside the SPM TELAR and used for the input and input monitoring of key software as well as to monitor the working condition of the coding/decoding device includes the 6110-40 unit and a special UMD notepad pack.

The radar detection system is a system of impulse radio communication which works by exchanging information between the interrogator and the responder.

To ensure recognition of detected targets, the ground interrogator communicates with the radar, that is, ensures the spatial combination of the radar and interrogator antenna radiation pattern lobes, as well as the synchronized emission of radar probe signals and interrogation signals during area scanning and target tracking.

The interrogation signal is formed ahead of the radar probe signal in order to record the time taken by the aircraft to process the interrogation signal and by the interrogator to process the response signal. This makes it possible for the radar screen to link the interrogator’s outgoing signal to the signal reflected from the target according to the distance.

4.2. PRINCIPLES OF IFF TARGET IDENTIFICATION

MODE I , RANGE VII OF THE GROUND IFF INTERROGATOR

Mode I, range VII is the general recognition mode resistant to spoofing (Figure 4.1), which ensures IFF target identification. This mode uses one interrogation signal which is a synchronized group of three impulses at frequency f_4 at time positions 0, 1, and 4 when interrogating an aircraft and positions 0, 1, and 3 when interrogating a ship. The lateral lobe suppression impulse is formed at position 5. It serves to prevent interrogation from responders along the lateral antenna radiation pattern lobes.

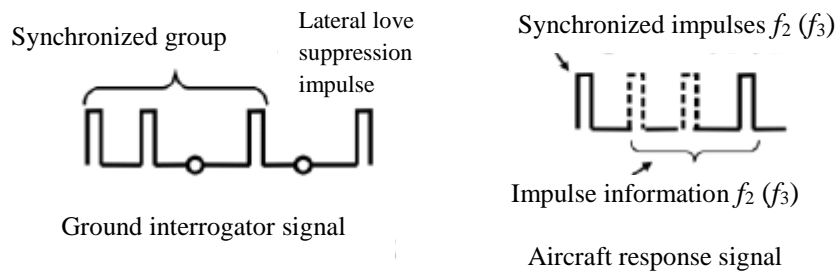


Figure 4.1. Interrogation and response signals in Mode I, range VII of the ground IFF interrogator

The Mode I response signal is coded with the frequency-time code. It is two impulses on either an f_2 or an f_3 frequency.

The first impulse is a superimpulse (SI) formed at the 0 position, while the other, information impulse – at position 1, 2, or 3. When SI is emitted at frequency f_2 (codes 1–3), the information impulse is emitted at frequency f_3 .

Annex 498

Karpenko, A.V. 9K317M BUK-M3 Surface-to-Air Missile System / NEVSKY BASTION Military Technology Almanac

This document has been translated from its original language into English, an official language of the Court, pursuant to Rules of the Court, Article 51.

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NEVSKIY BASTION, MILITARY-TECHNICAL ANTHOLOGY, ARMAMENTS, MILITARY TECHNOLOGY, MILITARY-TECHNICAL ANTHOLOGY, CURRENT STATE, HISTORY OF DEVELOPMENT OF THE MIC, BASTION VTS, NEVSKIY BASTION, JOURNAL, ANTHOLOGY, VPK, ARMIES, SHOWS, SALONS, MILITARY-TECHNICAL, NEWS, LATEST NEWS, MILITARY NEWS, ...
[...]

ANTI-AIRCRAFT MISSILE SYSTEM 9K317M BUK-M3
ANTI-AIRCRAFT MISSILE SYSTEM 9K317M BUK-M3



ANTI-AIRCRAFT MISSILE SYSTEM 9K317M BUK-M3



Work to create the next-generation ZRK [anti-aircraft missile system] Buk-M3 has been performed by the V. V. Tikhomirov Scientific Research Institute of Instrument Design. ZRK Buk-M3 is the fourth generation of mobile medium-range systems. Having preserved the overall construction of ZRK Buk-M2, the latest-generation Buk-M3 system fundamentally exceeds it in terms of tactical and technical specifications.

The military actions in Yugoslavia (1999) and Iraq (2003) influenced to a significant degree the creation of Air Defense's new anti-aircraft missile system. They showed that successful use of an anti-aircraft missile system requires the extreme minimization of the operating time during active operation of the radar equipment that is part of the system. The resolution of this problem by experts at the Scientific Research Institute of Instrument Design, which was vital for the Air Defense Troops of the Russian Ground Forces, is seen in the use of an active self-guiding radar head, which gives the anti-aircraft missile system the ability to operate using the "fire-and-forget" principle. This makes it possible to significantly increase the system's military durability (20 seconds after changing the position of the anti-aircraft missile system, combat use can begin again).

The other most important improvement must be the introduction of an active electronically scanned array (AFAR), which was implemented in the previous modification of the Buk family of anti-aircraft missile systems: the ZRK Buk M2.



By the time work began on ZRK Buk-M3, the Buk-M2 modification was considered one of the most effective members of its class. Its development was completed in 1988, but it was only brought into mass production 15 years later. The ZRK Buk-M3 allows for simultaneous processing of information about the air situation of a large number of targets based on data from its own target acquisition facilities that are part of the composition of the anti-aircraft missile system, and based on data from higher command posts (VKP) that is passed to the anti-aircraft missile system surveillance facilities. The anti-aircraft missile system's full complement allows for simultaneously firing at up to 36 air targets flying from any directions. Main advantages relative to the third-generation anti-aircraft missile system:

Compared with the ZRK Buk-M2 the following increased by a factor of 1.5:

- on-board ammunition capacity,
- strike zone,
- number of targets simultaneously fired at.

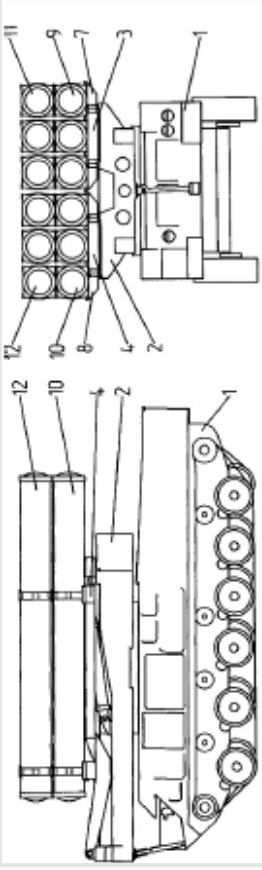
The system's noise-tolerance and durability were increased, as well as its operational specifications, including thanks to the use of anti-aircraft guided missile containers.

At the present time, the ZRK Buk-M3 has no counterparts in the world among anti-aircraft missile systems in its class.



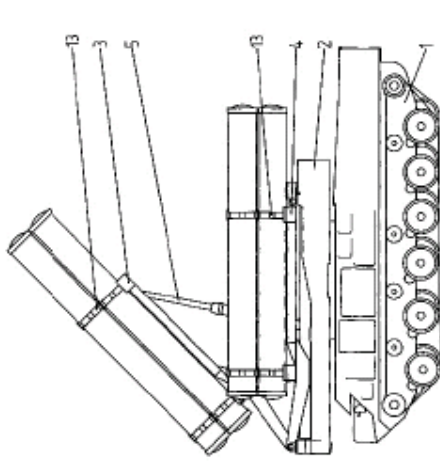
Scientific Production Association Start, which also has experience working on the Buk-M2, was brought in to work on creating the ZRK Buk-M3 self-propelled turrets (SOU). Still in the design phase, instead of the existing television viewfinder capable of effectively working only in daylight hours and in good weather, the modernized system is expected to introduce a thermal imager for the anti-aircraft missile system to be used in any weather and around the clock.

The thermal imager's shortcoming is a narrow field of view, which makes it difficult to search for air targets. Heat-based direction-finders, which have significant coverage along the horizon and with respect to elevation (roughly 30-40 degrees), do not have this shortcoming. However, heat-based direction finders are not sufficiently effective for collision courses. Accordingly, it seems reasonable to integrate the thermal imaging and heat-based direction-finding hardware into a unified system. The improved anti-aircraft missile system, which has significantly increased range, also has a new missile placed in a transport/launch container. This significantly improves the operational specifications of the anti-aircraft guided missiles. The more compact missile, which possesses improved specifications, will make it possible to raise by a factor of 1.5 the ammunition load of the combat machines, bringing it to six units for the self-propelled turret and to 12 for the transport/launch platform. During the design work, a minor update of the crawler chassis was also expected, which was necessitated by the increase in the total weight of the system's warheads.



In due course, experts at the Scientific Production Association Start registered Patent RU 2262647 for the self-propelled launch platform. In an example of a specific embodiment, the self-propelled launch platform consists of a self-propelled crawler chassis (1), on which a rotatable platform (2) is mounted. The launch platform includes powered booms (3, 4) equipped with hydraulic actuators for vertical aiming in the form of hydraulic cylinders (5, 6). On the booms, there are latch pins (7, 8) to attach the missile containers (9, 10) of the bottom deck. The top deck's containers (11, 12) are installed on the containers of the lower deck and attached by latch pins (13).

The launch platform is equipped as follows. The first six containers with missiles are installed on the booms (3, 4) (three for each boom) and attached by latch pins (7, 8). The second six containers are installed directly on the containers of the lower deck, as shown in Fig. 2, and attached by pins (13). Then the containers are connected to the control lines of the automated launch equipment.



Upon receiving a warning about an expected mass attack from the air, the launch platform is moved out to the firing line. In the combat position, the hydraulic cylinder (5) is initially connected to the launch platform's hydraulically driven pump. As the rod (5) advances, the boom (3) with the containers (11) is set at the required elevation. Then the hydraulic pump is connected to the hydraulic cylinder (6) and the boom (4) with the containers (12) is set. Because the hydraulic pump works to move a single tilting part with half the missiles, the load on the hydraulic system is cut in half. After the launch of all twelve missiles, the launch platform is moved to a position for maintenance.

Here the empty containers are removed, and containers with missiles as described above are installed in their place.

The proposed platform is mentioned in Patent RU 2262647. It has several advantages as compared with well-known counterparts. When using the units and assemblies that have been unified with the Buk launch platform, the proposed platform replaces three Buk platforms or four Kub launch platforms in terms of fire power.

According to the indicated plan, OAO Scientific Production Association Start has developed the corresponding design documentation and started preparations to manufacture a prototype of the launch platform.

"We plan to receive the first Buk M3 in 2009," said Colonel General Nikolay Frolov, head of the Air Defense Troops of the Ground Forces of the Russian Federation, in September 2007. "This will be an entirely new system, created using new components with entirely different capabilities," noted Frolov.



"The planned rearmament from Buk-M1 to Buk-M2 is currently underway. In the future, starting in 2016, we expect to receive the Buk-M3. The latest Buk-M3 anti-aircraft missile system will start to enter the field in 2016," said Lieutenant General Aleksandr Leonov, head of the Air Defense Troops of the Ground Forces, in December 2013. To prepare for the start of the mass production of the ZRK Buk-M3, the production facilities of the M.I. Kalinin Machine Building Plant (MZIK) were modernized.

The Ministry of Defense has concluded a contract with the Ulyanov Mechanical Plant. Preparations for production have begun. "I think that the first serially produced examples will begin to enter the field as early as the end of 2015," said General Director of the Scientific Research Institute of Instrument Design Yuriy Belyi in March 2014.

Annex 499

Ryabov, K. Surface-to-Air Missile Systems of the Buk Family / Military Review online

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The ZRK Buk-M1 was the first system in the family to be offered to foreign customers. The system was supplied to foreign armies under the name Gang. For example, in 1997, several systems were sent to Finland as part of a repayment of government debt.

ZRK 9K317 Buk-M2

Development of an updated anti-aircraft missile system of the Buk family, with a new 9M317 missile that received the designation 9K317 Buk-M2, was completed as early as the end of the eighties. The distance and altitude of target strikes were expected to be significantly increased thanks to the new guided weaponry. Additionally, the system specifications were supposed to show the use of a range of new equipment installed in various subsections of the system.

Unfortunately, the economic circumstances in the country did not allow the adoption of the new system at the end of the eighties or beginning of the nineties. The question of updating the hardware of Air Defense units was ultimately settled thanks to the "transitional" Buk-M1-2 system. Development of the 9K317 system continued simultaneously. Work on the project for the updated Buk-M2 and its export version, the Buk-M2E, continued until the middle of the two thousands.



Buk-M2 SOU [self-propelled turret]

The main innovation of the Buk-M2 project was the new 9M317 guided missile. The new ZUR [anti-aircraft guided missile] differed from the 9M38 by shorter-length wings, an updated body design, and a starting weight of roughly 720 kg. Thanks to the design change and the use of a new engine, the maximum firing range was successfully increased to 45 km. The maximum flight altitude of the target being attacked was raised to 25 km. To expand the military capabilities of the unit, the missile gained the ability to turn off the proximity fuse and detonate the warhead based on a contact's command.

Such a mode is proposed for using the missile against ground and water targets.

The 9K317 system received an updated 9A317 SOU [self-propelled turret] based on the GM-569 crawler chassis. The overall architecture of the turret remained as before, but the new subsection is built with modern components and new hardware. As before, the self-propelled turret can independently find and track the target, launch a 9M317 missile, and track its trajectory, using a radio command system to make corrections if necessary.

The SOU 9A317 is equipped with a radar station with a phased-array antenna for tracking and illuminating. The station can track targets in a sector 90° wide horizontally and with an elevation of 0° to 70° . It can acquire targets at distances up to 20 km. In tracking mode, the target can be located within a sector 130° wide horizontally and with an elevation of -5° to $+85^\circ$. The station simultaneously locates up to 10 targets and can support a simultaneous attack on four.

To improve the system specifications and ensure function in difficult conditions, the self-propelled turret has an optical-electronic system with day and night channels.



Buk-M2 launching and loading equipment

The Buk-M2 system may be built with two types of launching/loading systems. A self-propelled subsection based on the GM-577 chassis was developed along with a subsection towable with a tractor truck. The overall architecture remained as before: four missiles are arranged in the launcher and can be launched or transferred to a self-propelled turret. Another four are transported on the transport supports.

A new 9S510 command post based on the GM-579 chassis or on a towable semitrailer was added to the modernized system. The command post's automated equipment can receive information from surveillance devices and track up to 60 trajectories simultaneously. It is possible to issue targeting instructions for 16-36 targets. The response time is no more than 2 seconds.

The main target detection tool in the ZRK Buk-M2 is the SOTs [target acquisition system] 9S18M1-3, which represents the further development of the family of systems. The new radar station is equipped with a phased-array antenna with electronic scanning and is capable of detecting air targets at distances of up to 160 km. There are operating modes that can detect targets when the opponent uses active and passive interference.

A so-called target illumination and missile guidance system was expected to be added to the range of self-propelled/towable resources in the Buk-M2 system. The new 9S36 subsection is a crawler chassis or a towable semitrailer with an antenna post on an extendable mast. This equipment makes it possible to raise the phased-array antenna to a height of 22 m and thereby improve the specifications of the radar station. The greater relative height allows for detection of targets at distances of up to 120 km. The 9S36 station's tracking and guidance specifications correspond to the radar stations of self-propelled turrets. It can be used to track 10 targets and simultaneously fire at 4.

All the innovations and changes to the composition of the system made it possible to significantly improve its specifications. The maximum target interception distance is stated at 50 km, at a maximum altitude of 25 km. The greatest distance is achieved when attacking non-maneuvering airplanes. Tactical ballistic missiles can be intercepted at distances of up to 20 km and heights of up to 16 km. Additionally it is possible to destroy helicopters and winged and anti-radar missiles. If necessary, the anti-aircraft missile system's calculations can attack water or radio-contrasting ground targets.



9S36 Buk-M2 radar system for target illumination and missile guidance. The antenna is raised to its operating position.

The first version of the 9K317 project was developed as early as the end of the eighties, but the difficult economic situation did not allow the adoption of the new anti-aircraft missile system. Use of this system by the military began only in 2008. By then, the anti-aircraft missile system had undergone several updates that made it possible to further improve its specifications.

ZRK Buk-M1-2

Numerous economic and political problems prevented the adoption and mass production of the new ZRK 9K317. Therefore, in 1992 the decision was made to develop a simplified "transitional" variant of the system, which would use several elements of the Buk-2, but would be simpler and less expensive. This variant of the anti-aircraft missile system received the designations Buk-M1-2 and Ural.

The modernized ZRK Ural includes several updated subsections that represent the further development of the old types of machines. Launching missiles and illuminating targets was performed by the SOU 9A310M1-2, operating jointly with the 9A38M1 launching/loading subsection. The SOTs remained as before- the Buk-M1-2 system had to use the 9S18M1 station. The system's auxiliary facilities did not undergo serious changes.

To increase the secrecy of the work, and thus its durability, and to expand its circle of solvable challenges, the self-propelled turret gained the ability to perform passive direction-finding on a target. This involved the use of a television-optical viewfinder and a laser range-finder. Such equipment was to be used during an attack of ground or [...]

Annex 500

Mikhail Khodarenok / "Password" Is Almost Unheard

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“Parol” is almost inaudible / Armaments / Nezavisimaya Gazeta

Tuesday, June 5, 2018 12:46 am

Nezavisimoye Voennoye Obozrenie [Independent Military Review]

[...]

Newspaper Armaments Internet version

12/15/2000

‘Parol’ [‘Password’] is almost inaudible

By Mikhail Khodarenok

Tags: Parol, Kremny [Silicon], Aeroflot, radar

Only two countries in the world have state radar identification systems: Russia (in the unified “Parol” [“Password”] system with the participating states of the CIS), and the United States (in the Mk XII unified system with NATO countries). Having such a system and keeping it operable is, at a minimum, a task for the government. In essence,

http://nvo.ng.ru/armament/2000-12-15/6_parol.html[6/5/2018 12:47:19 AM]

having (on a par with the U.S.) a unique unified state radar system for identifying above-water and land-based objects attests to our state’s prestige.

It is hardly necessary to explain the importance of the existence in the country of a reliable state radar system for identifying airborne, above-water and ground targets. Deficiencies and an underestimation of such a system are very costly in a combat situation. For example, in the Middle East in October 1973, the losses of national air forces from each country’s own anti-aircraft defenses amounted to: Egypt, up to 46%; Syria, up to 14%; Libya and Iraq, up to 30%. During the 1991 Gulf War, the cause of 15% of all personnel losses by the allies in the anti-Iraq coalition was friendly fire on troops (forces). On April 14, 1994, in a no-fly zone for Iraqi planes, two American helicopters were shot down by America’s own fighters. The pilots of two F-15s misidentified the pair of Black Hawk army helicopters as Iraqi Mi-24s. The incident killed 26 British, French and Turkish service personnel.

HOW IT ALL BEGAN

The first state radar identification system to go into service in the territory of the USSR and its allies was called “Kremny-2(2M)” [“Silicon”]. In addition to many positive characteristics it also had two major flaws. The main one was unsatisfactory spoofing resistance. Kremny’s identification codes were determined in a few seconds (in Kremny-2 they were 12 code filters). Through brute-force cracking of switches or tumblers (that is what the “codes” looked like), one could find the necessary combination and imitate the identification signal “I am ours.” Moreover, the system operated in the decimeter range prohibited by the ICAO and held back the development of television at these frequencies, which was provided for by international agreements. In 1995 a decision was adopted to terminate the combat use of the Kremny-2(2M) identification system on the territory of the Russian Federation, since it reduced the effectiveness of the use of the new Parol unified state radar identification system. In addition to this, however, it was decided to continue the use of the system’s land-based and onboard hardware (within the limits of the operational resources installed for them) in order to perform the tasks of monitoring compliance with the procedure of the use of airspace by aircraft.

Until that time, beginning in the 1970s, two radar identification systems, Kremny-2 and Parol, were operating concurrently. A major personal contribution to the formation and development of the new Parol state radar identification system was made by Air Force Marshal Yevgeny Savitsky. At the beginning of the formation of Parol, it was hard to imagine that in the near future land-based radar transponders would be installed in the combat vehicles of battalion commanders and they would respond to the relevant interrogation with a state radar identification signal, and most importantly, in spoofing-resistant mode.

However, the retrofitting of all airborne, above-water and land-based objects with the new Parol state radar identification system never was completed. While virtually all military objects were retrofitted, a sizable portion of civilian airborne objects were not affected.

AEROFLOT AND OTHERS

In 1997 the Statute on Equipping Civilian Aircraft with Onboard Transponders of the Parol Identification System entered into force, having been approved by the director of the Russian Federal Aviation Service, with sign-offs from the head of the Department of the Aerospace Industry and Shipbuilding of the Russian Ministry of the Economy and the chairman of the Aviation Registry of the Interstate Aviation Committee.

Civilian aircraft were to be equipped with onboard transponders in order to speed up decision-making regarding the national affiliation of objects by authorities monitoring the use of airspace, and to rule out a mistaken attack on our aircraft by our own weapons systems, especially in border areas and in zones of local military conflicts.

In addition, our experts believed, the equipping of civilian aircraft with onboard Parol system transponders would make it possible, during the period of a threat, to rapidly bring to the necessary degree of readiness the aircraft that would be deployed under a mobilization plan, as well as to identify aircraft issuing an SOS and thereby

provide them with prompt assistance.

Aeroflot OJSC, as well as other operators and designers of Russia’s civilian aircraft, regardless of form of ownership, were supposed to ensure the retrofitting of aircraft in operation with Parol system transponders for identification of the national affiliation of objects in the territory of the Russian Federation. This was prescribed by the Statute on Equipping Civilian Aircraft with Transponders of the Parol Identification System, which was formulated and approved in 1997 by the director of the Russian Federal Aviation Service and the chief of the General Staff of the RF Armed Forces.

The statute was intended to require all designers and operators of aircraft, regardless of form of ownership, to ensure the retrofitting of aircraft in operation, in serial production and in development, with Parol system transponders for identification of the national affiliation of objects in the territory of the Russian Federation. It also defines the requirements for aircraft in regard to equipping them with state identification hardware. In accordance with these requirements, all civilian aircraft intended for operation in Russian airspace (including those in serial production, in operation and deployed under a mobilization plan, as well as those being newly designed in Russia or other countries that are parties to the Agreement on Civil Aviation and the Use of Airspace of 12/27/1991 and the Agreement on Ensuring the Radar Identification of Airborne, Above-Water and Land-Based Objects Equipped with Parol System Transponders of 6/26/1992), regardless of form of ownership, must be equipped with transponders for the aforementioned system.

For civilian aircraft designed in countries that are not parties to the above agreements, the requirements for equipping them with Parol system transponders must be set by joint decisions of the Ministry of Defense, the Department of the Aerospace Industry and Shipbuilding of the Russian Ministry of the Economy and the RF Federal Aviation Service. Pursuant to the Federal Rules for the use of RF Airspace, flights by aircraft without radar identification equipment are prohibited, except for aircraft on which the installation of this equipment was not previously prescribed.

There are about 7,500 aircraft in civil aviation, including 1,800 on main routes, which according to a RF government resolution must be equipped with the Parol system. However, only 15% of them have this system, which significantly hampers the monitoring of the use of airspace. In addition, foreign-made aircraft that are operated by domestic airlines on a leased basis do not have identification equipment either.

Aeroflot OJSC is proposing that transponders of the state identification system be removed altogether from aircraft. This is already a dangerous precedent and will make it more difficult to perform the task facing the RF Armed Forces of monitoring the use of airspace and crossings of Russia’s state border.

It should be mentioned that there is a government resolution that obligates aircraft operators, regardless of form of ownership, to ensure the equipping of aircraft in operation and those newly manufactured with equipment for the Parol state identification system according to the schedule set by this resolution.

Finally, strict fulfillment by the relevant ministries, agencies, and organizations of the requirements of the RF government resolution and the other regulatory documents cited above will make it possible to perform the task of reliably identifying the national affiliation of civilian airborne objects with the use of modern equipment. In addition, the possibility of an attack on our objects with our own weapons systems will be reduced, and decision-making regarding the national affiliation of objects by authorities monitoring the airspace will become faster.

PAROL AND OUR NEIGHBORS

The breakup of the Soviet Union had little effect on the operation of the unified state radar identification system. Except for Moldova and Azerbaijan and, in part, Georgia, the remaining countries concluded the Agreement on Ensuring the Radar Identification of Airborne, Above-Water, and Land-Based Objects Equipped with Parol System

Transponders of 6/26/1992 and the Protocol to that Agreement of 6/4/1999 (Minsk).

In the Agreement, the governments of the participating states (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Uzbekistan, and Ukraine), guided by a desire to ensure reliable identification of their objects in order to exclude an unintentional attack on them by their own weapons systems, agreed to retain the Parol radar system as a unified state identification system. In addition, the parties undertook, within five years from the date of its entry into force (i.e. by 2004), to install Parol system equipment on the aircraft and marine vessels of the ministries, agencies and organizations belonging to those states.

Therefore, the necessary regulatory framework on the matter of equipping civilian aircraft with Parol identification system transponders has been prepared not only for the Russian Federation but also at an intergovernmental level.

WHAT PAROL RESTS ON

Russia has no permanent authorities that perform any administrative or guiding role in regard to the state radar identification system. Even though it seemed that Parol is a state system, it rests, for the most part, on the decency of the participants, which was established, incidentally, back in Soviet times. The country's leadership, apparently, is not fully aware that Parol continues to hold out on enthusiasm alone.

There are fewer and fewer capabilities for this, as well as spare parts for Parol. Each unit, in particular, of secure identification equipment (and that is virtually what all of Parol rests on) has its own service life, an established operating life. Without the appropriate technical maintenance, periodic repairs and replenishment of expendables, the system will simply begin to crumble. If one follows one's own rules and principles, then without an operable state identification system an airplane cannot be sent into the air, nor a ship to sea. Therefore, the absence or inoperability of a state identification system can lead to paralysis in the air and at sea.

Incidentally, not a single NATO plane in the recent events in Yugoslavia switched off its identification system or RBS system for even a minute, because in the developed Western countries the life even of an individual pilot is valued extremely highly. Moreover, the control of such a large number of aircraft was conducted both from the air (AWACS planes) and from the ground (traffic control authorities). Without an impeccably functioning state identification system, the management of such an amount of aircraft is highly problematic.

PROGRAMMED CHAOS

One of the promising areas for solving the problem of equipping civilian aircraft with state identification transponders is the use of dual-purpose combined electronic hardware as part of onboard equipment. Specifically, a 4280 MSGA [abbreviation unknown] transponder is being designed for civilian aircraft; it is supposed to support operation in the Parol identification system, the Russian secondary-radar traffic-control system and the international ATCRBS traffic-control system with Mode S (discrete-address identification mode). The approximate date of completion of the design (beginning of serial production) is early 2004.

The design of airplane transponders for the state identification system in the U.S. and NATO countries (Mk XII) is moving in the same direction. In peacetime their civilian planes use only the RBS secondary transponder, and during special periods that onboard equipment operates in spoofing-resistant mode, which ensures the operation of the state identification system.

Proposals are currently being formulated for the equipping of aircraft with a modernized Parol system (“Strazh” [“Sentinel”]) to ensure reliable monitoring of Russia's airspace. There is, however, not much optimism about doing this work.

In essence, with this kind of funding one can say good-bye to yet another feature of a great power, and the evolving situation, in terms of its results and characteristics, is very close to this. Unless the attitude to the state radar identification system changes, it will not be possible not only to switch to the new Strazh system, but even to

“Parol” is almost inaudible / Armaments / Nezavisimaya Gazeta

modernize Parol and keep it operational. A return to Kremny-2 is quite likely. But Kremny will cease to exist in the foreseeable future, since it is based on old resources; industry has long since discontinued production of spare parts for it.

These are the realities. But without a dependable radar identification system in the air, chaos will set in – no exaggeration. One need only imagine for a second the confusion that could arise in any military conflict when there are hundreds and thousands of objects in the air, at sea and on land, and it will be necessary in a few seconds to figure out where ours are and where the others are – and make a sound decision to use weapons systems.

[...]

Annex 501

Skorik, A.B. Design, Maintenance, and Combat Use of Launchers of the Buk-M1 Surface-to-Air Missile System

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MINISTRY OF DEFENSE OF UKRAINE
KHARKIV AIR FORCE UNIVERSITY

G.M. Zubrytsky, A.S. Kyrylyuk, V.V. Lukyanchuk, P.Y. Khyl

**CONSTRUCTION, TECHNICAL OPERATION
AND COMBAT USE
OF THE BUK-M1 SURFACE TO AIR MISSILE SYSTEM
COMMAND POST**

Part II

THE 9S470M1 COMMAND POST VEHICLE

Study Guide

Edited by P.Y. Khyl

Kharkiv
2005

UDK 623.618.2

BBK 641.4.992

Kh45

Reviewers: Prof I.O. Kyrychenko, Honored Scientist, Doctor of Military Science
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Kh 45

Construction, technical operation and combat use of the BUK-M1 surface to air missile system command post. Part II. The 9S470M1 command post vehicle: Study guide / G.M. Zubrytsky, A.S. Kyrylyuk, V.V. Lukyanchuk, P.Y. Khyh // Kharkiv Air Force University. – Kharkiv, 2005. – 75 pages.

The study guide is intended for those studying the command post tools of the BUK-M1 surface to air missile system and for those at university studying medium-range surface-to-air missile systems.

The guide describes the construction and functional principles of the 9S470M1 command post vehicle as well as the fundamentals of its operation and combat use.

The content of the guide corresponds to modules II and III of the subject syllabus “The construction, technical operation and combat use of information technology and target guidance tools in the BUK-M1 surface to air missile system.

During the study of the book it is advisable to use the album of figures and diagrams issued under the same title.

Illustrations: 68 (issued in a separate album), tables: 3, bibliography: 9 titles.

Approved for publication by Chair No 303, Kharkiv Air Force University.
Transcript No 8 of 9 December 2004.

GENERAL CHARACTERISTICS OF THE 9S470M1 COMMAND POST VEHICLE

1.1. CP purpose and tasks

The 9S470M1 command post vehicle is a component of the surface-to-air missile battalion command post armed with the 9K37M1 BUK-M1 surface to air missile system and intended to provide automated control over its combat operations both during autonomous operation and as part of a surface-to-air missile battalion.

The CP equipment is located in the cabin of the self-propelled tracked armoured vehicle GM-579A and provides automation of the following tasks:

- putting the battalion's units into different stages of readiness to perform assigned tasks;

- receiving, processing and displaying information about the airborne environment and combat management commands received from the brigade command post equipped with the Polyana-D4 automated system, or from the air-defense division command post (standard command staff vehicles MP22 and SM MP25);

- receiving, processing and displaying information about the airborne environment received from the 9S18M1 acquisition radar and the SPM 9A310M1 launchers;

- receiving and displaying data on missile presence on board SPM launchers and the 9A39M1 launcher-loaders;

- receiving and displaying data on the location and condition of surface-to-air missile system tools;

- control over SPM responsibility sectors according to azimuths and location angles;

- target allocation and the formation and output of target guidance to SPM launchers;

- control over fire assignments;

- control over combat tool operational modes in the surface to air missile system and SPM emission in the presence of active enemy interference and anti-radar missiles;

- organizing the system's operation under special operational conditions (when an SPM launcher is not fully operational, during the launch of missiles with "foe" illumination, when an SPM is operating as a launcher-loader);

- reporting combat readiness and combat operations to command post;

- geolocation preparations for the battalion's fire control;

- documenting combat processes during enemy air attack;

- simulating airborne environment for command post crew training;

- monitoring the operation of CP combat tools.

1.2. CP composition and location. Combat crew.

The following equipment can be identified as part of the CP vehicle according to its functional purpose (Figure 1.1).

1. *Data processing and exchange tools* – a digital computer system including:
digital computing unit (two Argon-15A computers);
data input-output device (BDM1-01 cabinet);
interface between the data input-output device and the automated workstation controls (BD-2 unit).

The digital computer system is the main automation tool for the processing and displaying of the airborne environment and the condition of the surface-to-air missile battalion's fire tools, as well as for the formation and implementation of target allocation recommendations, the management of the SAM battalion's combat operations and the provision of guidance information exchange with external and internal system users.

2. *Information display and management tools*: four workstations - 1DM, 2DM and two 3DM. Each automated workstation (AW) contains a D-4T1 display unit, management controls, coordinate scanning and communication controls and the BD-5 command input-output units. In addition, the SAM battalion commander AW includes a D-12-1 digital dashboard displaying: missile presence on each SPM launcher and PZU launcher-loader, the illumination transmitter letters set and installed on the SPM, while the chief of command post vehicle AW includes the D-2-1 control for initial data input into the EOM long-term memory device with the possibility of data replacement.

The information display and management tools are intended for the visual displaying of information on the airborne environment, the location, conditions and combat operations of the SAM battalion fire tools, EOM recommendations on target allocation to SPM launchers and the commands and instructions received from the higher-level automated command post.

3. *The operational command communication and data transmission tools* are intended for exchanging operational and tactical information with the SAM brigade CP and with the battalion's units, conducting conversations with CP crew, exchanging bilateral telecode information with the brigade CP and the SPM launcher and receiving telecode information from the fire control radar.

Communication and data transmission tools include:

AI-011 data reception and transmission equipment and the mobile communication center radio station – for bilateral telecode information exchange with the SAM brigade CP;

AI-011 reception equipment for airborne environment data incoming from the fire control radar and the R-123MT (R-111) radio station;

the 9S624 telecode equipment – for the bilateral exchange of telecode information with the SPM launcher;

the 9S623 system for speech communication between the CP vehicle crew, the fire control radar and the SPM launcher – to ensure reception and transmission of verbal information by the two R-123MT radio stations, the reception and transmission of individual and circulated coded signals and the ALARM signal;

the 9S726 internal telephone communication system and switchboard – to support individual conversations between CP crew and to control the speech communication equipment during verbal information exchanges via radio and cable between the crew of the

SPM fire control radar and the SPM launcher. In addition, the internal communication system and switchboard records verbal information using the on-board recorders MS-61M and the AM3-92RK audio recording equipment;

- the FL-92V antenna needle device;
- cable communication lines.

4. *Navigation equipment for geolocation and orientation* comprising TNA-4-1 tank navigation equipment, the VOP-3-1 panoramic optical sight and the PAB-2M aiming circle.

The TNA-4-1 is intended for continuous calculation and display of current CP coordinates on the topographic map to 1:50 000 or 1:100 000 scale during transit, for the determination of the self-propelled vehicle's longitudinal axis direction angle and the destination point direction angle, for calculating the right-angled components of the CP parallax relative to the set starting (reference) point – the starting point in the battalion's unified coordinate system.

The VOP-3-1 and the PAB-2M are used for determining the self-propelled vehicle's longitudinal axis direction angle and inputting it into the TNA-4-1 equipment before transit.

5. *The documentation equipment* is intended for the recording and playback of information about the airborne environment and the condition of the SAM battalion's combat tools, the operational command information in the guidance grids, the registration of tracked target information on rolled paper, the coordinates of the SPM fire control radar and launcher, the SPM launcher's technical condition, missile presence on the SPM launcher and the launcher-loader, target reallocation results and the SPM launcher's fire assignments in real time.

The equipment comprises:

- audio recording equipment AM3-92RK including two audio recording and playback devices - the 74A-100 units - and a remote control – the 74A-200 unit;

- two MS-61M flight recorders;

- the P-115P telegraphic letter printing device (RTA-7MK rolled letter-printing automated start-stop electronic telegraphy device)

6. *The simulation equipment* is intended for learning, practicing and improving main combat operations by CP crew. It supports CP crew training by simulating the airborne environment and the SPM launcher's combat operations.

To support CP crew learning and training, the mathematical support digital computer provides:

- electronic simulation of airborne environment data received by the CP from the SPM fire control radar;

- electronic simulation of SPM launcher operations in various operational modes;

- re-enactment of actual airborne environment recorded in advance onto the AM3-92RK tape and supporting crew operations according to self-propelled fire control radar data (SIMULATION 1 mode);

- re-enactment of the full airborne environment, the throughput of commands and reports and SPM launcher actions with missile departure simulation (SIMULATION 2 mode)

7. *The life support system* is intended to create the necessary air temperature, cleanliness and humidity in the CP vehicle in different climate conditions and to protect from WMD.

The system comprises:

filter and ventilation system FVU-200;

heating and ventilation system OV-65;

two MK-5 air conditioners;

individual fans;

radiation and chemical reconnaissance tool GO-27;

special treatment tool set DK-4;

fire extinguishing tools (UA PPO automatic air defense fire extinguisher)

In addition, the CP is equipped with the TNPO-168 observation tool and the TVNE-4PA night vision tool for local observation.

8. *The power supply tools* are intended for supplying power to CP equipment during the operation of the gas turbine engine, the self-propelled drive engine or an outside power source.

The power supply tools comprise:

two AC generators BG-31 (main and reserve) which can work both off the gas turbine engine or a self-propelled drive engine;

DC generator OG-10;

BU-31 rectifier;

remote controls, switches and power system protection equipment;

four 6ST-140P 24V batteries with the volume of 70A per hour;

gas turbine engine 9I56.

The CP equipment is located in the armored cabin of the self-propelled tracked vehicle GM-579A.

The location of the main CP tools and combat crew is shown in Figure 1.2.

Combat crew composition (Figure 1.2):

battalion commander (1);

CP crew chief (2);

senior operator (3);

Annex 502

Akiva Hamilton, Bankrupting Terrorism - One Interception at a Time, Jerusalem Post (24 November 2012)

Bankrupting terrorism – one interception at a time

 jpost.com/Opinion/Op-Ed-Contributors/Bankrupting-terrorism-one-interception-at-a-time

November 24, 2012



Onlookers at Gush Dan Iron Dome battery 370. (photo credit: Marc Israel Sellem/The Jerusalem Post)

A Facebook friend of mine recently posted: “I love you, Iron Dome, and I want to have your babies.”

Such is the outpouring of love and appreciation for an extraordinary piece of Israeli technology that has saved many lives in southern and central Israel.

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Nevertheless, despite this appreciation, there has been little analysis of the true strategic significance of Iron Dome.

Iron Dome is a game-changer that not only consigns Hamas’ and Hezbollah’s current terror model to the trash can, it completely undermines the military doctrines of all of Israel’s enemies.

Before we discuss this fundamental strategic shift in detail, it is necessary to address a number of important misconceptions that are clouding this reality.

Firstly, Iron Dome is no longer just a short-range missile defense system. The fifth Iron Dome battery, deployed months early just outside Tel Aviv on Saturday, features a significantly improved radar system (by Elta, an unsung hero of the Iron Dome story) and software upgrades that turn this system into a short- and medium-range missile defense system.

While Iron Dome is regularly described as being able to hit rockets with up to a 70 km. range, according to the IDF this new upgrade allows it to intercept Fajr 5 (range 75 km.) and ZelZal (range 200 km.) missiles. Thus, the defense system is already achieving a significant part of what Israel's forthcoming mediumrange missile defense system, David's Sling, is intended to achieve.

Secondly, Iron Dome's Tamir interceptors don't really cost \$40,000 to \$50,000 each to manufacture. Like any high technology system, the vast majority of the costs of Iron Dome are systems development and manufacturing setup.

These fixed costs are spread over the number of items estimated to be manufactured and priced accordingly. However, if the number of items produced substantially exceeds the initial estimate, costs drop proportionately.

The actual marginal cost of production of a Tamir interceptor is low and reflects the costs of the basic raw materials; metal, fuel, explosives and electronic components used in its manufacture, and the labor required to run the assembly line. If the IDF ends up ordering 10 times as many interceptors as originally estimated, then their "cost" will likely drop to around \$5,000. At 100 times as many the "cost" will approach the marginal cost of less than \$1000.

Thirdly, the real cost of the rockets and missiles which Iron Dome intercepts is vastly underestimated by most commentators. Grad rockets may well cost Iran only \$1,000 each on the open market, but this is not the delivered cost to Hamas in Gaza.

The supply line from Iran to Gaza is an extremely convoluted and expensive one which involves huge losses from IAF action bombing convoys and factories in Sudan, and interception by western navies. Large bribes have to be paid at every step of the way, particularly to the Beduin in Sinai and the Egyptian soldiers in Rafah who are supposed to be stopping the smuggling.

And the losses continue once the Grad gets to Gaza, with the IDF regularly destroying rocket caches. Thus, 1,000 Grads, which cost Iran \$1 million to purchase, may end up as 300 Grads which cost a further \$2 million in "delivery charges." This turns a \$1,000 Grad rocket in Iran into a \$10,000 Grad rocket in Gaza.

Fourthly, Iron Dome is fundamentally a highly advanced computer system with a very rapid upgrade cycle. So far Iron Dome is matching pace with the iPhone for major software and hardware upgrades, and consequent performance increases.

This will not only continue but will actually accelerate in accordance with Moore's Law and Ray Kurzweil's Law of Accelerating Returns which state that the performance of computer systems increases exponentially with time.

With each upgrade the interception rate will improve and the range of missiles it can intercept may also improve further. It is therefore that we can expect Iron Dome to reach a 95 percent or higher interception rate in the next year or two, and to continue to improve as the speed and processing power of the computers that make up its brain and eyes (radar) advance.

The practical upshot of this is that the number of rockets per Israeli fatality has risen from 50-75 (Lebanon and Gaza pre-Iron Dome) to 300 in 2011 (75% interception) and around 500 in 2012 (90% interception), despite Hamas using more lethal rockets.

The strategic implications are that the current rocket-based terror strategy of Hamas and Hezbollah has been rendered both ineffective and economically unsustainable. I estimate it is currently costing Hamas (and thus its patron Iran) around \$5m. (500 rockets at \$10,000 each) to murder a single Israeli. When Iron Dome reaches 95% interception rate these figures will double and at 97.5% they will double again.

Contrary to some suggestions, the terrorists cannot bankrupt Israel by firing millions of rockets because the real cost of their rockets exceeds the marginal cost of the Tamir interceptor.

Moreover, most rockets miss and Iron Dome ignores them. Indeed, this strategy will bankrupt Iran even more quickly than President Reagan's "Star Wars" missile defense strategy bankrupted the Soviet Union.

This is devastating not only to the terror strategy of Hamas and Hezbollah, but also to the military doctrines of Israel's nation state enemies, such as Iran and Syria, which have heavily invested in missiles and rockets to compensate for their weak air power.

Iron Dome is already 90% effective against many of Syria's medium-range missiles, and Israel's Arrow 2 missile defense system is similarly effective against Iran's long-range missiles. The remaining components of Israel's comprehensive multi-layer missile defense umbrella, David's Sling and Arrow 3, will become operational in 2013/14 and will follow a similar technological upgrade trajectory as Iron Dome. As a result, the enemy's missile arsenals will continue to decline in effectiveness at exponential rates as interception rates of Israel's missile defense systems increase.

Iran, Syria and their terror proxies are fighting a losing battle with the exponential rate of technological progress in a field in which Israel leads the world.

Iron Dome is a game-changer that heralds the end of rockets and missiles which are being used by the less technologically advanced. In a sense, just like the organization I work for bankrupts terrorism one lawsuit at a time, the Iron Dome does so one interception at a time.

The writer is an attorney at Shurat HaDin – Israel Law Center, a civil rights organization and world leader in combating terrorism through lawsuits. Their website: www.israellawcenter.org



Tags:

- [Tel Aviv](#)
- [rockets](#)
- [iron dome](#)

Annex 503

Kyiv Post, Russian Armed Forces Seize Crimea as Putin Threatens Wider Military Invasion of Ukraine (2 March 2014)

Russian armed forces seize Crimea as Putin threatens wider military invasion of Ukraine

kyivpost.com/article/content/euromaidan/tensions-rise-in-armed-standoff-in-crimea-between-ukrainian-and-russian-backed-forces-337942.html

March 1, 2014



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Members of the Russian Federation Council said that their nation's troops are needed to protect the safety of millions of ethnic Russians in Ukraine and that the soldiers should stay until "the constitutional order is restored in Ukraine," which hints at a possible Russian attempt to return to power Viktor Yanukovich, ousted as Ukraine's president on Feb. 22, or install another Kremlin-friendly leader.

Despite the strong Kremlin rhetoric, there is no evidence that ethnic Russians are in any danger in Ukraine more than anybody else.

Federation Council members heaped scorn on the EuroMaidan Revolution that ousted Yanukovich, condemning the activists as fascists, anti-Semites and neo-Nazis, and said that the Western-financed Ukrainian uprising needed to be stopped before it spread to Russia.

There was, of course, no mention among Moscow officials of Yanukovych's alleged complicity in the deaths of nearly 100 EuroMaidan protesters in the last month as well as his administration's increasingly well-documented corrupt rule.

Putin's request was worded this way: "Due to the extraordinary situation that has taken shape in Ukraine and the threat to the lives of citizens of the Russian Federation, our compatriots, and the personnel of the Armed Forces of the Russian Federation who are deployed on the territory of Ukraine (the Autonomous Republic of Crimea) under an international treaty, I hereby introduce, under Clause (g) of Part 1 of Article 2012 of the Constitution of the Russian Federation, an appeal for the use of the Armed Forces of the Russian Federation on the territory of Ukraine pending the normalization of the social and political situation in that country."

Putin's request, however, comes after the fact.

Russian soldiers already were systematically taking charge of strategic locations on Ukraine's Crimean peninsula on March 1, with estimates of the number of troops or Russian-backed armed forces already on Ukrainian soil ranging from 6,000 and 28,000.

The takeover came as the Crimea's new pro-Russian prime minister, Sergei Aksenov, called for a referendum on March 30 to allow voters in the 2.2 million-population region to decide whether they want to remain in Ukraine, join Russia or form an independent state.

However, Ukrainian government officials in Kyiv questioned the legitimacy of Aksenov's appointment and called a referendum on separatism illegal. Meanwhile, Russian officials and ex-Ukrainian President Viktor Yanukovych, deposed on Feb. 22, are questioning the legitimacy of the new Ukrainian government.

The debate in the Russian Federation Council, which looked set to unanimously vote for the invasion of Ukraine by Russian military troops, is broadcast live on [Russia Today](#), a Kremlin-funded TV station.

Yatseniuk tells Putin to withdraw troops

Ukraine's new prime minister, Arseniy Yatseniuk, today called on Russian President Vladimir Putin to withdraw the troops, estimated to number at least 6,000 soldiers, according to defense minister Ihor Teniukh. He called the movement of Russian troops in Ukraine "a provocation" and violation of the conditions for Ukraine's hosting of the Russian naval base in Crimea's Sevastopol.



Young boys look on as unidentified armed individuals block the center of Balaklava, near Sevastopol, on March 1. Russia's parliament on March 1 gave President Vladimir Putin the go-ahead to send troops into Ukraine, despite a warning from Washington that such a deployment would result in "costs" for Moscow. The stark escalation of the ex-Soviet country's three-month political crisis came amid growing instability in Ukraine's predominantly Russian peninsula of Crimea that has housed Kremlin navies for nearly 250 years. AFP PHOTO/VIKTOR DRACHEV

Eyewitness: Armed takeover is 'a work in progress'

Andriy Ignatov, a Ukrainian working with a TV news crew in Crimea, said that the troops are meeting no resistance by local residents. But he said they're not being welcomed either.

"I see no enthusiasm for the arrival of the troops, maybe because they have no insignias. There's no cheering crowds, no flowers. The attitude is pretty much 'let's go with the flow.' There's concern about what's going to happen next. People ask, 'Are we going to be part of Russia now? Well, then, OK, as long as there's no fighting.'"

Although Russia has not acknowledged that its armed forces are responsible for the takeovers of airports, communication centers, military establishments and government buildings in Crimea during the last two days, Ignatov said that it's clearly a military operation. He said the Russian soldiers are working closely with local pro-Russian militias formed on Feb. 23. Moreover, Russia's Interior Ministry on its website asked Ukrainian police officers to work with them.

"We watched the Russian troops' takeover of the airports in Sevastopol and now in Simferopol," Ignatov said. "From a behavioral point of view, they are not special forces, but are Russian marines. Their uniforms are Russian military. They use weapons used by Russian

forces. They are in full coordination with local militias formed last Sunday. They get the locals to protect the troops from contact with anyone, so that the troops do not say a word and cannot be recognized by their accents.”

A Crimean investigative journalism bureau estimates that as many as 28,000 Russian troops are working on the peninsula, nearly five times higher than what Ukraine’s defense minister estimated today.

Besides airports and government buildings, Ignatov said the soldiers took over Ukraine’s air defense control base in Feodosia and other smaller installations. “They take over perimeter and behave in a non-hostile way,” Ignatov said.

Internet and telephone services were briefly interrupted for several hours last night, he said, but have since returned to normal. However, all civilian flights remain cancelled today.

Some government buildings are flying Russian and Crimean flags on top. Others, like the regional police headquarters, continue to pledge loyalty to Kyiv and fly the Ukrainian flag.

“It’s a work in progress. They are progressively taking charge of strategic objects,” Ignatov said.

Russian Foreign Ministry cites threats, call for help from Aksenov

Meanwhile, Russia’s Foreign Ministry justified incursions by saying that Aksenov, the newly installed Crimean prime minister, asked for the Kremlin’s help in bringing public order to the region. Moscow alleged today that “unknown armed men from Kyiv tried to seize the Crimean Interior Ministry overnight, and there were several injuries in that attack.”

“Moscow is very concerned with the latest developments in Crimea and thinks any further escalation would be irresponsible,” the Foreign Ministry added. “Thanks to the decisive action of self-defense squads, the attempt to seize the building of the Interior Ministry was derailed. This attempt confirms the intention of prominent political circles in Kiev to destabilize the situation on the peninsula.”

Such statements from the Kremlin have been preludes to military intervention in other nations, as Russia did in 2008 when it justified its invasion of neighboring Georgia, another former Soviet republic, as essential to protecting the security of Russians in the Georgian breakaway republics of South Ossetia and Abkhazia.

The Foreign Ministry statement comes as the Kremlin said that Russian President Vladimir Putin is considering the appeal of Aksenov for help “in maintaining peace and tranquility in the territory of the autonomous republic,” according to a statement on March 1.

The Kremlin’s accusations and troop movements, apparently in coordination with Aksenov, are the latest signs that Ukraine’s Crimean is no longer under the control of Kyiv’s transitional government.

Aksenov calls for vote on whether to secede from Ukraine

Moreover, Aksenov issued a statement calling on Crimean voters to vote in a March 30 referendum to decide among three choices: “to retain its current status as an autonomous republic within Ukraine, to become an independent state, or to become part of Russia.” Aksenov moved up the referendum date from the previously scheduled May 25 date.

Aksenov also claimed March 1 to have command of all military forces, police and other security services in the region. He declared that the armed forces, the police, the national security service and border guards will answer only to his orders. He says that any commanders who don't agree should leave their posts.

Aksenov, the head of the main pro-Russia party in the region, was appointed by the Crimean parliament on Feb. 27 as tensions soared over Crimea's resistance to the new authorities in Kyiv who replaced ousted President Viktor Yanukovich and his former top officials. Aksenov replaced Yanukovich's appointee, Anatoly Mogilev, the former interior minister.



Pro-Russian activists hold up a Russian flag and cheer after storming the regional government building in Kharkiv on March 1, 2014. Dozens were hurt on March 1, 2014 when a pro-Russia protest in Ukraine's eastern city of Kharkiv turned violent, with demonstrators trying to storm the local government building. Some 20,000 joined the protest against Kiev's new pro-West government after the ouster of Kremlin-backed leader Viktor Yanukovich, and later around 300 launched the assault on the government building. Stones and stun grenades were thrown

though it was unclear by whom. AFP PHOTO/ SERGEY BOBOK

Protests take place in Kharkiv, Donetsk and other eastern cities

Similar unrest is spreading in the eastern Ukrainian city of Donetsk, where around 12:30 p.m. today more than 7,000 people gathered on Lenin Square to discuss the possibility of holding a referendum on the issue of secession. According to Oleksiy Matsuka, editor-in-chief of Donetsk online news site Novosti Donbassa, the crowd wants to hold elections for new local and regional government and is urging the Russian consulate there to issue Russian passports to Ukrainians there.

There was also a protest with violent clashes in Kharkiv, the nation's second largest city, close to the Russian border.

A LifeNews in Kharkiv showed pro-Russian protesters dragging pro-Ukrainian protesters out of the regional administration building and then occupying it after scuffles. Protesters also took down a Ukrainian flag at the entrance to the building and replaced it with a Russian flag. "We in Kharkiv trust Russia," one person told a TV journalist. A reporter on the scene said: "Many people want to come on live television. They are coming up to our cameras to express their points of view. Some are coming and showing their pistols."

In Lugansk's Sverodonetsk, there are reports of Russian specially trained forces stirring up protesters.



Pro-Russian protesters hold a banner (C) reading “Donetsk region with Russia” and a placard reading “South-east against fascism!” during a rally in the industrial Ukrainian city of Donetsk on March 1, 2014. More than 10,000 people carrying Russian flags protested in the eastern Ukrainian city of Donetsk, the stronghold of ousted president Viktor Yanukovich. Protesters declared they supported “the aspirations of Crimea to rejoin Russia”, referring to Ukraine’s pro-Russia peninsula further south where Kiev has accused Moscow of launching an “armed invasion.” AFP PHOTO/ ALEXANDER KHUDOTEPLY

Turchynov cites Russian invasion of Georgia in 2008

Also on Feb. 28, Oleksandr Turchynov, Ukraine’s acting head of state, accused Russia of “provoking a conflict” by backing the seizure of the Crimean parliament building and other government offices on the peninsula. Armed gunmen have also seized Crimea’s telecommunication company.

“They’re playing the Abkhazia scenario,” Turchynov said at a late night briefing in Verkhovna Rada, referring to Russia’s 2008 invasion of Georgia, which led to the breakaway independence of two of its regions, Abkhazia and South Ossetia.

Turchynov also warned Russian President Vladimir Putin “to stop the provocation and call back the military from the Autonomous Republic of Crimea, and work exclusively within the framework of the signed agreements,” Turchynov said, referring to Ukraine’s conditions for hosting Russia’s naval base in Sevastopol. Those conditions include no Russian troop movements on the peninsula without authorization of the Ukrainian government.

Turchynov calls for Western help

Turchynov also noted that he expects help from the West in ensuring Ukraine’s sovereignty.

“I also remind that the United States, Russia and Great Britain are also guarantors of the national security of Ukraine,” Turchynov said, referring to the 1994 Budapest Memorandum that pledged Western support in exchange for Ukraine’s surrender of its Soviet-era nuclear weapons arsenal.

“We demand to stop the provocation, we demand to normalize the situation. We’re sure that Ukraine will preserve its territory, Ukraine will defend its independence and any attempts of annexation, intrusion will have very serious consequences,” Turchynov said.



A woman holds a sign during a demonstration in front of the Russian Embassy in Kiev on March 1, 2014. Russian President Vladimir Putin on March 1, 2014 submitted a request to the upper house of parliament asking approval for the use of Russian troops in Ukraine, the Kremlin said. "In connection with the extraordinary situation in Ukraine and the threat to the lives of Russian citizens... I submit to the Federation Council a request to use the armed forces of the Russian Federation on Ukrainian territory until the normalisation of the political situation in that country," the Kremlin quoted Putin as saying in the document. AFP PHOTO/ YURY KIRNICHNY

Ukraine's transitional government unable to stop takeovers in Crimea

However, Ukraine's transitional government has failed to prevent the takeover of Crimean government buildings and airports. Moreover, armed and uniformed men are manning road checkpoints under the Russian flag.

The pro-Russian Aksenov, hostile to Kyiv's transitional government, took power on Feb. 27 after the Crimean parliament fired Yanukovich's appointed representative, Anatoly Mogilev, the nation's former interior minister.

The Crimean parliament had scheduled a referendum for May 25 – simultaneously to Ukraine's next presidential elections – on whether residents of Crimea favor more independence from Kyiv. In addition, Sevastopol's mayor resigned and its city council elected Russian citizen Aleksei Chaliy to take charge of the city on Feb. 24.

A delegation of Russian members of parliament, including ultranationalist Vladimir Zhirinovskiy,

have visited the city. He said Russia was not planning to take over Crimea.

Meanwhile, Russian warships are at the entrance of the Balaklava Bay and as many as 10 Russian military helicopters have been reported violating Ukrainian airspace in the area.

The Coast Guard detachment of the Ukrainian State Border Service in Balaklava has been surrounded by Russian marines – the administrative part of Sevastopol where the Russian Black Sea fleet is stationed, a state border guard service news release stated.

National Security and Defense Council secretary Andriy Parubiy said on Feb. 28 that an action plan is in force to prevent a “separatist scenario in Crimea.” He added that similar Kremlin-backed separatist plans are in place for the nation’s southern and eastern regions that are friendlier to Russia.

“But the situation for now is localized (in Crimea) and we will try to avoid an escalation,” Parubiy said.

Avakov calls Crimea situation a Russian ‘military intervention’

Earlier, Interior Minister Arsen Avakov called the developments in Crimea a “military intervention” and “occupation” by the Kremlin.

“What we are witnessing is a special operation performed by the Kremlin,” said Oleksiy Melnyk, director of foreign relations and international security programs at Razumkov Center, a Kyiv think tank.

Russia’s objective, the expert said, is to “deprive Ukraine of political independence and threaten its territorial integrity...and keep it under its sphere of influence and use it as another bargaining tool with the West.”

While citing similarities to how Russia gained control over Transdniestria, and South Ossetia and Abkhazia, Melnyk said the military maneuvers in Crimea were all part of a big plan to either “turn Sevastopol into a second Kaliningrad, conquer Crimea, or Crimea together with eastern Ukraine.”

Although Kyiv is doing all it can to avoid a military conflict, Melnyk told the Kyiv Post that the Ukrainian government “doesn’t have full authority down there.”

He noted that Crimea has strong numbers of Berkut, the riot police unit disbanded by Kyiv’s new government and blamed in the deaths of scores of EuroMaidan protesters. They won’t be too loyal given that they just returned from Kyiv where “they committed criminal actions and will commit other crimes to avoid being held accountable,” Melnyk said.

Russia denies being part of takeovers

Thus far, the Russian Black Sea fleet has denied being a part of the airport takeovers and occupation of government buildings.

However, Melnyk stated that only the Ukrainian military and Russian Black Sea fleet together with several Russian Federal Security Service (FSB) units have the right to operate in Crimea so, “if another force blocks Ukrainian military bases, then it is not the Ukrainian military.”

In addition, Melnyk said the armed men who have attempted taking over the airports and who have occupied buildings have no insignia or identification.

“They are beyond the realm of the law and could be simply be called terrorists or mercenaries,” said Melnyk, adding that the armored personnel carriers and trucks transporting the armed men also don’t have identifiable tag numbers.

Pyatt says US is committed to Ukrainian sovereignty

U.S. Ambassador to Ukraine Geoffrey Pyatt said on Feb. 27 that “nobody should make mistakes at this point and the United States is committed to Ukraine’s sovereignty and territorial integrity at this critical time... So we are deeply convinced that this is not a zero-sum issue.”

He added that it is in Russia’s best interest to have a stable “situation in Ukraine and that Russia will benefit from democracy, economic growth, and progress in this country.”

Crimea has always been a potentially volatile region after Soviet leader Nikita Khrushchev transferred it from Russia to Ukraine in 1954.

Crimea’s cultural links were always far stronger with Russia. Today, some 58 percent of Crimean residents identify themselves as ethnic Russian, while about 12 percent of its residents are Tatar who started returning to their homeland in the late 1980s after being expelled by Soviet dictator Josef Stalin after World War II. About 24 percent are Ukrainians.

According to a recent poll released last week by the Democratic Initiatives Foundation, some 42 percent of Crimea residents want Ukraine to unite with Russia.

Turkey’s Foreign Minister Ahmet Davutoğlu on Feb. 27 said Crimea is of great importance to Turkey. Tatars are a Turkic ethnic group and both are Muslims. “For Turkey, Ukraine’s territorial integrity, stability and prosperity are crucial. Our greatest wish is the maintenance of stability in Ukraine,” said Davutoğlu.

Meanwhile, Tatar lawmaker Mustafa Dzhemilev of the Batkivshchyna Party has asked Turchynov to deploy the entire Ukrainian army to Crimea. “There are no threats in other oblasts yet. Call a state of emergency and take control,” said Dzhemilev, cited by RBK-Ukraine.

Parubiy, the new national security council head, today said calling a state of emergency won’t solve anything.

“This kind of scenario won’t help solve the problems that are now in Crimea and the Security Council is looking for other methods to bring the situation under control,” said Parubiy.

Updated at 10:56 p.m. March 1 Kyiv time

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Found a spelling error? Let us know – highlight it and press *Ctrl + Enter*.

Annex 504

Alan Taylor, 'Believed to Be Russian Soldiers', The Atlantic (11 March 2014)

'Believed to Be Russian Soldiers'

 theatlantic.com/photo/2014/03/believed-to-be-russian-soldiers/100696/

Alan Taylor

Less than two weeks ago, after Ukrainian protesters appeared to have ousted President Viktor Yanukovich, thousands of soldiers bearing no insignia or identifying marks began appearing in Ukraine's pro-Russian Crimean peninsula. Russian authorities deny that these men are invading Russian soldiers, instead describing them as "local self-defense forces" wearing uniforms available from army surplus centers. However, numerous reports on the ground have identified the troops as Russian, including direct interviews with several soldiers. As Crimean lawmakers set up a March 16 referendum on independence from Ukraine, these armed men have surrounded numerous Ukrainian military facilities, blocking entrances, and set up roadblocks on highways throughout the region.

[Read more](#)

Hints: View this page [full screen](#). Skip to the next and previous photo by typing j/k or ←/→.



- A uniformed man, wearing no insignia or identifying marks, but believed to be a Russian serviceman, stands on guard outside a Ukrainian military base in the village of Perevalnoye outside Simferopol, on March 5, 2014. Ukraine's foreign minister said his country feels like it's almost in a state of war after Russian forces took effective control of Ukraine's Crimean Peninsula. #

Reuters/Vasily Fedosenko

[Read more](#)



- Russian military armored personnel carriers drive on the road from Sevastopol to Simferopol, on March 4, 2014. #

Reuters/Baz Ratner

[Read more](#)



- A Russian military helicopter flies near Simferopol, Ukraine, on March 3, 2014. #

Reuters/Baz Ratner

[Read more](#)



- Soldiers, believed to be Russian, ride on military armored personnel carriers on a road near the Crimean port city of Sevastopol, on March 10, 2014. #

Reuters/Baz Ratner

[Read more](#)



- A man in military fatigues sits atop an armored personnel carrier on the road from Sevastopol to Simferopol, Crimea, Ukraine, on March 10, 2014. #

AP Photo/Darko Vojinovic

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- Armed servicemen wait near Russian military vehicles outside a Ukrainian border guard post in the Crimean town of Balaclava, on March 1, 2014. #

Reuters/Stringer

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- Uniformed men, believed to be Russian servicemen, march outside a Ukrainian military base in the village of Perevalnoye outside Simferopol, on March 5, 2014. #

Reuters/Vasily Fedosenko

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- Ukrainian servicemen walk on the roof of their base as uniformed men believed to be Russian soldiers (not pictured) stand guard at a Ukrainian military base near Sevastopol, on March 8, 2014. #

Reuters/Baz Ratner

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- Heavily-armed troops displaying no identifying insignia and who were mingling with local pro-Russian militants stand guard outside a local government building on March 3, 2014 in Simferopol, Ukraine. Police removed roadblocks in the city center and access to the Crimean Parliament building opened again in signs that daily life is returning to a form of normalcy and that pro-Russian forces have cemented their control of the Crimean capital. #

Sean Gallup/Getty Images

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- Attack helicopters, believed to be Russian, fly over a Russian military base in Sevastopol, March 7, 2014. President Vladimir Putin rebuffed a warning from U.S. President Barack Obama over Moscow's military intervention in Crimea, saying on Friday that Russia could not ignore calls for help from Russian speakers in Ukraine. The words on the wall read "Glory to Russian Navy". #

Reuters/David Mdzinarishvili

[Read more](#)



- Armed men, believed to be Russian soldiers, carry a heavy machine gun outside a Ukrainian military base in Yevpatoria, on March 9, 2014. #

Reuters/Thomas Peter

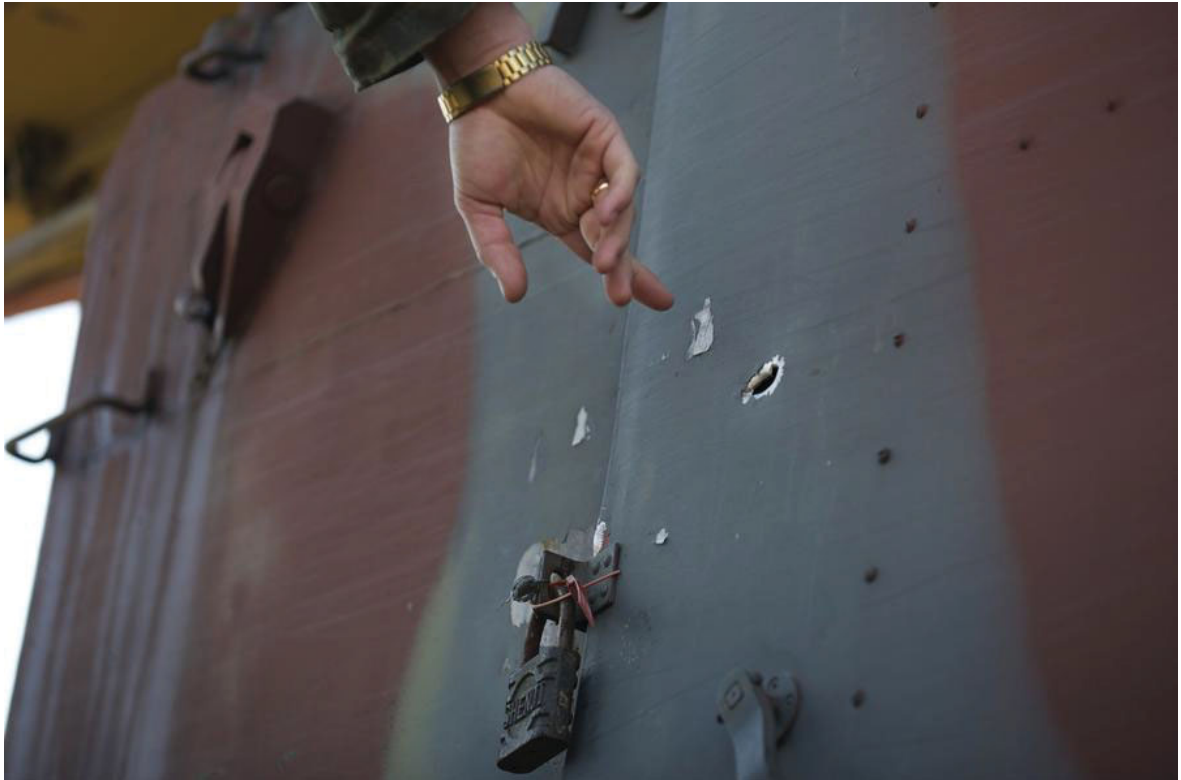
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- Russian forces look out at the Ukrainian navy ship Slavutich in the harbor of Sevastopol, on March 5, 2014. #

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- A Ukrainian military officer points to a bullet hole in a door of an anti-aircraft missile launcher control position at a Ukrainian military unit, which was taken under Russian control on March 5, 2014, in Sevastopol. #

AP Photo/Andrew Lubimov

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- An abandoned naval ship sunk by the Russian navy to block the entrance in the Crimean port of Yevpatorya, on March 8, 2014. #

Reuters/David Mdzinarishvili

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- A Ukrainian sailor warms himself as he stands watch looking for Russian soldiers who may attempt to take over his vessel Ternopil, in Sevastopol, on March 4, 2014. The blankets and mattresses are placed over the side of the ship to hinder any attempted assault. #

AP Photo/Ivan Sekretarev

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- An armed man, believed to be a Russian soldier, stands guard outside a Ukrainian military base in Perevalnoe, on March 5, 2014. #

Reuters/Thomas Peter

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- Troops apparently under Russian command assemble before getting into trucks near the Ukrainian military base they are blockading on March 5, 2014 in Perevalne, Ukraine. Meanwhile armed paramilitary troops, including Cossacks armed with Klashnikov rifles and armored personnel carriers, have dug in at the northern end of Crimea around Armyansk in what seems to be an effort to define the new border between Crimea and Ukraine. #

Sean Gallup/Getty Images

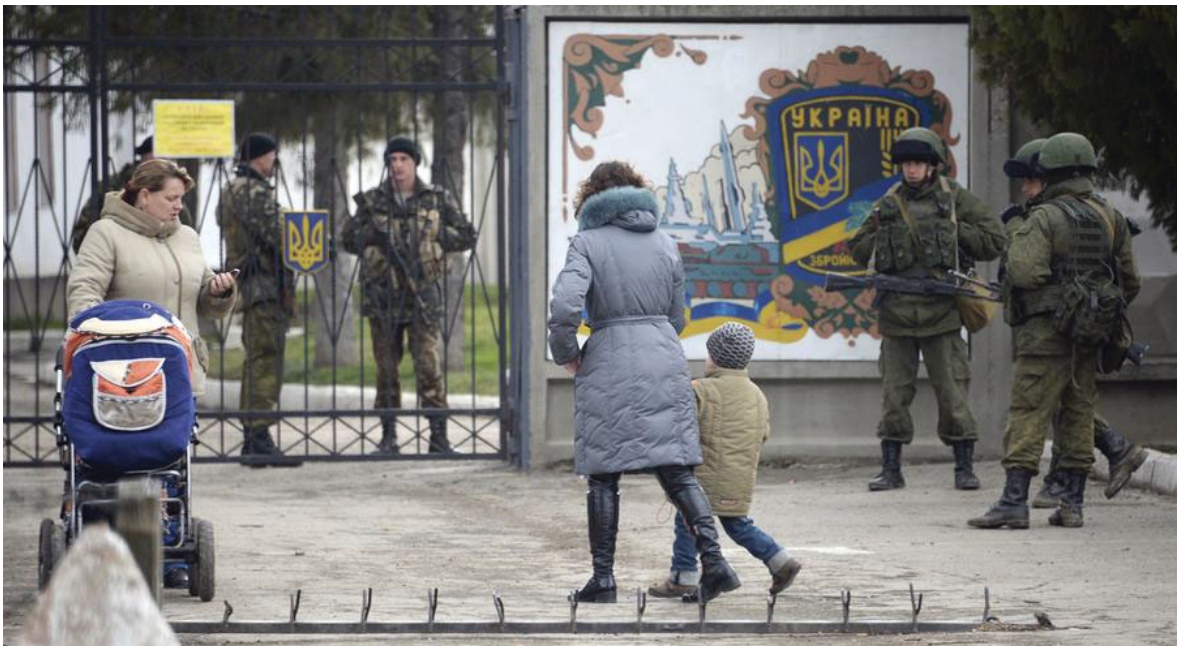
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- Uniformed men believed to be Russian servicemen walk around a Ukrainian military base near Sevastopol, on March 8, 2014. #

Reuters/Baz Ratner

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- Local residents walk by Russian forces (right) blocking access to the base of the 36th detached brigade of the Ukrainian Navy's coast guard, as Ukrainian soldiers stand guard behind the entrance gate (left), not far from the village of Perevalne, near Simferopol, on March 5, 2014. #

Alexander Nemenov/AFP/Getty Images

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- A Ukrainian soldier inside the Belbek military base gets an affectionate pat from a woman who was among approximately two dozen who spent the night outside the gate in support of the men in Lubimovka, Ukraine, on March 4, 2014. Tensions at the base, where between 300 and 400 Ukrainian soldiers are stationed, were high as a 4pm deadline the day before reportedly given by Russian troops for the Ukrainians to surrender passed and the troops feared the Russians might attack the base overnight. Many of the soldiers have family that live in apartment blocks just outside the base and about two dozen family members braved the cold ready to block the road to the base entrance should the Russians appear. #

Sean Gallup/Getty Images

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- Ukrainian soldiers stand behind a gate while an unidentified armed man blocks the headquarters of the Ukrainian Navy in Sevastopol, on March 3, 2014. #

Viktor Drachev/AFP/Getty Images

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- Local women watch armed men, believed to be Russian soldiers, assemble near a Ukrainian military base in Perevalnoe, on March 5, 2014. #

Reuters/Thomas Peter

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- A truck and soldiers block the road leading to Babek Airport near Sevastopol, apparently occupied by Russian troops in Crimea, on March 2, 2014 near Balbek, Ukraine. #

Sean Gallup/Getty Images

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- **(1 of 7)** A Russian soldier lies with his back to Ukrainian fighter jets as he watches Ukrainian serviceman at the Belbek airport in the Crimea region, on March 4, 2014. #

Reuters/Baz Ratner

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- **(2 of 7)** Colonel Yuli Mamchor, commander of the Ukrainian military garrison at Belbek airbase, salutes before leading over 100 of his unarmed troops to retake Belbek airfield from soldiers under Russian command in Crimea, on March 4, 2014 in Lubimovka, Ukraine. After spending a tense night anticipating a Russian attack following the expiration of a Russian deadline to surrender, in which family members of troops spent the night at the garrison gate in support of the soldiers, Mamchor announced his bold plan to his soldiers early this morning. #

Sean Gallup/Getty Images

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- **(3 of 7)** Unarmed Ukrainian troops bearing their regiment and the Ukrainian flags march to confront soldiers under Russian command occupying Belbek airbase, on March 4, 2014. #

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- **(4 of 7)** A soldier under Russian command aims a rocket propelled grenade launcher at a group of over 100 unarmed Ukrainian troops who marched to Belbek airbase, which the Russian troops are occupying, on March 4, 2014. #

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- **(5 of 7)** Troops under Russian command fire weapons into the air and scream orders to turn back at an approaching group of over 100 unarmed Ukrainian troops at Belbek airbase, on March 4, 2014. #

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- **(6 of 7)** A soldier under Russian command restrains another after he fired his weapon into the air and screamed orders at an approaching group of over 100 unarmed Ukrainian troops at Belbek airbase, on March 4, 2014. #

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- **(7 of 7)** Colonel Yuli Mamchor (right), commander of the Ukrainian military garrison at Belbek airbase, speaks to troops under Russian command occupying the airbase, on March 4, 2014 in Lubimovka, Ukraine. The Russian-lead troops granted Mamchor access to begin negotiations with their commander. #

Sean Gallup/Getty Images

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- People walk past a poster in Sevastopol on March 11, 2014 reading "On March 16 we will choose either... or...", depicting Crimea in red with a swastika and covered in barbed wire, and Crimea with the colors of the Russian flag. Pro-Moscow lawmakers in Crimea voted for independence from Ukraine on March 11 in a precursor to a referendum this weekend for the region to become part of Russia. #

Viktor Drachev/AFP/Getty Images

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- Military armored personnel carriers, believed to be Russian, drive on a road near the Crimean port city of Sevastopol, on March 10, 2014. #

Reuters/Baz Ratner

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- A tractor digs a series of holes next to a checkpoint in Chongar, northern Ukraine, on March 7, 2014. Spreading out from the road by the checkpoint there is a perfect row of holes dug into the earth, each about half-a-meter wide, in what looked like the first steps of installing a border fence. Signs nearby warned of mines and were marked "Stop! Danger to Life!" with a skull-and-crossbones. #

Alexander Nemenov/AFP/Getty Images

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- Armed men, believed to be Russian servicemen, stand at the entrance of a military unit in Simferopol, on March 10, 2014. These forces consolidated their hold on Ukraine's Crimea peninsula on Monday, taking over a military hospital and a missile base as officials geared up for a referendum on the region's future. #

Reuters/Vasily Fedosenko

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- Pro-Ukrainian sympathizers hand gifts of cigarettes, chocolate and flowers to a Ukrainian soldier standing inside a blockaded Ukrainian military base on March 8, 2014 in Simferopol. Several hundred pro-Ukrainian protesters marched peacefully through the city center to a Ukrainian military base that has been blockaded by pro-Russian militants and soldiers. #

Sean Gallup/Getty Images

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- Armed men, believed to be Russian servicemen, march outside a Ukrainian military base in the village of Perevalnoye, on March 10, 2014. #

Reuters/David Mdzinarishvili

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- An armed man (right), believed to be a Russian serviceman, stands near members of a pro-Russian self defense unit before they take an oath to the Crimean government in Simferopol, on March 10, 2014. #

Reuters/Vasily Fedosenko

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- Ukrainian officers stand behind the gates of a military unit in the village of Perevalnoye, on March 11, 2014. A pro-Russian force opened fire in seizing a Ukrainian military base in Crimea on Monday and NATO announced reconnaissance flights along its eastern frontiers. Diplomats and heads of state are still seeking to defuse the potentially volatile crisis that has developed since pro-Russian forces seized power in Crimea and are seeking to join the peninsula with Russia. #

Reuters/Vasily Fedosenko

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Annex 505

Vitaly Shevchenko, "Little Green Men" or "Russian invaders"? BBC News (11 March 2014)

"Little green men" or "Russian invaders"?

By Vitaly Shevchenko
BBC Monitoring

🕒 11 March 2014

Ukraine crisis



The internet has no shortage of photographs and videos showing armed men in Crimea who look like members of the Russian military. Their guns are the same as those used by the Russian army, their lorries have Russian number plates and they speak in Russian accents.

Yet according to President Vladimir Putin, they are in fact members of "self-defence groups" organised by the locals who bought all their uniforms and hardware in a shop.

This poses a challenge to the media covering the crisis: what do you call people who are officially not there?

The state-run and pro-government media in Russia have chosen to take little notice of them, and the heavily armed men are rarely if ever shown on TV. Instead, they show groups of lightly-armed "volunteers" described as local "self-defence groups".

"Polite men"

Russian journalists less aligned with the Kremlin often use the phrase "polite men". According to centrist daily **Nezavisimaya Gazeta**, "'polite, armed men' are in charge of Crimea now". Describing them as Russian troops in the Russian media "is not the done thing, and even dangerous, too," prominent photojournalist Denis Sinyakov comments on independent website **Colta**.

According to popular blogger **Ilya Varlamov**, the term "polite men" was invented by spin doctors who arrived in Crimea from Moscow. "They are creating an image of a Russian liberator-soldier wearing a nice new uniform and armed with beautiful weapons, who has come to defend peaceful towns and villages," Mr Varlamov says.

"Little green men"

Another phrase used by reporters in Russia and Ukraine alike is "little green men", which refers both to the colour of their uniforms and their unconfirmed origin.

Their involvement in Crimea is a "tragicomic masquerade", says Russian liberal newspaper **Novaya Gazeta**, which argues that "the little green men will turn into Russian troops very soon".

According to Kiev-based private TV channel One Plus One, the term "little green men" was coined by local residents in Crimea. It is now frequently mentioned on Ukrainian TV, by a **defence ministry spokesman** in his posts on Facebook and even by Prime Minister Arseniy Yatsenyuk in his recent addresses to parliament.

Some Ukrainian journalists have criticised the use of this term. "Colleagues, stop using the affectionate term 'little green men' to describe the Russian troops," tweeted journalist **Svyatoslav Tseholko**. "Otherwise you get the impression that we trust Putin more than we do common sense."

'Russian invaders'

Most journalists in Ukraine, however, have little doubt about the true identity of the pro-Russian armed men.

"Russian invaders" and "occupiers from Russia" is how popular Kiev-based news website **Ukrayinska Pravda** describes the military men in Crimea. Meanwhile, analytical daily **Den** calls them "Russian extremists", echoing language used by the Russian media to describe Islamist militants.

Even outlets previously supportive of ousted President Viktor Yanukovich - such as **Segodnya**, a tabloid owned by Ukraine's richest man Rinat Akhmetov, - are now calling the

military presence in Crimea "an armed intervention".

Ukraine's most popular TV channel Inter is treading a more cautious line. Previously critical of the protests that led to President Yanukovich's downfall, **Inter** speaks of "unknown armed men" in Crimea. But it also said that they were bringing Russian military hardware to the peninsula.

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Annex 506

Direct Line with Vladimir Putin, President of Russia (17 April 2014)

Direct Line with Vladimir Putin

The annual special Direct Line with Vladimir Putin was broadcast live by Channel One, Rossiya-1 and Rossiya-24 TV channels, and Mayak, Vesti FM and Radio Rossii radio stations.

April 17, 2014 15:55 Moscow

Especially popular in the course of the discussion were questions about Crimea, including the socioeconomic situation in Russia's new regions – the Crimean Republic and Sevastopol, the development of Russia's Black Sea Fleet, and the situation regarding the Crimean Tatars. There were also questions about the situation in Ukraine, and the assessment of the developments in the southeast of the country.

The discussion also touched upon international issues, such as relations with the West and NATO, the deployment of US anti-missile defence systems in Europe, the situation with Transnistria, and economic issues related to the global oil and gas markets. Vladimir Putin answered questions not only from citizens of Russia, but of other countries as well, for instance from experts of the Valdai Club from Germany, the US and Hungary, and a question from Edward Snowden.

Numerous questions dealing with the country's life were raised, including those related to healthcare, housing and utility services, relief efforts following the largest ever flood in the Far East last year, prospects for the future use of Olympic facilities in Sochi, as well as ways of instilling patriotism, and building relations with the opposition.

There were also a few personal questions. In the final part of the Direct Line, the President answered questions of his own choice.

During the live television broadcast that lasted 3 hours 54 minutes, the President responded to a total of 81 questions and appeals.

* * *

Direct line programme host Kirill Kleymenov: Good afternoon,

You are watching Direct Line with President Vladimir Putin. Here in the studio today are Maria Sittel and Kirill Kleymenov.

Direct line programme host Maria Sittel:

Good afternoon,

I could say that we are having today yet another conversation with Vladimir Putin, however the situation is different since the country we are talking to now has changed. After waiting for 23 years, since the breakup of the Soviet Union, Crimea and Sevastopol have joined Russia. For this reason, every question today will be directly or indirectly related to Crimea.

We will discuss a number of issues today, including healthcare, army, taxes, agriculture and, naturally, Ukraine. There is no doubt that we'll discuss developments in Ukraine's southeast and the genocide that was unleashed in this region. Ukraine is sliding into civil war.

Kirill Kleymenov: Our colleagues Olga Ushakova, Valeriya Korableva, Tatyana Stolyarova and Dmitry Shchugorev will assist us during today's broadcast, while Tatyana Remizova and Anna Pavlova are working in the call and SMS processing centre.

I would like to remind you that you can watch us live on Channel One, as well as on Rossiya-1 and Rossiya-24 TV channels, and on Russia's Public Television channel, where interpretation into sign language will be available for people with impaired hearing. Radio listeners can join our conversation on Mayak, Vesti FM and Radio Rossii stations.

We are live with President Vladimir Putin.

Tatyana Remezova: Good afternoon, colleagues! Hello, Mr President.

Our call centre has been working for a week, and we will continue to take calls during the Direct Line broadcast. You can call us at the toll-free number 8 (800) 200–4040 or send text messages to 04040. There is a separate Moscow number, which is also toll free, for residents of the Republic of Crimea and Sevastopol: +7 (495) 539–2442. People from other countries can call us at the number you can see on the screen.

Over the past eight days, our call centre has received over two million questions, or 17,500 per minute – we are definitely going to set a new record – and many callers just say, “Thank you for Crimea.”

Anna Pavlova: Good afternoon. I’d like to remind you that this year you can send video questions to the President from your PC or any mobile device. Our operators continue to accept your messages on the websites www.moskva-putinu.ru and москва-путину.рф. There is still time to record and send your questions.

I’d like to tell you that this is the first time that this programme will be broadcast with a sign-interpreted version on our website. These new options have been introduced to increase the audience.

Maria, Kirill, back to you.

Kirill Kleymenov: So, about Ukraine. Events are unfolding there with an incredible and sometimes alarming speed. Indeed, two months ago, during the Olympic Winter Games on February 17, no one thought that Crimea would reunite with Russia and that people in eastern Ukraine would stop armoured convoys sent from Kiev with their bare hands.

Mr Putin, the first question is perfectly obvious: What do you think about the events underway in the Lugansk and Donetsk regions?

President of Russia Vladimir Putin: Before I answer your question, I’d like to go back a little to review recent events in Ukraine. As you know, President Yanukovich refused to sign the Association Agreement with the EU. No, he did not refuse to sign it, but said

that he could not sign it on the EU conditions, because it would dramatically worsen the socioeconomic situation in Ukraine and affect Ukrainians. Yanukovych said that he needed more time to analyse the document and to discuss it together with Europeans. This provoked public unrest that eventually culminated in an unconstitutional coup, an armed seizure of power. Some liked it, and some did not. People in eastern and southeastern regions of Ukraine were worried about their future and the future of their children, because they saw a rapid growth of nationalist sentiments, heard threats and saw that [the new authorities] wanted to invalidate some of the ethnic minorities' rights, including the rights of the Russian minority. On the other hand, this description is relative, because Russians are native persons in Ukraine. But an attempt was made to invalidate all decisions regarding the use of the native language. This alarmed people, of course. What happened next?

Instead of starting a dialogue with these people, Kiev appointed new governors – oligarchs and billionaires – to these regions. People are suspicious of oligarchs as it is. They believe that they earned their riches by exploiting people and embezzling public property, and these oligarchs have been appointed to head their regions. This only added to the public discontent. People chose their own leaders, but what did the new government do to them? They were thrown into prison. Meanwhile, nationalist groups did not surrender their weapons, but threatened to use force in the eastern regions. In response, people in the east started arming themselves. Refusing to see that something was badly wrong in the Ukrainian state and to start a dialogue, the government threatened to use military force and even sent tanks and aircraft against civilians. It was one more serious crime committed by the current Kiev rulers.

I hope that they will see that they are moving into a deep hole, and that they are pulling their country along. In this sense, the talks that will start today in Geneva are very important, because I believe that we should get together to think about ways out of this crisis and to offer people a real, not sham, dialogue. The current Kiev authorities have travelled to the eastern regions, but who do they talk to there? They talk to their appointees. There's no need to go to Donbass for this, because they can summon them to Kiev for a meeting. They should talk with people and with their real representatives, with those whom people trust. They should release the arrested [opponents], help people to express their opinion in an organised manner, suggest new leaders and start a dialogue.

People in the eastern regions are talking about federalisation, and Kiev has at long last started talking about de-centralisation. But what do they mean? To be able to understand what they mean, they should sit down at the negotiating table and search for an acceptable solution. Order in the country can only be restored through dialogue and democratic procedures, rather than with the use of armed force, tanks and aircraft.

Kirill Kleymenov: So far the dialogue has started between diplomats: top diplomats from the United States, Russia, the European Union and Ukraine are meeting in Geneva at this very moment. Russia is represented by Foreign Minister Sergei Lavrov. Could you outline Russia's stance at the talks in just a few words?

Vladimir Putin: I just did exactly that. We feel strongly that this should not be a sham dialogue between representatives of the authorities, but a dialogue with the people to find the compromise I was talking about.

Kirill Kleymenov: How would you respond to the statements coming from both Kiev and the West about Russia being behind the protests in eastern Ukraine, allegedly staged and financed by "Moscow's hand"? They even claim that certain Russian armed units are there.

Vladimir Putin: Nonsense. There are no Russian units in eastern Ukraine – no special services, no tactical advisors. All this is being done by the local residents, and the proof of that is the fact that those people have literally removed their masks. So I told my Western partners, "They have nowhere to go, and they won't leave. This is their land and you need to negotiate with them."

Maria Sittel: I'm sure we'll get back to the events in the southeast later in the course of this conversation. Now let's talk about Crimea and how you took the decision. You never gave as much as a hint about Crimea over the course of your political career. You must have thought about it, but you never even mentioned Crimea in private talks.

So how was this decision made? Can you tell us again? Was this opposed by any members of your team? What was your assessment of the possible risks, from international sanctions to the civil war we are watching unfold now?

Vladimir Putin: The most obvious risk was that the Russian speaking population was threatened and that the threats were absolutely specific and tangible. This is what made Crimean residents, the people who live there, think about their future and ask Russia for help. This is what guided our decision.

I said in my recent speech in the Kremlin that Russia had never intended to annex any territories, or planned any military operations there, never. Quite to the contrary, we were going to build our relations with Ukraine based on current geopolitical realities. But we also thought, and have always hoped, that all native Russians, the Russian-speaking people living in Ukraine, would live in a comfortable political environment, that they would not be threatened or oppressed.

But when this situation changed, and Russians in Crimea were facing exactly that, when they began raising the issue of self-determination – that’s when we sat down to decide what to do. It was at this exact moment that we decided to support Crimeans, and not 5, 10 or 20 years ago.

I discussed this problem with the Security Council members, and no one objected. In fact all of them supported my position. And I’m more than happy now that all the steps in the action plan were taken in a very precise manner, quickly, professionally and resolutely.

Kirill Kleymenov: I would say the way the plan was executed was unique and unparalleled in history.

Mr Putin, we who live in Russia are very well aware of how things are done here. But indeed, this was done very quickly – a complicated referendum was organised in the shortest time possible, security issues addressed, and Ukrainian units disarmed – that really gave the impression of a long-planned and prepared action.

Vladimir Putin: No. This had not been pre-planned or prepared. It was done on the spot, and we had to play it by ear based on the situation and the demands at hand. But it was all performed promptly and professionally, I have to give you that.

Our task was not to conduct a full-fledged military operation there, but it was to ensure people's safety and security and a comfortable environment to express their will. We did that. But it would not have been possible without the Crimeans' own strong resolution.

Also, I must say that I didn't add the concluding line to my Kremlin speech – about initiating a draft law on the inclusion of Crimea in the Russian Federation – until the very last day, last moment, because I was waiting for the referendum results. Polls and surveys are one thing, along with certain groups' sentiments, but a referendum is the expression of the will of all the residents of an area. It was very important for me to know what their will was.

So when the voter turnout reached 83 percent and more than 96 percent supported Crimea's inclusion in the Russian Federation, it became obvious that this decision was made by the majority, if not unanimously. In this situation, we couldn't have done otherwise.

Kirill Kleymenov: We'll return to your Kremlin speech later. Now we have an opportunity to hear from Crimea.

Maria Sittel: Let's invite Sevastopol, a hero city and a city of military glory – to join in our discussion. Our camera crew in Sevastopol, Dmitry Kaistro and Nikolai Dolgachyov.

Dmitry Kaistro: Good afternoon, Mr President.

Good afternoon, colleagues and everybody who tuned in.

Sevastopol is indeed a city of Russian glory. There are hundreds of people gathered here, in the heart of the city, on Primorsky Boulevard. There are people from all walks of life, including navy and civilian personnel. These are people who voted for the accession of Crimea and Sevastopol to Russia.

We are currently working at two sites; this is not the only location. Another site is located very close to the sea. My colleague, Nikolai Dolgachyov, is working there.

Nikolai Dolgachyov: Here, on the very shore of the famous Sevastopol Bay where the Russian Black Sea Fleet is based and has been based for over 200 years, people have gathered from across Crimea. There are students and pensioners, veterans, workers, doctors and representatives of self-defence units. We are ready to talk.

Good afternoon, colleagues. Good afternoon, Mr President.

Vladimir Putin: Good afternoon.

Nikolai Dolgachyov: Primorsky Boulevard is indeed the heart of Sevastopol. The main symbols of the city are located right there. They are the Grafskaya Quay, a memorial to sunken ships, and Admiral Nakhimov Square, named after the navy man who fought and died as an infantry lieutenant. Local residents bring flowers to his statue every night. This is something you will see only here, in Sevastopol.

Sevastopol is a symbol, a fortress, a city full of special meaning for Russia's destiny. And the people of Sevastopol have been contesting that meaning for a long 23 years, which concerns the right to speak Russian and the right to Russian values. They defended their rights. Almost the entire city voted in favour of joining Russia.

Today, Sevastopol residents came here to ask their questions. And they have many. Who would like to ask a question? Please introduce yourself.

Larisa Medvedeva: The civilian personnel of the military units are very concerned about the fate of the Black Sea Fleet. For many of us, the fleet means work and people and the only unique artillery repair plant. What will happen to the Black Sea Fleet and other state-owned enterprises?

Vladimir Putin: You probably know better than anyone else in Russia that we had certain agreements with Ukraine on upgrading the fleet. Unfortunately, those agreements were not diligently fulfilled, if at all. We had many problems with upgrading the fleet. I hope there will be no such problems anymore and that the major part of modern vessels and support ships will be transferred from Novorossiysk to Sevastopol. This will give us an opportunity to even save some money. This is the first point.

Secondly, Crimea has good shipbuilding and ship-repairing potential. Therefore, a substantial amount of this work will be carried out in Crimean shipyards. The Russian Defence Ministry has already placed an order worth 5 billion rubles with one of the shipyards. We undoubtedly will be increasing this potential of Crimea because currently it is not in high demand, it is idle. This will take time, but we will, of course, move in this direction.

Certainly, Sevastopol is a city of Russian naval glory, which every Russian citizen knows. We will be guided by this understanding.

Dmitry Kaistro: Indeed, so many different people live in Sevastopol, people from different walks of life, with different backgrounds and of different ethnicities. And the tragedy that is now happening in Ukraine has upset too many people. Sevastopol residents talk about this too.

So I would like to give you the floor as I can see you have questions. You can address one of them to the President.

Question: Good afternoon Mr Putin. Ukraine is currently in a situation where there is a divide within families, not just between nations. I live in Sevastopol, while my sisters live in Ukraine. This is relevant for many Crimean families. Given the current state of affairs in Ukraine, we do not understand each other on many issues and have even become enemies. How can we remain friendly and brotherly nations?

Vladimir Putin: Make no mistake, this issue is highly relevant, and all of us are now guided by certain emotions. However, if we love and respect each other, we should find ways and means to understand each other. I think that it should be easier for a family than for a nation. But even if we are talking about relations between countries, I'm confident that we'll find common ground with Ukraine and we'll be there for one another. I hope that people in Ukraine will also understand that Russia could not do otherwise regarding Crimea.

There's another issue I wanted to raise. I think it'll be a recurrent one during today's conversation. What I wanted to say is that if we respect each other, we should

acknowledge that each of us has the right to make our own choices. People living in Ukraine should respect the choice made by Crimean residents. This is the first thing.

Second, Russia has always been close to Ukraine and will always remain closely related to it. I'm not talking about the assistance that Russia has been providing to Ukraine for many long years, and I'm sure that we'll get back to that issue. This assistance adds up to hundreds of billions of dollars. But this is not the point. The point is that we have extensive common interests. If we want to succeed, we must cooperate and join efforts. I'm confident that we will understand this despite all the emotional complications we're seeing today.

Maria Sittel: Another question from Sevastopol, please.

Nikolai Dolgachyov: It is highly symbolic that people from across Crimea joined us here in Sevastopol. Many of them view reunification with Russia as the end of the third siege of this Hero City. There were two historic sieges, one lasted 349 days during the Crimean War, and the other lasted for 250 days during the Great Patriotic War. Many people regard the last 23 years as the third siege of the city and the whole region. Now that Crimea's dream of reunification has been fulfilled, there are naturally a lot of questions regarding the future. Let's find out what questions local residents have.

Yevgeny Kostylev: I would like to start by thanking you, Mr President, on behalf of all the people of Crimea, for the resolve you showed in helping us reunite with our motherland. We can now proudly call ourselves Russian citizens.

That said, the self-proclaimed Ukrainian government is doing its utmost to make life intolerable for the people of Crimea. For example, almost all banks have left Crimea, which means that we now have problems with exchanging hryvnas and people can't make payments and transfers. Specifically, pensioners, who have been saving for many years for a rainy day, can't withdraw their pension savings because Ukrainian banks are ignoring their requests and legitimate interests.

Mr President, my question is the following: How does the Russian Government intend to resolve this issue?

Vladimir Putin: This is currently one of the most urgent issues that has yet to be addressed. There are other issues as well, as you know, such as power and water supply. However, the problems with banking have not been fully resolved. We will seek to reach common ground with our Ukrainian partners. These efforts have so far been unsuccessful. Oschadbank and Privatbank with its owner Mr Kolomoisky and the head of the Crimean branch Mr Finkelstein are not willing to meet us halfway. Hryvna circulation is limited, so we have no other choice but to accelerate the transition to the ruble. The solution is to open accounts for individuals and legal entities and establish a new banking network. Doing this the right way takes time. I think that it will take us about one month to open the required number of accounts, roll out the network and equip it with modern technology.

You have also mentioned pensioners and public sector employees. I'm also aware of certain economic setbacks, but it will all pass. We'll overcome all challenges.

As you know, pensioners and public sector employees will have equal incomes with Russian pensioners and public sector employees, and the Russian Government has already adopted a resolution to this effect. In order to prevent any sharp increases in the inflation rate and prices, which is happening in Crimea anyway, we decided to enforce this on a step-by-step basis in four stages: incomes of Crimean pensioners and public sector employees are to rise by 25% from April 1, by another 25% from May 1, and then another 25% on June 1 and 25% more on July 1. During this period incomes of pensioners and public sector employees will surge. For pensioners, income will soar 100%, which means that the gap between pensions in Russian and Crimea... In Russia, pensioners receive twice as much as in Crimea. The average pension in Russia will be 11,600 rubles this year, while in Crimea it is about 5,500 rubles. The same goes for public sector employees, who earn twice or even two and a half times more in Russia. Russian military personnel – and it should be mentioned that a lot of local residents will be serving in Crimea – earn four times as much as in Crimea.

All in all, I'm confident, I hope and believe that people in Crimea will feel the economic benefits of joining Russia, not to mention Crimea's economy, infrastructure development in the tourism and travel industries. We'll get back to those issues.

Maria Sittel: Mr President, Sevastopol mothers are asking for some details. For example, there is a question from Elizaveta Maslennikova: “Will a mother in Crimea or Sevastopol expecting her second child be entitled to maternity capital?”

Vladimir Putin: Of course. We believe that all benefits and preferences that were available to Crimean residents in Ukraine should remain in place. If some programmes do not exist or didn't exist in Russia, we will keep those preferences in place by providing additional subsidies to the regional budget. Furthermore, residents of Crimea and Sevastopol will be able to benefit from all social norms and allocations that exist in Russia in accordance with applicable laws.

Maria Sittel: Thank you.

Maria Sittel: Sevastopol, one more question from you, please.

Nikolai Dolgachyov: There are a lot of people here. Please introduce yourself and ask your question.

Question: Mr Putin, it is widely believed that Crimea is only good for vacationing and tourism. But what about our industry and agriculture? What steps will Russia take to develop all Crimea's industries?

Another question: You promised to establish a free economic zone in Crimea. What will this mean for the average person?

Vladimir Putin: You are absolutely right that Crimea is associated with vacationing and tourism. But this isn't the whole story. Crimea has very good industrial and agricultural potential and we'll develop it. What does this consist of? There are viable businesses that require modernisation and additional investment, and we'll certainly take care of that. I've mentioned shipbuilding and ship maintenance, but there are also other industrial centres and promising businesses. The infrastructure has fairly good development potential, including the port; there is an agricultural sector, and so on. Regrettably, agricultural output declined by 60 percent in 2013 in comparison to 1990. In 2013, Crimean agricultural enterprises produced only 40% of what had been their output in 1990. The agricultural sector also needs additional investment. There are many

issues to be addressed. Rice farms, for example, use a lot of water, and water is currently a problem. This takes time and investment. We'll take care of this as well. Regarding services, we shouldn't forget that Crimea was always famous not only as a base for the Russian Black Sea Fleet but also as Russia's and the USSR's top health resort. We'll develop this area as well. Regrettably, the holiday infrastructure, hotels and resorts have been decaying. Our specialists have inspected these businesses, recreation facilities, resorts and hotels, and have come to the conclusion that some of these, if not all, can't be used under Russian sanitary and epidemiological standards.

When they asked how former vacationers could have put up with this sort of quality, they heard this odd – and shameful – answer: “It's OK, we mostly had miners as guests here; it made no difference to them; they'd down half a glass of vodka and go to the beach.” But we can't take this approach with Russian vacationers. This area will require additional investment as well. The free economic zone you mentioned is something that can provide Russian investors with certain privileges in order to encourage them to come to Crimea and Sevastopol and accelerate development.

Many local people have proposals of their own. I talked to Mr Alexei Chaly not too long ago and he suggested that we establish a development agency. We'll certainly support this idea. I'm confident we're on the right track and sure to achieve some positive and visible results.

Maria Sittel: Mr Putin, there is a fly in the ointment though. There are many SMS messages from people who are apprehensive that Crimea might lose its distinctiveness. They fear the arrival of big money, people who will put up hunting lodges and big castles, palaces and high fences where there used to be recreation areas and nature reserves, while neglecting to build a sewage system, which Crimea lacks to this day.

Vladimir Putin: There are enough castles and high fences there now. We've come face to face with this problem – regrettably. These palaces with fences mushroomed all over the place against the background of an astounding disregard for average holidaymakers. And the owners were the oligarchs or CEOs I mentioned earlier. All of this involved major violations of environmental legislation. I talked to Crimean leaders and the heads of Russia's federal agencies today: we must do our best to approve timely decisions that end these development practices.

Maria Sittel: We have a text message on our programme's website: "Who were these young men, after all? They looked a lot like Russians."

Vladimir Putin: What young men?

Maria Sittel: Those polite young men.

Kirill Kleymenov: The "little green men."

Vladimir Putin: I have already spoken about this publicly on several occasions, perhaps not loud enough. However, in my conversations with my foreign colleagues I did not hide the fact that our goal was to ensure proper conditions for the people of Crimea to be able to freely express their will. And so we had to take the necessary measures in order to prevent the situation in Crimea unfolding the way it is now unfolding in southeastern Ukraine. We didn't want any tanks, any nationalist combat units or people with extreme views armed with automatic weapons. Of course, the Russian servicemen did back the Crimean self-defence forces. They acted in a civil but a decisive and professional manner, as I've already said.

It was impossible to hold an open, honest, and dignified referendum and help people express their opinion in any other way. Still, bear in mind that there were more than 20,000 well-armed soldiers stationed in Crimea. In addition, there were 38 S-300 missile launchers, weapons depots and rounds of ammunition. It was imperative to prevent even the possibility of someone using these weapons against civilians.

Maria Sittel: After Sevastopol, let's bring in Russian Black Sea Fleet Commander Alexander Vitko. He's in the sector covered by Dmitry Shchugorev.

Dmitry Shchugorev: Mr Vitko, please go ahead with your question.

Alexander Vitko: Comrade Commander-in-Chief, Black Sea Fleet Commander Vice Admiral Alexander Vitko.

Vladimir Putin: Where's the commander's commanding voice?

Alexander Vitko: Before I ask my question, I'd like to take this opportunity to thank the Russian people and you personally, Comrade Commander-in-Chief, for the support provided to our fleet during that difficult period in Crimea.

Here's my question. There were no major investments in Crimea's military infrastructure over the past 23 years. It is in poor condition, to put it mildly. The housing situation is particularly difficult, especially for former servicemen of the Ukrainian Navy who are now enlisted in the Black Sea Fleet.

Comrade Commander-in-Chief, the results of your projects have become the pride of the Russian people. Will there be a presidential programme or a federal targeted programme for the Crimean troops similar to the programmes for the submarine base in Vilyuchinsk or Geoporta in Novorossiysk? Thank you.

Vladimir Putin: First, there will be a programme for the development of the Sevastopol Naval Base and the Black Sea Fleet in general. Of course, all social programmes that are implemented in the Russian Armed Forces, including permanent and service housing, will apply to the City of Sevastopol and the Black Sea Fleet.

Kirill Kleymenov: Mr Putin, in your previous answer you mentioned Crimea's self-defence forces. I can see several representatives of these forces in this studio. The officers of the Crimean Berkut and, of course, the Cossacks were the key players. There were many intense and dramatic moments, such as in Perekop where the Berkut was just a few hours quicker than the extremists who were bussed to Crimea, and this helped avoid a major tragedy.

Kirill Kleymenov: I would like to ask my colleague Valeriya Korableva to give the floor to commander of Crimea's Berkut riot police Yury Abisov. Go ahead, please.

Valeriya Korableva: Yes, let me say just a few words. Mr Abisov's troops, as well as other regional Berkut units, stayed in Kiev during the most difficult time. At some point, they simply stopped receiving any orders. In other words, they were essentially abandoned. Colonel Abisov told me how they had to make decisions on their own, withdrew their soldiers under fire, took the wounded from hospitals and transported them to permanent garrisons – all that while their vehicles were being fired at.

Yury Abisov: Good afternoon.

Mr President, here's what I'd like to say. Our squad was in Kiev when the Maidan took power from Yanukovych. They burned us, threw stones and opened fire at us. Dozens of fighters were killed, hundreds were wounded, but we had an order not to shed blood. After that we were betrayed.

I have a question. You have known Mr Yanukovych for a long time, [you knew him] when he was President. Has he always been such a wimp and a turncoat? Thank you.

Vladimir Putin: You know, there is a Russian saying: "Heavy lies the crown." The burden of responsibility on the shoulders of a head of state, whether large or small, is great. In critical moments, one relies on his or her own personal experience and moral values.

As for Mr Yanukovych, he fulfilled his duty in the way he considered possible and appropriate. Certainly, I spoke with him many times during the crisis and after he arrived in the Russian Federation. We talked about the possibility of using force, among other things. There can be different attitudes to this, but the essence of his answer was that he thought of using force many times but he said that he did not have the heart to sign the order to use force against his citizens.

As far as the Berkut is concerned, you and your colleagues undoubtedly fulfilled your duty honestly, professionally and honourably. This evokes respect for you and all your soldiers. After all, what happened to you and the way your colleagues are treated now in Kiev will come back to bite the Ukrainian state. You can't humiliate the soldiers who protect the state's interests, or force them to their knees, or malign them, or deprive them of medical assistance when they are in hospital. I know that Berkut officers who are in hospital do not receive proper treatment or even food.

Our numerous appeals to the Kiev authorities to allow us to take everyone in have gone unanswered. If a state treats people who honestly fulfil their duty like this, such a state can hardly count on others to behave similarly in the future.

Actually, this is what we are seeing now. I think that eventually everyone will realise how professionally and honourably you executed your order, and they will thank you for it.

Kirill Kleymenov: Many of the callers point to historical allusions in the Ukrainian events. Valery Klimov from the Sverdlovsk Region described a concrete situation: “President of Chile Salvador Allende died fighting for his country, while the President of Ukraine fled his country. Would you fight to the bitter end for your country’s independence?”

Vladimir Putin: First, I don’t agree that Yanukovich fled. He had to leave, but he did not flee from Kiev; he was on a regional trip while the presidential administration and government buildings were taken over in Kiev in breach of a signed agreement.

When Yanukovich signed the agreement on February 21, which was guaranteed by three European foreign ministers from Poland, France and Germany, he believed that this agreement would be honoured. Under it, Yanukovich pledged not to use the army or other armed force against protesters and to pull the Interior Ministry units, including the Berkut, out of Kiev, while the opposition was to withdraw from the occupied administrative buildings, dismantle the barricades and disarm its fighters. Yanukovich agreed to hold early parliamentary elections, to return to the 2004 constitution and to hold presidential elections in December 2014. Had they wanted it, he would have agreed to hold presidential elections in a month or a month and a half, because he was ready to agree to anything. But as soon as he left Kiev and pulled the Interior Ministry units out of the city, the opposition renewed its attacks, seizing the presidential administration building, among other government buildings and accomplishing a coup d’état in the full and classical meaning of the word. No one can say why they did it, why they acted so unprofessionally and unwisely, and why they pushed the country towards the current situation. There is no answer.

As for me, you know that the decisions we take in a critical situation depend on our experience and values. You know that I worked for the Soviet Union’s KGB, or, more precisely, foreign intelligence, where we were trained in a specific manner that boils down to absolute loyalty to people and the country.

Maria Sittel: Clearly, the Ukrainian issue, the unconstitutional seizure of power and Crimea are the number one issues currently discussed. In Russian society, this topic has provoked heated debates. According to a poll, some 96 percent of Russians think your decision on Crimea was right. But there are those who do not agree.

Today we have representatives of both sides in this studio. Those who spoke in favour of it are Yury Bashmet, Denis Matsuyev and Karen Shakhnazarov. I suggest we give the floor to the people who are present here today.

Tatyana Stolyarova: Yes, it's true. Let me remind you about a letter from Russian cultural figures who supported Vladimir Putin and Russia's stance on Crimea. As of now, the letter has been signed by over 500 people. The letter received a strong public response.

Karen Shakhnazarov is here today in this studio. You signed the letter. How would you explain your view?

Karen Shakhnazarov: It was obvious to me, and I said so repeatedly. I have two reasons. The first reason is personal. Maybe it is not important to someone else, but it is to me. My late father was one of the soldiers who liberated Crimea. He was 20 at the time. He was a reconnaissance commander in an artillery brigade. He participated in the storm of Sevastopol. By the way, he was an ethnic Armenian. Neither he nor his comrades had any doubt that it was a Russian city. So he would not have understood me at all if I had taken any other stance.

The second reason is probably more important. In the circumstances when, as I see it, the Ukrainian statehood ceased to exist, there was no reason to deprive the people of Crimea of the right to determine their fate. Speaking of which, Mr Putin said that the Ukrainian parliament is partially legitimate. I don't really agree with that because how can a parliament be legitimate if it abrogated its own constitution? I personally think there is no legitimate power in Ukraine now.

Therefore, the people of Crimea had every right to determine their destiny. Of course, I understand that it was a difficult decision which has many international and political implications.

So I have a question for you, Mr Putin. In the past 10 years, we have been forging ties with the People's Republic of China, and I can see that the convergence is mutual. In this situation, is it possible to formalise this partnership as a military and political union?

Vladimir Putin: First of all, thank you for your stance on Crimea and your support.

Speaking of our relations with China, they are progressing very successfully in terms of trust and collaboration, which are unprecedented. This includes political cooperation and our shared views on international affairs and global security, which is the basis for these inter-governmental relations. We are neighbours and allies as well, in a sense. We have not raised the question of a military and political union.

Generally, I think that the bloc mentality is a thing of the past. NATO was established as a counterbalance to the Soviet Union and to the Soviet Union's policy in Eastern Europe. The Warsaw Pact was signed in response. The Soviet Union ceased to exist, but NATO remains. We are told it is changing and becoming more of a political organisation. But Article 5 is still in effect, which is an article on mutual military support. Who does NATO act against? Why is it expanding towards our borders?

Are there plans to establish new blocs? I don't know; we haven't thought about this. But it is absolutely clear that we will be expanding collaboration with China. Our trade with the United States is 27.5 [billion], but trade with China is 87 billion, and it is growing. And experts will agree that China is gradually becoming the number one economic power. The question is when it will happen: in 15, 20 or 25 years. But everybody understands that it is inevitable.

With China's population of almost 1.5 billion and its modernised economy, this is basically an accomplished fact. Therefore, we will certainly continue to develop relations with China. We have never had such trust-based relations in the military industry. We began holding joint drills at sea and on land, in both China and the Russian Federation. This gives us reason to assume that Russian-Chinese relations will be a significant factor in global policy and will substantially influence modern international relations.

Maria Sittel: Mr President, let us return to the open letter signed by prominent Russian cultural figures. What do you think of open letters in general, and of this particular situation personally, which sounds very much like a question from old Soviet times: artists, where do your loyalties lie?

Vladimir Putin: Let me repeat how much I appreciate everyone's support for my policies on Crimea as well as on other issues. As for making public statements, I think this should be up to them. Take, for instance, Mr [Karen] Shakhnazarov – I have known him for years,

but frankly had no idea about his political views. So it came as a big surprise to me when he spelled out our common stance on some issues so clearly, definitively and eloquently, and much more vividly than I ever do.

About collective letters – well I think they do no harm, but I would rather they not be orchestrated. I mean these things should speak from the heart and be spontaneous, rather than coolly organised by someone. This is something I do not support and never will.

Kirill Kleymenov: Let us return to the on-going public debate on Crimea and Sevastopol's accession to Russia. I see here in this studio Andrei Norkin, a well-know journalist and my colleague from 20 years ago. His statements on the issue could not pass unnoticed.

Olga, please.

Olga Ushakova: Yes. Andrei Norkin, journalist, Kommersant FM radio host.

Mr Norkin, I would like to ask you the following: you are known for your independent positions on various issues, but this time you spoke out in support of the Russian government's actions in Crimea, causing a landslide of criticism from your colleagues. Why do you think your opinion is opposed this time around by the very people who have always shared your views?

Andrei Norkin: I would not say this is just about Crimea; the criticism largely came after the Dozhd TV channel events. You know that geopolitical issues are not even my biggest concern with Ukraine. I am more worried about how these events are being discussed in Russia, and what I hear is yet further proof that the problem I first encountered several years ago is still there. I am very much alarmed by the distorted world outlook many young people are developing.

Since I do not only work as a journalist, but also teach journalism, I can tell you that it takes a lot of effort to convince my future colleagues that, for example, the word patriot is not synonymous with idiot, or that Victory Day is not a "Colorado beetle celebration," as it is trendy to call it on social networks. Being trendy is crucial to them, because

for teenagers, for adolescents, being part of a trend – complying with the standards accepted in their community – is extremely important. The Government seems to have abstained from addressing these trends, so to love our motherland just isn't trendy these days.

Mr President, you have mentioned how you were raised and educated. As I was walking to this meeting, I thought I would talk about this, but the fact that our discussion naturally turned this way based on the events in Ukraine further convinces me that I am right. I have four children; two of them – a daughter and a son – are adults, and the other two are still in school. So I must say that schools have fully delegated the functions of upbringing to parents. But parents cannot be with their children all the time. So with my younger boys, I spent a lot of time trying to find a solution to this problem. Finally, I enrolled the older of them in a cadet school in a neighbouring town, and the youngest will go there as well. This school respects historical traditions. All teachers are military people or, at least liable for service, most of them men. So cadets not only receive a more profound education – there are five people in each class, not 35 – but they receive a different kind of guidance. They are taught to love their motherland and its history, to respect women and seniors and peers, and not to be afraid of physical work and pain. They are brought up to be men – honest, decent, honourable citizens of their country, the best part of its human reserve. The problem is, such schools are few – if I remember correctly, there are about 15 in Moscow and Moscow Region.

Therefore, my question is – do you think it would be a good idea to create legislation about this format of education, cadet schools? I know that these things are not done overnight, but is it possible to set up, say, regional funds that would provide financial assistance to families who want to send their children to cadet schools? This I think could make it trendy again to love our motherland.

Vladimir Putin: Firstly, about your statement that it is not trendy to love our motherland – you must be talking about some specific group of young people you deal with.

Andrei Norkin: Well I mentioned my journalistic experience.

Vladimir Putin: Look at how the events in Crimea and Sevastopol shook society. It turned out that patriotism is still out there, somewhere, only we are not always aware of it. Yet, it

is an integral part of our people, part of our identity. On the other hand, it speaks well that you, a journalist, are alarmed to see this lack of love for the motherland or patriotism as an old-fashioned value. If this troubles you, it means you have this deep inside, and that's why you have sent your son to a cadet school.

Do we need to adopt a special law on this? We'll have to look at the legal framework for education that we have. I agree with you that this is a step in the right direction, but we'll have to think if we need to add a new law. I am not ready to say anything right now. But I promise that we'll give it a look and it is definitely a good idea to further develop this form of education. You are right. Your family is well-off, and you sent your son to that school. But it is even more important for families who have problems, such as loss of breadwinner – especially if the father was a military serviceman – to raise their children and teach them the right attitudes. We'll certainly look at this again, also from the financial perspective. By the way we are planning to establish more schools in Crimea, including cadet schools. Thank you.

Maria Sittel: Mr Putin, as you probably know, those who disagree with you are speaking out loudly using various platforms. Some have taken a very aggressive stand, asking the West to teach Russia a bloody lesson...

Vladimir Putin: Bloody? Is that so?

Maria Sittel: Yes. There are people who are openly calling for our soldiers to be fired upon, while others publish lists of Russians who should be sanctioned in US newspapers.

Vladimir Putin: That's true.

Maria Sittel: This is to say that there are differing views. And today there are people who hold such views here in the studio. Let's give the floor to Tatyana Stolyarova's section so that they can express their views.

Tatyana Stolyarova: I would like to remind you that those who have spoken out against Russia's position on Crimea are an absolute minority. The opinion polls have already been mentioned today. That said, there are high-profile people, politicians, musicians and actors among them and their voices are heard.

Here with us today is Irina Khakamada. What's your opinion?

The question is ...

Vladimir Putin: Ira, are you really against our position on Crimea? Why has this label been pinned on you?

Tatyana Stolyarova: We would like to hear your perspective on why this dispute has emerged in Russian society?

Irina Khakamada: Mr Putin, this is not the first time that I've been labelled, so don't worry. By the way, this is a sign that we need to put an end to the information warfare. You simply can't keep using such stereotypes to label people who are trying to oppose you in an intelligent way.

What I wanted to say is that Crimea has always aspired to a Russian identity. I have visited Crimea on numerous occasions. Even during the years of relative calm, when the "blue" were replaced by the "orange" and vice-versa, nobody actually touched Crimea, but its residents have always sought to be part of Russia. Whatever happened, happened. In any case, you are the winner. You conducted a stunning operation without a single shot being fired. I would like to congratulate you on honestly acknowledging that the "green men" were Russian military who protected the Russians in a peaceful manner. It is very important to state such things in public so that there is no speculation. As the winner, you've done even more to seek compromise. Today, for the first time your representative, the Foreign Minister, is meeting with and talking to representative of the Ukrainian authorities, or whatever you want to call them, but they are the only counterpart available to discuss peace. Time magazine has named you the most influential politician in the world.

I don't think that we started this war. But only those who won the war without starting it can put an end to it. The sooner it happens, the better, since ordinary people will soon feel, even in Crimea, that their lives depend greatly on what's happening in Ukraine. Ordinary people are suffering and feeling the consequences of having to fight against their own people. I believe that everything now depends on you, on Russia. Now is the crucial

moment. I'm telling you this as a former politician, I have a sense of when the time is right politically.

My question is the following. Europe has been left by the wayside. It has never solved any problems. Europe doesn't like solving problems because it has grown used to living in peace. The dialogue is between Russia and the United States. The US is ready to pay one billion dollars to ensure that the elections are held on May 25. Russia insists on a referendum or regionalisation, or convening a constitutional assembly to draft a new Ukrainian constitution and holding elections only after that.

It is my firm belief that the war will engulf the entire post-Soviet space if both parties continue to insist on their positions. No one needs this – not Russians, the people of Crimea, which is now part of Russia, Ukrainians, or the east of Ukraine.

The regionalisation of Ukraine is a compromise, which means providing the eastern and southern regions of Ukraine with the ability to speak Russian, elect local governments and live in peace. At the same time, there is an understanding that elections should be held as soon as possible to calm tensions. In your opinion, could Russia put forward a proposal that would facilitate a compromise with the US? So that elections are held on May 25, while at the same time all guaranteeing parties agree before May 25 on the future regionalisation of Ukraine through negotiations or any other diplomatic means.

Vladimir Putin: Is there a possibility of Russia reaching a compromise with the US on Ukraine? A compromise should be reached by the various political forces in Ukraine, not third parties. This is actually the key issue here. We can only support and accompany this process.

Regarding the question of what should come first: a constitutional referendum followed by elections, or elections first to stabilise the situation and then a referendum.

The essential issue is how to ensure the legitimate rights and interests of ethnic Russians and Russian speakers in the southeast of Ukraine. I would like to remind you that what was called Novorossiia (New Russia) back in the tsarist days – Kharkov, Lugansk, Donetsk, Kherson, Nikolayev and Odessa – were not part of Ukraine back then. These territories were given to Ukraine in the 1920s by the Soviet government. Why? Who knows. They were won by Potyomkin and Catherine the Great in a series of well-known

wars. The centre of that territory was Novorossiysk, so the region is called Novorossiya. Russia lost these territories for various reasons, but the people remained.

Today, they live in Ukraine, and they should be full citizens of their country. That's what this is all about. The issue is not whether the referendum on decentralisation or federalisation is followed by elections or the elections come before the architecture of the state is changed. The key issue is providing guarantees to these people. Our role is to facilitate a solution in Ukraine, to ensure that there are guarantees. People from southeast Ukraine will ask you, will ask us and the current authorities in Kiev: "Fine, the elections will be held on May 25, but do you want us to recognise their outcome? You'll forget your promises the very next day and send new oligarchs to Donetsk, Kharkov, Lugansk, and so on. What about guarantees? We need answers." I hope that an answer will be found.

Kirill Kleymenov: I suggest that we turn it over to another woman with a bold position. We have Irina Prokhorova in our studio.

Valeriya Korableva: Irina Prokhorova, the leader of the Civic Platform party and editor-in-chief of the New Literary Review magazine.

Irina Prokhorova: Good afternoon, Mr President.

You know, I'll give it a light cultural twist, although it will still concern Crimea. Remember, when Gerard Depardieu was trying to obtain Russian citizenship, he confessed his love for Russia, referring to Russia mostly as a country of great culture. Lately, and the Crimean events have triggered this, we see that not only the budget to support culture and education has been steadily declining, but cultural figures who express a somewhat different position are being persecuted as well. We are witnessing the early stages of persecution of contemporary art, which is being blamed for all imaginable and unimaginable sins. Laws are being drafted that actually reduce culture to the level of a servant of ideology. We've been there, and it has always been a terrible blow not only to culture and education in the narrow sense of the word, but it had sad consequences for society as well. I believe that this internal division that is being carried out by society itself when people voicing other positions are denied the right to be called patriots or people who care about their country is profoundly unfair. After all, you admitted that

the decision regarding Crimea was difficult. It was not a celebratory decision, but a necessary step. Thus, the fears of the people who are concerned about the ensuing complications for their own country are quite understandable.

Don't you think that this internal bitterness in society which, unfortunately, is frequently fuelled by politicians, in particular, members of parliament, who love to flaunt lofty words, undermines the foundations of our truly multi-ethnic culture? Won't Russia lose its status of a great cultural power if things keep going down that road?

Vladimir Putin: Thank you for your question.

Frankly, I do not see any particular changes with this situation. Nothing that would stand out even in connection with the events in Crimea and Sevastopol. Admittedly, there is a conflict of motives and viewpoints, but no one is preventing anyone to state them. No one is being arrested, put behind bars or sent to labour camps as in 1937. People who express their opinions are, thank God, alive, in good health and engage in their professional activities. However, some members of the Russian intelligentsia are unaccustomed to the fact that they might meet resistance or have someone else express a different position and disagree with their position. Some people believe that whatever they say is the ultimate truth, and there's no way that things can be any different, so when they get something in response, it causes a strong emotional reaction.

With regard to the situation in Crimea in recent months, I heard and read that some want their country to lose and think that this is a good thing. Here, too, there is certain continuity. As is known, during the First World War the Bolsheviks also wanted the Russian government and Russia in general to lose and the situation quickly got out of hand, which led to the revolution. There is some sort of historical continuity here, not the best, though. However, I agree that in any case we should not slip into some extreme forms of dealing with each other's views or cast aspersions on people for their opinions. I will do my best to prevent this from happening.

Kirill Kleymenov: We have been on the air for just over an hour now. Let's take some phone calls. Our colleague, Tatyana Remezova, is at the call centre, which also receives text messages. Tatyana, please, go ahead.

Tatyana Remezova: Thank you, colleagues. We have received a huge number of calls about Ukraine. People are calling from Ukraine and also from Crimea and other Russian regions that border Ukraine. But not only from there. People are calling from all of Russia. Here is a call from the village of Pivovarikha, in Irkutsk Region.

Roman Kuznetsov, good afternoon. You're on the air.

Roman Kuznetsov: Good afternoon, Mr Putin. My name is Roman.

Vladimir Putin: Hello, Roman.

Roman Kuznetsov: Are you planning to send a limited contingent of troops to southeastern Ukraine to protect its Russian-speaking population? Thank you.

Vladimir Putin: You know, despite the events in Crimea, we should not lose our heads, but should proceed from realities. What are these realities today? First, we must admit that the ethnic composition of Crimea differs from that of southeastern Ukraine. These territories, as I just said, were transferred to Ukraine in the mid-1920s, and in 1954, Crimea was annexed to Ukraine for some reason as well.

The ethnic composition of the population there is approximately 50–50. I have already mentioned that the final decision to return Crimea to the Russian Federation was only based on the results of the referendum. When I saw these results, and saw for myself that almost all residents voted for joining Russia, I repeat, we had no other choice and there could have been no other decision.

As for what is happening in southeastern Ukraine, we don't know for sure. But we believe that we ought to do everything we can to help these people defend their rights and determine their fate on their own. This is what we will fight for. Let me remind you that the Federation Council of Russia gave the President the right to use the Armed Forces in Ukraine. I very much hope that I will not have to exercise this right and that, through political and diplomatic means, we will be able to resolve all the pressing, if not to say burning, issues in Ukraine.

Maria Sittel: Mr President, there is a difficult situation right now not only in the southeastern regions of Ukraine, but also in Transnistria. It is blocked by Moldova on one side and by the newly self-proclaimed Kiev authorities on the other. Here's a text message: "What are ways to resolve the current situation in Transnistria and what is Russia's stance on it?" I would like to recall that just yesterday its parliament asked Russia to recognise the republic's independence.

Vladimir Putin: This is one of the most complex problems that we inherited after the collapse of the Soviet Union. First of all, the population of the republic is over 500,000 people, if I'm not mistaken. People there express pro-Russian sentiments and a large number of Russian citizens live in Transnistria. They have their own views on how to build their future and their fate. It would be nothing more than a display of democracy if we were to allow those people do as they wish. Of course, we need to maintain dialogue with both Moldova and Ukraine, to boost talks within the 5+2 format, which includes Moldova, Transnistria and five other states that are taking part in the settlement process. I think that the blockade should be lifted without delay; the residents of the republic are feeling its negative consequences both on the part of Moldova and Ukraine. Nationalist armed groups have already gathered on the border between Transnistria and Ukraine; such developments must be stopped without delay. In the long run, people should be allowed to decide their own destiny. This is what we and our partners are going to work on, taking into account the interests of the residents of Transnistria, of course.

Maria Sittel: Tatyana, over to you.

Tatyana Remezova: Mr President, there was a caller with another very interesting question. I will read the message: "Russia has annexed Crimea by force. Does that mean that power is the only guarantee of a state's sovereignty these days?"

Vladimir Putin: Russia did not annex Crimea by force. Russia created conditions – with the help of special armed groups and the Armed Forces, I will say it straight – but only for the free expression of the will of the people living in Crimea and Sevastopol. It was the people themselves who made this decision. Russia answered their call and welcomed the decision of Crimea and Sevastopol. This was natural, and it could not have been any other way.

As for the power factor in international relations, it has always existed and will always exist. That's a different issue, and the thing is that countries, taking into account that power plays a significant role in international affairs, should develop and strengthen, based on their common sense, such rules of conduct which would be stable and would allow for negotiating, compromising and balancing the interests of a state and its people on the international arena without using this power.

The events in Crimea themselves have nothing to do with this. Let's recall what happened in Iraq, Afghanistan, Libya and other regions. In my opinion, when the world becomes unipolar, or when someone tries to make it so, then this one pole has the illusion that all issues can be settled through power. And only when there is a balance of power does the desire to negotiate appear. I hope that we will be moving along the path to strengthen international law.

Maria Sittel: Thank you.

Maria Sittel: Mr Putin, just a few minutes for our new format – video questions. Anna Pavlova, please.

Anna Pavlova: Thank you. Our video centre is receiving a lot of questions on the Ukrainian crisis as well; many people are concerned about our future relations with our neighbours, given the latest events. To continue, let's watch a video question sent by Sergei Lukas from St Petersburg.

Sergei Lukas: Mr Putin, who stands to profit from the overblown myth that Russia's Armed Forces are preparing for an invasion in Ukraine? What goals are pursued by those who want to set us against our brothers, neighbours and European partners? And can we openly invite all those willing to visit our cross-border regions? Thank you.

Vladimir Putin: The intention to split Russia and Ukraine, to separate what is essentially a single nation in many ways, has been an issue of international politics for centuries. If you recall the statements uttered by the White movement leaders, you'll see that regardless their political disagreements with the Bolsheviks, they never had even the slightest thought about a possible division between Ukraine and Russia, as they

always perceived them as part of a common, united space and a single nation. And they were absolutely right.

But today we're living in separate countries. And, unfortunately, this policy of division, of pulling apart and weakening both parts of a single nation continues. There are enough forces in the world that are afraid of our strength, "our hugeness," as one of our sovereigns said. So, they seek to divide us into parts, this is a well-known fact. Look at what they did with Yugoslavia: they cut it into small pieces and are now manipulating everything that can be manipulated there, which is almost anything. Apparently, someone would like to do the same with us, and if you look at what's happening, you'll be able to answer your own question about who is doing what.

Maria Sittel: Mr President, there are millions of ethnic Russians living in Ukraine. After the events in Crimea, the new authorities regard them as outcasts. Ms Tymoshenko even urged her supporters to take up arms and deal with them.

Kirill Kleymyonov: The "damned Russians."

Maria Sittel: Yes, exactly. There are many utterances of this sort and a huge number – actually the majority – of questions about the fate of ethnic Russians in Ukraine.

Let us give the floor to Mr Lukyanenko, a writer, who has a question on this topic.

Dmitry Shchugorev: Sergei Lukyanenko is a well-known writer, who denounced Ukraine as a damned land after the bloodletting on the Maidan in February, which no one wants to investigate, and responded to his Ukrainian colleagues' reproaches by banning his books from being translated and published in Ukraine.

What is your question, Mr Lukyanenko?

Sergei Lukyanenko: Mr President, Ukraine has developed as a state hostile to Russia for 23 years...

Vladimir Putin: I beg your pardon?

Sergei Lukyanenko: I say that Ukraine has developed as a state hostile to Russia for the last 23 years. There was even a saying to this effect: “Ukraine is not Russia.” The most horrible thing is that these seeds have borne fruit. We see what is happening: the country is being plunged into nationalist, if not fascist, hysteria. The authorities are sending army units and punitive squads to southeastern Ukraine. And the most glaring thing, as I see it, is that Russia’s position is being ignored by the West and hushed up in Ukraine.

How, in your opinion, can we bring our point of view across? And is this even possible? Can we convince the West to listen to us and understand us? Sometimes I have the impression that we are unable to get through to them.

Vladimir Putin: You know, Sergei (may I call you Sergei?), I don’t agree with you. I know you as one of the best modern writers – a widely read and widely published one. But I can’t agree that Ukraine is a damned land; please don’t use this expression with regard to Ukraine. Ukraine is a long-suffering land; it’s a very complicated community and a long-suffering one in the direct sense of the word. Nationalism and even neo-Nazism are experiencing a resurgence in western Ukraine. But you know well the history of this territory and its people. Some of these territories were part of Czechoslovakia, some of Hungary, some of Austro-Hungary and some of Poland, where they were never full-fledged citizens. You know, something has always been growing in their heart of hearts.

Some people seem to believe that it is this circumstance – because these territories were former possessions of several present-day EU countries – that imbues them with some special European substance. That they were second-rate citizens in those states seems to have been forgotten, but this still lurks in their historical memory, under the crust, deep down in their hearts, see? It’s where their nationalism comes from, I think.

Central, eastern and southeastern Ukraine is another matter. I’ve just mentioned this area, New Russia, which has intertwined its roots with those of the Russian state. The local people have a somewhat different mentality. They found themselves part of present-day Ukraine, which had been pieced together in the Soviet period. Of course, it is difficult for them to establish proper relations and to understand each other. But we should help them to do so as much as we can.

What, under the circumstances, is our role, the role of a good neighbour and the closest relative? Will our overseas partners and partners in Europe hear us? I hope they will. But at the same time – I have just said as much – there are certain apprehensions with regard to Russia itself, its huge territory, its potential growth and power. This is why they prefer to cut us to size and take us to pieces. Will our partners hear us in this case? I've just said what they are largely being guided by, but I think they should hear us, because in the burgeoning modern world, keeping in mind its development trends in the short historical term and in the longer historical term, this world, the whole of Europe, as I said, from Lisbon to Vladivostok, should unite to be competitive and viable in the rapidly developing world. This is an extremely important circumstance. I hope that our partners will hear and understand us.

Kirill Kleymenov: Mr Putin, the questions about Ukraine are quite prevalent on the Direct Line website. I browsed through the most frequent ones over the past minutes and found some repeated ones.

Vladimir Putin: Just a moment.

Sergei, please, there is no need to ban your books from being published anywhere, including Ukraine. It's not about money but the fact that you are one of Russia's most outstanding authors, part of Russian culture. And we must promote Russian culture there instead of removing it, all right?

Sergei Lukyanenko: Right, then I agree.

Vladimir Putin: Thank you.

Kirill Kleymenov: I found another very typical question on our programme's website. It is a question from Alexander Zhabinsky, Moscow Region. Here it is: "We refuse to negotiate with the current Kiev authorities. We think they are illegitimate. We doubt the legitimacy of the presidential election scheduled for May. We could continue ignoring them, but Ukraine will not just float away from the Russian border. We will have to deal with these officials eventually, legitimate or not. Perhaps it would be better not to waste time and start talks with the potential winners of the presidential race?"

Vladimir Putin: We do believe the current authorities are illegitimate. They cannot be legitimate as they do not have a national mandate for running the country, which speaks for itself. At the same time, we do not refuse to deal with them. We stay in touch at the ministerial level. Our ministers continue relations with their Ukrainian counterparts. Mr Medvedev talked to Mr Yatsenyuk. Mr Naryshkin talked to Mr Turchynov. They stay in touch. Speaking of the presidential candidates, you know what is going on with the presidential race. What is happening is absolutely unacceptable. If it goes on like this, we will not be able to recognise anything that happens after May 25 as legitimate.

How can this election be legitimate when candidates from the east are being assaulted, spattered with ink and kept from meeting with voters? What kind of election campaign is this? And that's to say nothing of the Ukrainian constitution. Irina Khakamada had a question about the legitimacy of the election according to the Ukrainian constitution. Without changes to the constitution, the new election cannot be held because Mr Yanukovych remains the incumbent president. According to the constitution, a new president cannot be elected if there is a living incumbent and legitimate president. So if we want the election to be legitimate, the constitution must be changed. Only then can we talk about federalisation and decentralisation. This is what common sense tells me.

We could, of course, continue to act despite common sense, although I don't know where that would lead us. But we stay in touch with everyone. Mr Poroshenko is currently a leading candidate. A substantial part of his business takes place in Russia. His company produces sweets that many of you have probably eaten without even knowing that Poroshenko owns the factory and that he is running for president.

I know Ms Tymoshenko very well. Even though she calls for Russians to be "destroyed by nuclear weapon", I think she said that while having some sort of emotional breakdown. But I know her quite well. By the way, she signed the gas contract that her fellow party members and other contract parties are refusing to honour. However, at some point, we had good business relations with her. I have not met any candidates from the east – Tsarev and former Kharkov Governor – but we generally understand what kind of people they are. And we will definitely work with all of them.

Maria Sittel: Could I say something please.

Mr President, the Maidan campaign against the southeast is unconstitutional as well. This is also against...

Vladimir Putin: Excuse me, please. Now there is pressure on the people in the southeast to lay down their arms, but I say to our partners: "This is a proper, correct approach, but pull the military back from the civilians then." They have gone completely mad: bringing in tanks, armoured vehicles (I'm looking at the TV screen) and cannons. What do they intend to do with cannons? Have they completely gone mad?

Kirill Kleymenov: The multiple launch rocket system.

Vladimir Putin: The multiple launch rocket system, combat aircraft and fighters in the air. Have they lost their minds? And what's next? Nationalist armed groups are coming. All right, suppose the east will disarm, let's assume the army will withdraw – why have the nationalist groups not been disarmed yet? And later they'll say they can't do anything.

How can the people in the east be disarmed, when Berkut officers, employees of the Interior Ministry and even some military units change sides? The issue should be resolved otherwise. It should be resolved through compromise and guaranteeing people's legitimate rights.

Maria Sittel: But no one is willing to compromise. With whom can we find an agreement? You say there must be guarantees, but who will provide them? The United States, the West, the EU leaders, the self-appointed Maidan authorities? Who?

Vladimir Putin: It's necessary to find an agreement with those who think they are in power in Kiev now. They should rely on common sense and reality.

Maria Sittel: Thank you.

Kirill Kleymenov: There are people on the sanctions list in this studio. Probably some of them don't even know they've been blacklisted. But Dmitry Kiselev knows for sure that his name is on the list. Valeria, go ahead, please.

Valeria Korableva: Dmitry Kiselev, Director General of the Rossiya Segodnya Information Agency.

Dmitry Kiselev: Good afternoon, Mr Putin. They've promised us the video question format, and I was eager to support it in some way. But since we're having some technical problems, I'll create an image with my fingers.

Here's a ring, and it seems to me our country is inside it. I have a feeling that someone is stifling me. I think this is NATO because it is spreading like a cancerous tumour.

In the past 25 years, this bloc has literally swallowed our Warsaw Treaty allies, then some parts of the Soviet Union, and the Baltic states. It has opened its jaws to swallow Georgia and now Ukraine as well.

Officials at the NATO headquarters say that it would make sense to admit Ukraine into NATO as well, whereas you're saying that the bloc system is dying out. I cannot agree with that because I feel this bloc is stifling me.

Of course, you can call me paranoid, to attribute this to paranoia. But even if someone has paranoia, it doesn't mean he isn't harassed. So it's not about me, but about NATO's expansion. Where is the red line? Does it exist at all? And what do you feel as the national leader? Nothing personal, Mr Putin. Thank you.

Vladimir Putin: We'll strangle all of them ourselves! Why are you so afraid? (Applause.)

Dmitry Kiselev: No, I'm not afraid, of course. I just want to know where the red line is and where to stop. Are there limits, and who will define them? Thank you.

Vladimir Putin: We aren't afraid – neither me nor anyone else. Nobody should be afraid, but we must proceed from reality. As for reality, you've just described it rather vividly in your brilliant manner and given us the creeps in some way. Let me repeat that I wouldn't fear anything, but we must assess the situation realistically. So what is it like? You've conjured up the image.

At one time, we were promised (I mentioned this at the Munich security conference) that after Germany's unification, NATO wouldn't spread eastward. The then NATO Secretary-

General told us that the alliance wouldn't expand beyond its eastern borders. However, it started expanding by incorporating former Warsaw Treaty member-countries and later on, the Baltic states, former Soviet republics.

I used to say at one time: "Why are you doing this? Do you want to ensure the security of these countries? Do you think someone may attack them? Well, it's enough to sign a bilateral treaty on friendship and mutual assistance, including military aid, and their security will be ensured." I heard in response: "This doesn't concern you. Nations and countries have the right to choose a way of ensuring their security themselves."

All right, this is true. But it is also true that when the infrastructure of a military bloc approaches our borders, we have grounds for certain apprehensions and questions. We must take certain steps, and this is also true; nobody can deny us this right. And this compels us to counteract.

I'll use this opportunity to say a few words about our talks on missile defence. This issue is no less, and probably even more important, than NATO's eastward expansion. Incidentally, our decision on Crimea was partially prompted by this.

Needless to say, first and foremost we wanted to support the residents of Crimea, but we also followed certain logic: If we don't do anything, Ukraine will be drawn into NATO sometime in the future. We'll be told: "This doesn't concern you," and NATO ships will dock in Sevastopol, the city of Russia's naval glory.

But it isn't even the emotional side of the issue. The point is that Crimea protrudes into the Black Sea, being in its centre, as it were. However, in military terms, it doesn't have the importance it used to have in the 18th and 19th centuries – I'm referring to modern strike forces, including coastal ones.

But if NATO troops walk in, they will immediately deploy these forces there. Such a move would be geopolitically sensitive for us because, in this case, Russia would be practically ousted from the Black Sea area. We'd be left with just a small coastline of 450 or 600km, and that's it!

In this way, Russia may be really ousted from this region that is extremely important for us, a region for which so many Russians gave up their lives during all the previous centuries. This is a serious thing. So we shouldn't fear anything but we must consider these circumstances and react accordingly.

As I've just said, the same is happening with our talks on the deployment of US missile defence elements. This is not a defensive system, but part of the offensive potential deployed far away from home. Again we're being told: "This is not against you."

However, at the expert level, everyone understands very well that if these systems are deployed closer to our borders, our ground-based strategic missiles will be within their striking range. Everyone is well aware of this, but we're being told: "Please believe us, this is not against you."

Our American partners have turned down our proposal to sign even some trifling legal paper that would say that these systems are not directed against us. Surprising as it is, but this is a fact. Naturally, we are bound to ask: "And why do you refuse to sign anything if you believe this is not directed against us?"

It would seem a trifle – a piece of paper that could be signed today and thrown away tomorrow – but they are reluctant to do even that. If they deploy these elements in Europe, we'll have to do something in response, as we've said so many times. But this means an escalation of the arms race! Why do this?

It would be much better to look at this issue and determine if there are missile threats from some directions and decide how this system should be controlled or accessed. It would be sensible to do it together, but no, they don't want that.

Naturally, we'll continue these talks with patience and persistence, but in any event, we'll do everything to guarantee the security of the Russian people, and I'm sure we'll succeed.

Kirill Kleymenov: Mr President, our people, who continue to call in and write to us, want to know the price of our victory in Crimea. Has Russia taken on an unbearable burden by incorporating Crimea?

Vladimir Putin: Do they mean related expenditures?

Kirill Kleymenov: Yes, primarily financial outlays.

Vladimir Putin: Well, speaking about the price of victory and other spending, I can tell you that, unfortunately, the physical infrastructure of Crimea, including its resorts, is in a bad state and we will need to invest heavily in it. We will also have to invest in increasing pensions and public sector wages, and in the development of Crimea's economy, including agriculture.

What kind of money am I talking about? Take pensioners and public sector employees. The spending obligations of Russia's Pension Fund are about 6 trillion rubles. Not counting allocations for the payment of maternity capital and other social benefits, pensions proper account for 4.5 trillion rubles. How much should we allocate this year to help Crimean pensioners? 28 billion rubles. Is this a lot or a little? It may seem like a huge sum, but compared to 4.5 trillion this is a low number. Spending on public sector employees [in Crimea] amounts to only 16.5 billion, which is entirely doable. Apart from infrastructure, we will also have to make other spending choices. We will not need to divert money from other programmes, because we have an additional government reserve fund in the amount of 245 billion, or slightly less, 240 billion rubles for this year. I don't think that subsidies for all Crimean programmes will be more than 100 billion.

Kirill Kleymenov: But what about the bridge, electricity and other things?

Vladimir Putin: A bridge is a vital element, or it could be a tunnel – we have not decided yet because the issue should be assessed by experts. Some say a tunnel is a more flexible structure, but experts point to the tectonic faults in the area. So we should consider this issue very carefully, because no matter what we choose – a bridge, several bridges or a tunnel – the project will require not only financing but also time. It cannot be accomplished within a year. We have been talking about current spending, but I am absolutely confident that in future, and even in the near or medium term, Crimea will become a donor region. It will go from a region that needs federal subsidies to a self-sufficient region and then a donor region. I can tell you frankly – I think my former colleagues, the Ukrainian leaders, will not resent this: they told me candidly that they deliberately turned Crimea into a subsidised region by taking more money from it than

from other regions to redistribute among other regions where the situation was especially difficult.

Kirill Kleimenov: You know, the Crimean issue has taken on a new dimension we didn't expect. I'll read out just one of many similar messages. It arrived from Sergei Bibartsev, a pensioner who lives in Krasnoyarsk Region: "At a teacher's meeting today my wife was told – and she is a teacher at Secondary School No 71 in the village of Kedrovoy – that teachers' salaries will be cut by 20 percent as of May because of Crimea's reunification with the Russian Federation."

Vladimir Putin: Crooks!

Kirill Kleimenov: "Is this true or not? And why by 20 percent?" Teachers, as everyone knows, are under the jurisdiction of the local authorities. Perhaps...

Vladimir Putin: No. Schools are run at the municipal level, and they are supported by the regions. This is, of course, a false statement that has nothing to do with reality.

Kirill Kleimenov: We have received numerous similar messages from various regions.

Vladimir Putin: Well, I want people to hear me and we will later look at all of the incoming information and sort it all out. As I've already said, we have no need to reduce any of our social programmes and guarantees. I'd like to repeat this with full responsibility and warrant that not a single social programme adopted by Russia and funded out of the Russian budget will be reduced. All of the resources are available. Everything we need for the people of Crimea will come from the Government's reserve funds and will not affect any of our social programmes.

Kirill Kleimenov: Where should people go to complain if they get such...

Vladimir Putin: Well, they have complained now and we'll try to react.

Kirill Kleimenov: Good. Pensioners are similarly worried, saying: "We've been promised that pensions would increase by 3 percent as of April, but they were increased by just 1.7

percent. We think that this is connected with Crimea,” Irina Shalygina wrote from the Khanty-Mansi Autonomous Area.

Vladimir Putin: I repeat that this is not in any way connected with Crimea or Sevastopol. It is linked with inflation, the level of inflation and the level of Pension Fund revenues. Under the laws of the Russian Federation, pensions are adjusted for inflation twice a year – in February and in April. I don’t remember that the Government publicly and officially announced that pensions would go up by 3 percent in April.

Opinions were divided in the Government on that score. They debated the issue and in the end, they acted in line with the law.

Under the law, adjusting pensions for inflation is implemented in accordance with accrued inflation and the Pension Fund revenues. In February, pensions were adjusted by 6.5 percent and in April by 1.7 percent. Of course, this is a modest increase, but it is still better than a cut. That is number one.

Number two. This is clearly not sufficient, but if we add 6.5 percent and 1.7 percent, we get 8.2 percent, don’t we? That is still higher than inflation this year. The target is 6 percent, although it will probably be 6.5 percent. However, it is not yet 8.2 percent. This is what the Government should keep an eye on.

In general, we should continue thinking and moving to raise the incomes of our pensioners. This is obvious.

Maria Sittel: More from anxious pensioners. “If the West refuses to purchase gas from Russia, how will that affect people’s well-being, especially that of pensioners?” – Lyudmila Budarina, Tambov Region.

Vladimir Putin: I have to say that oil and gas revenues make up a large part of the Russian budget revenue. This is a serious component for us in addressing economic development, budget funding for our development programmes and, of course, and meeting of our social commitments to our citizens.

I'll tell you what. I am not sure that I'll get the figures right, but, if my memory serves me correctly, the bulk of oil and gas revenue comes not from gas but from oil. In terms of the dollar equivalent, our oil revenues last year amounted to \$191–194 billion and gas revenues to about \$28 billion. See the difference? 191 from oil and 28 from gas.

Oil is sold on world markets. Is there any way to do us harm? One may try. But what would be the result for those who would attempt to do it? First of all, how would this be done? Of all the countries in the world, only Saudi Arabia has the real potential to increase production and thus bring down world prices. Saudi Arabia's budget assumes a price of \$85-\$90 per thousand cubic metres.

Kirill Kleymenov: President Obama has already visited them.

Vladimir Putin: I'm sorry, I meant oil, not gas. The budget assumes a price of \$85-\$90 per barrel, and our budget, I think, \$90. So, if one goes below \$85, Saudi Arabia will be on the losing end and have problems. For us a drop from \$90 to \$85 is not critical. That is first.

Second, we are on very good terms with Saudi Arabia. We may, for example, differ in terms of our views on Syria, but we practically have identical positions on the development of the situation in Egypt. There are many other things where we see eye-to-eye.

I have great respect for the custodian of the two Muslim shrines, the King of Saudi Arabia. He is a very clever and balanced man. I don't think that our Saudi friends would make any abrupt changes to harm themselves and the Russian economy.

Furthermore, they are members of OPEC, where we have many supporters. It is not that they have sympathy for us, but that they have their own economic interests and sharply reducing production – which can only be done in a manner agreed upon within OPEC – is a fairly complicated business.

Finally, in the United States, which is developing shale gas and shale oil production, production costs are very high. These are expensive projects. If world prices tumble, these projects may turn out to be unprofitable, loss-making and the nascent industry may simply die.

And one last point. Oil is priced and traded in the world in dollars. If prices fall, demand for dollars will plummet and the dollar will start losing its significance as a world currency. There are very many factors involved. The wish to bite us is there, but the opportunities are limited. That said, some damage can be caused.

Now about gas. We sell gas by pipeline (most of our sales are by pipeline) mainly to the European countries that depend on Russian supplies to cover about 30–35, 34 percent of their needs. Can they stop buying Russian gas altogether? I don't think that this is possible.

Some of our neighbours, very good neighbours with which we have very sound relations, such as, for example, Finland...Finland gets 90 percent of its gas from Russia. Some countries that used to be called People's Democracies in Eastern Europe depend on Russian gas if not for 90 percent, then for 60, 50 or 70 percent of their needs.

Can supplies be stopped altogether? I think that this is totally unrealistic. But one can do this at one's own cost, by hurting oneself. However, I cannot imagine such a situation. Therefore, of course, everyone is keen on diversifying their sources of supplies. Europe is talking about greater independence from Russia as a supplier, and similarly we are beginning to talk and act to become less dependent on our consumers.

However, so far, there is a measure of balance between consumers and suppliers. The only problem is transit countries. And the most dangerous part, of course, is transit via Ukraine with which we have tremendous difficulties in agreeing on energy problems. But I hope that we will be able to bring things back to normal, considering the contracts that have been signed and are functioning.

Maria Sittel: Thank you.

Retired people in Russia are very active. Here's the next question: "Are there any plans regarding the annexation of Alaska? We would be very happy to see that happen. Thank you. Pensioner Faina Ivanovna."

Kirill Kleymenov: That's a popular joke, Mr Putin. They call Alaska "Ice Crimea" in jest.

Vladimir Putin: Yes, I'm aware of that.

Faina Ivanovna, why do you need Alaska? By the way, Alaska was sold sometime in the 19th century. Louisiana was sold to the United States by the French at about the same time. Thousands of square kilometres were sold for \$7.2 million, although in gold. We can calculate the equivalent amount, but it was definitely inexpensive. Russia is a northern country with 70% of its territory located in the north and the far north. Alaska is not located in the southern hemisphere, either, is it? It's cold out there as well. Let's not get worked up about it, all right?

Kirill Kleymenov: Let's return to Crimea.

Vladimir Putin: We'll have to pay them allowances to live in the north. We need to calculate our budget expenses. (Laughter.)

Kirill Kleymenov: Here is a question that came in as we were having this conversation. Rishat Akhmediyev asks, "I'd like to know what steps will be taken to rehabilitate the Crimean Tatars?"

Vladimir Putin: Crimean Tatars suffered some serious damage during the Stalinist reprisals and were deported from Crimea, which is their traditional place of residence, their home. We certainly need to do everything we can to rehabilitate and restore the legitimate rights and interests of the Crimean Tatar people at a time when Crimea is joining the Russian Federation.

By the way, immediately after the annexation of Crimea to Russia, in 1783, I believe, forgive me if I'm wrong, Catherine II issued a decree to the effect – I can't quote it word for word – but its meaning was as follows: Crimean Tatars will be perceived by Russia as its own citizens with all ensuing consequences. Their rights, their mosques and their religion will be fully respected, which is extremely important.

It was a very wise and appropriate policy, and we plan to stick to such a policy today as well. That is why my colleagues in the Government and the Presidential Executive Office and I are now preparing an executive order on the rehabilitation of the Crimean Tatars. Not only the Crimean Tatars though, because Armenians, Germans and Greeks also suffered

during Stalin's reprisals, so representatives of all of these peoples should be included as well.

Kirill Kleymenov: We have been on the air live for two hours now. Russia's Far East is seven hours ahead of us, so it's already 9 pm there. I mention the Far East because we can't fail to raise the issue of the disastrous floods that occurred there last August. Thousands of people have yet to recover from this natural disaster. We have chosen two communities, the villages of Belgo and Novoye, in which to set up our mobile TV stations. Few people in Russia have heard of these villages, so in order to remind you of what happened back then, we have put together a video sequence that was broadcast by all channels.

So we are joined by the village of Belgo and our colleague Pavel Zarubin.

Pavel Zarubin: Hello Moscow! Greetings from Belgo. This village was almost totally destroyed by last year's unprecedented floods in the Far East. This is why a new cottage village is now being erected on this huge mound. A total of 87 houses like this one will be built with all the needed amenities. For instance, local residents will have hot water supply, while there was no running water before the flooding.

People who stayed in the village despite the floods' disastrous consequences came here today. Here with us today we have Presidential Plenipotentiary Envoy to the Far Eastern Federal District Yury Trutnev. He was appointed by the President to head the government commission that coordinates relief efforts in the Far East in the aftermath of the floods.

Vladimir Putin: Good afternoon. Mr Trutnev and I meet quite often. I hope that other people who went there will also have an opportunity to say something.

Pavel Zarubin: Ok, let's start with questions then. I would like to remind the audience that funding for building houses here was raised during a telethon with assistance from our colleagues. We have been here for several days now and have talked to almost all residents. People say that they really like these houses, but they have a lot of other questions. Here is a question that is relevant to all local residents. Andrei, a local car owner, will ask it.

Question: Hello Mr President, here's my question: as a car owner, I pay a 4,000-ruble transport tax, but there's no road here. Belgo is 50 kilometres away from a federal route.

Vladimir Putin: Why do you need a car then? If there's no road, why have a car? Where can you drive? Sounds like a provocation to me.

Question: No, this is an urgent issue for all of us, not a provocation. Sometimes people get sick and you can't even take them out of the village because the road is just terrible.

Vladimir Putin: I see.

Question: I wanted to ask you to help us address this issue. New cottages are being built. They are so great. But we also need a decent road. It could be just a dirt road, we're not asking for much.

Vladimir Putin: Very well, I understand.

You know, when I visited the territories that had been battered by floods and met with people and heads of municipal government bodies, infrastructure recovery and development were among the issues raised during conversations and meetings we held. It was about supporting agriculture and daily living in communities. We came to the conclusion that no matter how much you invest in, say, agriculture, although this a separate issue and there are probably many things that have yet to be done in this segment, if it is impossible to deliver the equipment needed for agriculture to the villages, these efforts are meaningless. Roads and bridges should be rebuilt. I must say that such funding was factored into relevant federal programmes for helping the affected regions. We could even increase such expenses if the region needs it. In order to do that, these needs should be communicated to the Russian Government first by the municipal government bodies and then by governors. Mr Trutnev is there with you today. You could share the requests and needs of your village with him. When Mr Trutnev comes back, we'll discuss it. If a village is built, there should be a road leading to it. This is the way it should be.

Kirill Kleymenov: One more question, Pavel, please.

Pavel Zarubin: There is another issue of concern to many Russians living in rural areas. Ms Kuzyurina, please.

Olga Kuzyurina: Good afternoon, Mr Putin. I'd like to make a request on behalf of all the villagers. A gas pipeline runs one kilometre outside our village, there is a gas distribution station. We would like to ask you to make a decision to connect our village, which is under construction now, to the gas pipeline. Thank you.

Vladimir Putin: If there is a gas system in place (I don't know what kind of gas pipeline it is, a high-pressure system? Most likely, it is), then the construction of low-pressure networks needs to be included in the relevant municipal and regional costs. This is one of the problems of gas infrastructure development in our country. The obligations are shared as follows: Gazprom and the federal budget are responsible for the construction of high-pressure systems, while municipal governments finance low-pressure systems for consumers. But this is a special case, and given that this is essentially a new village, this issue must and will be resolved. Please, send this request to Mr Trutnev as well. I'm sure that we will solve the problem.

Kirill Kleymenov: Thank you. Thank you, Pavel, thank you to the village of Belgo. We can see that the houses that are under construction there are almost completed even though construction started just this week. These are pre-fabricated homes, and, as Pavel said, the funds were raised by Channel One's audience during the "All Together" telethon. By the way, Mr Putin, we've received some unexpected ideas from our viewers. "Let's build the Kerch Strait Bridge as a symbol of Russian unity. We'll raise money via television and SMS. I dream of crossing it one day and visiting Crimea and Artek," writes 12-year-old Yana Mikhailenko from Klin. How do you like that idea?

Vladimir Putin: It sounds like she's going to spend the money she gets for snacks at school to help pay for a bridge to Crimea. This is very noble, thank her for this. I also thank Channel One, which held such a major campaign. Incidentally, the money that was raised is a considerable amount, Mr Ernst has just told me that it was about \$30 million, which is an enormous sum. And I'd like to thank Channel One and all Russian citizens who responded when they saw the problems that residents of the Far East faced as a result of a major flood, the biggest flood in the last 100 years. At the same time, I'd like to note that the Government is also making its modest contribution by allocating 40 billion rubles

to build housing, infrastructure, dams, etc., and to revive the economy. The key goal is to spend the funds efficiently.

As for the bridge to Crimea, this is a special matter. It will be quite expensive, but we will strive to do this as quickly as possible, with the best possible quality and in a cost-effective manner.

Kirill Kleymenov: We'll now switch to the village of Novoye in the Jewish Autonomous Area, to our correspondent Darya Grigorova.

Darya Grigorova: Good afternoon. Greetings to Moscow from Novoye in the Jewish Autonomous Area. The mark you can see here is the maximum water level ever recorded here, which is 10.5 metres. It's quite high, well above the average, even at the highest point in the village. When the dam in the village was destroyed, the village was not just flooded, it was isolated from the rest of the world. People held up here, on the second floor of the culture centre where they were supplied with essentials, water and food. Right here, in boats, people voted. Now that spring has come, the culture centre has been restored. Novoye is being restored too. The people who are here today went through that ordeal. I suggest giving the floor to the local residents. This is Galina Alekhina. Ms Alekhina was here with her large family when the disaster happened. She has four children and six grandchildren. She managed to help not only her family but many other residents.

Ms Alekhina, your question please.

Galina Alekhina: First of all I would like to thank the people of Russia for their help. Many thanks to those who didn't remain indifferent to our troubles.

My question is about the dams. The dams that are being restored do not meet our needs. They must be higher, and the flood in 2013 proved this. If the dams are not high enough all the restored and newly built houses will just be destroyed again. Without higher dams, all the invested money will just be wasted.

Will there be a government programme for dam building around our villages so people won't have to suffer any more and won't have to worry about another disaster.

Vladimir Putin: Of course. I just talked about this. The money that was allocated by the Government to restore the infrastructure and ensure the residents' safety will be spent on the dams. As far as I know, the dams are being built. But you believe they are lower than is necessary for your safety. Initially, we assumed that the housing would be rebuilt on safe ground, at higher levels that won't be flooded. Where that's not possible, dams must be built. I'll look into this by all means. I cannot tell you for sure what is going on there and whether this dam height is enough or whether it should be higher. We'll make sure an additional expert review is done and make corrections, if necessary.

Galina Alekhina: Thank you very much.

Kirill Kleymenov: One more question from your village please.

Darya Grigороva: We have been here for several days. Of course, most of us worry not only about rehabilitating, but also about developing farming. The flood, which has robbed many of us of everything we had, has given us a fresh opportunity to think about whether we should rebuild our homes here. Vladimir Badarin should be in this audience – we met him during the flood last August. Although he was hit hard, Vladimir does not plan to leave his native village.

Vladimir, what did you want to ask?

Vladimir Badarin: Good afternoon, Mr President.

Vladimir Putin: Good afternoon.

Vladimir Badarin: I live in a nearby village, more than half of which was flooded. We received financial compensation for our houses, which were flooded, and we also got coal, firewood, vegetables, potatoes and other kinds of assistance. We are sincerely grateful for this. But there is a question. People are leaving the village, and the number of those who are leaving has increased since the flood. The same is going on in neighbouring villages, which stand on the border. Young people are leaving.

Here is my question: Have you considered drafting a development programme for the border villages in the Amur River area? My question only concerns the border

villages that are not part of the priority development area. For example, a dam should be built in my village to prevent further flooding. Mr President, we really need a dam.

And one more thing: Are there flood forecasts in the Amur River area for July, August and September?

Thank you.

Vladimir Putin: Regarding the outflow of people, it's true that young people are leaving. I believe that one of the reasons behind this is that they were given an opportunity to choose between financial compensation for housing reconstruction or construction, and a ready-made house. I think that some people take money and buy housing in some other region. They have the right to do this; we cannot stop them.

But you are right, and I understand and feel your concern, because these are border villages we are talking about. This is an issue we should seriously consider as part of the Far East development programme. I will instruct those who are responsible for this programme to focus on this issue.

Regarding the dam, I will inquire as to whether there are any plans. As for now, I cannot tell you anything. But we will certainly ask about plans to develop infrastructure and [flood] protection for these villages.

As for weather forecasts, we plan to considerably expand the network of monitoring and weather stations. To be honest, I can't say that our plans in this respect are being fulfilled in full. We should monitor this issue more closely. We will do this, and I hope that the government agencies concerned will promptly respond to changes in the situation.

Maria Sittel: Thank you.

Vladimir Putin: Thank you very much.

Maria Sittel: Now let's return to our call centres. Tatyana, first to you.

Tatyana Remezova: Thank you, Maria.

The call centre has been operating for a week; over the past days, we have received 2.2 million phone calls, over 400,000 text messages, about 200,000 messages sent to our website and over 7,500 video questions. At this moment we are receiving 91 video questions per minute.

Another interesting detail is that people from Krasnodar Territory have become really active, probably because they saw Governor Alexander Tkachev in our studio.

I would like to remind you that this year we are conducting a public ranking of the topics raised and questions Mr Putin was asked. You can vote online on our website for the questions you like, and thus define how relevant the subject is. At the moment, the ranking is as follows: Crimea and Ukraine are in first place, naturally, followed by social security, housing and utilities, roads and healthcare.

Maria Sittel: Thank you.

Anna, what are the most popular video questions?

Anna Pavlova: We have a similar picture here in the video centre: Crimea and the events in eastern Ukraine are in the lead. Housing and utilities rank second, followed by social security issues. From this category we have another question, which we simply can't ignore.

Mr Putin, Amangeldy Akhmetov from Omsk would like to address you. Twenty years ago, he was severely injured in a car crash. Please, take a look at the screen.

Amangeldy Akhmetov: Good afternoon, Mr Putin.

Here is my question. I've been a wheelchair user since 1995. In 1998, I joined a waiting list to get a flat, but nothing has happened since: I can't have a wash like a normal person and my house gets too cold in the winter. Please help, you are my only hope.

Vladimir Putin: You know, it is sad to hear these words. As for this particular case, of course, we will respond and help.

There is something I would like to say on the issue. Providing wheelchair users with housing is the regional authorities' responsibility. In some regions, this issue gets resolved and people can see the results, but in other regions, unfortunately, the process is very slow or nothing happens at all, as in your case, for instance. I would like to repeat that we will by all means respond to this particular request.

But in general, there is a lot for us to do to help people with disabilities feel comfortable in the modern world, in modern society. We are taking steps in this direction, we have allocated significant funding from the federal budget – some 35 or 34.5 billion roubles a year for five consecutive years – for creating an accessible environment for people with disabilities.

But creating an accessible environment in residential areas is a slightly different subject. Housing is also a very urgent issue. We need to think about how to help the regions cope with it more effectively. Again, we will address this particular case separately.

Kirill Kleymenov: We've heard the message handling centre's statistics; let's take a live call.

Tatyana, please.

Tatyana Remezova: Yes, thank you, Kirill.

A great many callers are outraged by rising prices of housing and utilities. We'll take one of these calls. Our editors are telling me that it is Svetlana Shcherbakova calling from Chelyabinsk.

Ms Shcherbakova, good afternoon. Ask your question, please.

Svetlana Shcherbakova: Good afternoon.

Thank you for Crimea, of course. But why are you pursuing a housing and utilities policy that hurts people? Why are you forcing already impoverished people to pay not only their own bills but also for communal meters and needs, increasing costs by almost 50 percent and reducing our standard of living? I hope you don't want us all to starve to death.

Vladimir Putin: Housing and utilities are among our most pressing problems, affecting practically every family in Russia. Problems have been piling up for decades in this sector, including dilapidated housing, relocating tenants from dilapidated housing, rundown housing, and the problem of housing and utilities maintenance in general. I will not go into detail now, but what I've heard leads me again to some unhappy thoughts. You've mentioned communal meters that increase an individual consumer's bill by more than 50 percent. This is absolutely unacceptable. Do we have any information about this caller?

Maria Sittel: Yes, of course.

Vladimir Putin: This issue must be dealt with separately. I will say why. Because it has become standard practice for so-called management companies to shift their costs to tenants via collective expenditure systems. One light bulb somewhere in a hallway appears to consume more electricity than the entire building. What does this reveal? Either the management company itself is inefficient, or, on the contrary, it is stealing from tenants and shifting its costs and whatever else it wants to add to the bill to these communal meters. This requires an additional investigation, and we will certainly investigate.

As far as the system as a whole is concerned, I would like to say this. To avoid the growth in prices, which should certainly be restrained by local authorities, we have taken the following course of action: a bill was signed into law late last year that enabled the regions of the Russian Federation to set the upper price limit, while the state, or rather the Government, presents and proposes the settlement method and determines the upper – so-called combined – payment. Basically, the Government should have done this before April 1 of this year. But it hasn't, as far as I know. I'd like to draw the attention of the relevant government agency to this fact, and I do hope that this will be done shortly.

Moreover, a decision has been approved requiring that management companies be licensed to operate. The issuing of licenses will start later this year. Management

companies lacking licenses will be unable to continue operations starting in mid-2015.

Kirill Kleymenov: I think the guests in our studio have not had an opportunity to ask the President a question for a long time. Olga, please.

Olga Ushakova: Thank you Kirill. Yevgeny Artyukh, representative of the OPORA Russia SME support organisation and member of the Sverdlovsk Region Legislative Assembly, go ahead, please.

Yevgeny Artyukh: Good afternoon, Mr Putin. Here is my question. Russia is a member of many international organisations. Now, given the situation in Ukraine, many of them are not just shaking their finger at us but are threatening to expel us, and they seem to mean it. We know that PACE has suspended Russia's voting rights until the end of the year, as if we were some kind of poor relative or as if they had taken us in out of charity. As if we do not pay our membership fees regularly.

So my question is, do you think, personally, that Russia needs to review its membership in these organisations? Shouldn't we make our move and suspend or even terminate our membership in some of them? I am not insisting on this, but I suggest we think about it and I would like to hear your opinion.

We'll just wait and see who will benefit in the end.

Vladimir Putin: You see, the world is evolving fast. If – as I have already said – someone wishes to make it a unipolar world and dominate all international organisations, they are unlikely to succeed with that.

At the same time, we often come up against the failure to understand our position, and sometimes even an unwillingness to understand. We have already discussed this today. We will not insist on continuing our membership in certain international groups, especially those that fail to show an independent attitude and to work out their own perspective on major international issues. On the other hand, we will not make any demarches either. We will continue working as normal.

As for PACE, we do pay our membership fees, and rather substantial fees, I should say. But it won't hurt much if they don't want to see us. But we do not intend to impose isolation on ourselves either.

Kirill Kleymenov: Mr Putin, let's return to the consequences of Crimea's integration into Russia – a question about the sanctions. As is known, these sanctions hit several major businessmen such as Yury Kovalchuk, Gennady Timchenko and the Rotenberg brothers. They are rumoured to be your personal friends and part of your inner circle and that their fortunes were made thanks to that friendship. Now as it happens, they have sanctions imposed on them, also to a large extent due to their friendship with you. Don't you get the feeling that the main target of the EU sanctions is you, personally?

Vladimir Putin: It looks like they are trying to make me the object of these sanctions. As for the people you mentioned, they are indeed my good acquaintances, my friends. But for the most part they had made their fortunes before we even met. Mr Timchenko, for example, has been doing business since the 1990s, but this story is well known.

Seriously, they certainly have nothing to do with Crimea, absolutely. However, Mr Timchenko's wife had serious surgery and was unable to pay for it because her bank account and credit cards were frozen. This is a flagrant violation of human rights, that's what it is, and an action beyond reason.

I also have to tell you that I am not in any way ashamed for my friends. I'm sure they learned about Crimea from the TV news and they had tears in their eyes when they saw it. If they're being punished for that, well let's say they deserve this punishment. (Applause.)

Maria Sittel: An SMS from Saratov Region: "Why is the price of grain falling and the price of bread growing?"

Vladimir Putin: Another tough one, but that's the way things are. Indeed the price of grain has dipped. As for bread prices, they have increased a bit, but not much, I am aware of it because bread as you know is the basis of everything and people like myself, members of the Government, are obliged to know it: the price is up 1.3%.

On the whole inflation, that is price growth, as we noted the day before yesterday, was 2.3%, but the latest Central Bank figures put it at 2.8% and bread prices are up 1.3% (not much, as you see). But grain accounts for just 30% of the price of bread, the rest is electricity, power, transport and other factors, including import.

In general the inflation target for this year is 6–6.5% and I hope the Central Bank will keep it within these limits. But what worries me is that the structure of these prices, of the 2.8% increase, is very mixed. In the first quarter of this year the price of vegetables soared by almost 18%, 17.9% to be exact.

And if we look at vegetables as a group there are some differences too – these are small details, but they matter to people: for example – such things as onions and cabbage have gone up by 25, 30 and even more than 50%. The reason is the sagging ruble and the rising cost of imports, because we import a lot of food products at this time of year.

But let me repeat, I very much hope that on the whole the Government and the Central Bank will manage to rein in prices and stay within the 6–6.5% band.

Maria Sittel: So, agriculture turns out to be more important than guns and planes, and in the light of the Western threats of sanctions national food security is the number one issue.

Vladimir Putin: As much as I may like the army, I have to admit that agriculture has always been more important than guns because without it there can be nothing. As our farmers say, bread comes first. So we have paid and will continue to pay due attention to the development of agriculture.

In 2011 agricultural output grew significantly, by 23%, and it increased last year too, though not by so much. This year the budget envisages subsidies and money in support of agriculture to the tune of 170 billion rubles.

We will keep our finger on the pulse, monitor what is taking place in daily practice and I hope the Government will react promptly. Having said that, I know the mood among farmers who believe that the Government is sometimes late in providing subsidies

and other support measures, that the new system of support per hectare is in need of improvement – we know all that and we will follow all this closely and will respond.

Maria Sittel: Thank you.

Kirill Kleymenov: Mr President, bread is the staff of life, but Russia is getting its money from exporting energy, gas and petroleum products. We have a lot of questions about this. Why does Russia help Ukraine, and fail to cut gas supplies to debtor countries, but at the same time can cut gas supplies to its own people in winter for failure to pay 3,000 rubles on time? Why are Russians cut off for non-payment and Ukraine is not? We have lots of questions about this.

Vladimir Putin: I believe that payment discipline should, of course, be integral to our economic activities. In Ukraine, for example, consumers used to pay around 30%-35%, but now they are paying less than 20%. This undermines the entire national economy and the energy system, even the entire utility sector. This just runs it into the ground. However, given all that and the fact that compliance with payment discipline is very important, we must still always act based on a specific situation. I very much hope that there will be no extreme situation in connection with these cut-offs. It's imperative to assess the situation in each particular household.

With regard to Ukraine (I'll use your question to talk about it), the current contract was signed in 2009. Up until now, Ukraine has been paying us. Not always on time, but it has been paying for its gas nevertheless. The price formula which we expected Ukraine to use to pay for Russian gas hasn't budged since the time this contract was signed in 2009 with Prime Minister Tymoshenko and her then Energy Minister, a gentleman with the telling name Prodan (he's still the Minister of Energy) [prodan is the Russian for "sold" – ed.]. This formula has not changed once since then. What did we do? In 2010, we signed the so-called Kharkov agreements to extend the stay of the Russian fleet in the Crimean city of Sevastopol.

Please note that Russia has been paying about \$90 million (\$95, I think, or even \$97 million) annually for the presence of the Russian fleet in Crimea. In addition, with the sole purpose of supporting the economy of Ukraine, we agreed that the Russian Government would remove or reduce the export duty on gas supplies to Ukraine. The reduction

of export duties resulted in the final cost of Russian gas decreasing by \$100 per 1,000 cubic metres. In fact, we should have begun our payments in 2017, that is, remove this duty in 2017, because the agreement for our fleet staying in Crimea is valid until 2017. Nevertheless, we started paying immediately upon signing the agreement in 2010. That is, we began to pay in advance. We were paying \$100 million in current expenses plus advance payments that were coming due only in 2017. So, that makes it 2011, 2012, 2013 and 2014. Over these four years, in fact for 2018, 2019, 2020, and 2021, we have already paid \$11.4 billion. That's 11.4 billion dollars. This begs the question: where's the money? The event has not yet happened, the agreement on the fleet is still valid, and we have already begun to pay as if it has already ended. This is my first point. Of course, we have now dropped this price decreasing mechanism and cancelled the Kharkov agreements.

Next. Responding to our Ukrainian partners' requests, we took another step in 2013 and loaned them \$3 billion and even lowered the gas price to \$268.5 per 1,000 cubic metres on the assumption, and based on the agreement, that they would pay us the arrears for the previous year which amount to about \$1.5 billion, and would continue the regular current payments at reduced prices. What happened next? By the way, we agreed that if they failed to pay, we'd revert to the previous prices. And what happened? They paid in January, and their debt was reduced slightly. In January, they paid in full; in February, they paid less than half, and in March, the new Ukrainian government has not paid anything at all. Of \$525 million owed, they paid nothing, zero, not a single dollar, not a single ruble. Under the existing agreements, if they fail to make their current payments, Gazprom is entitled to go back to the previous pricing. Why would we lock in the increasing debt at a low price when we can lock it in at the real contract price? That's the problem.

Kirill Kleymenov: The previous pricing was \$485, right?

Vladimir Putin: Yes, it's going to be \$485.

What do we hear? That Russia has a biased approach to Ukraine, and this is the political cost. However, this is the price that they agreed on with us in 2009. We lowered it under the agreement that they would pay us at least the lower price. But they don't even pay that. Zero. That's the problem. I told our Western partners, including Germany, "We do not insist on the immediate payments. We understand Ukraine's difficulties, but we are asking

you to join us in this work and take part in rescuing the Ukrainian economy.” What does the United States do? They promised Ukraine a billion. A billion what? Guarantees. It's not the actual money, it's just a guarantee to the banks that will agree to loan money to Ukraine. Where are these banks? There's no one to be seen yet. We can wait a little longer, a month. If there are no payments next month, we'll then switch to the pre-payment arrangement in accordance with the contract. What does this mean? This means that Ukraine will need to pay us upfront for the next month, and we'll send them as much gas as they paid for. This is a difficult calculation method, and it can lead to disruptions in the distribution of our gas to our European consumers. This is exactly why we're showing such corporate responsibility, such willingness to negotiate and be patient.

Kirill Kleymenov: Mr President, when will this system go into effect?

Vladimir Putin: Like I said, we'll wait for another month. We could do it today, but we'll wait one more month.

Kirill Kleymenov: News from Europe is coming in just as we are holding this Direct Line event. This has to do with Jose Manuel Barroso's reply to your letter, which says that the European Commissioner for Energy will get in touch with partners in Russia and Ukraine to organise consultations on gas supplies. As far as I understand, they will also discuss the security of gas supply and transit to European consumers. The European Commission said this is Gazprom's responsibility, not Ukraine's.

Vladimir Putin: I can agree about the supplies, but the transit is up to Ukraine. The contract I mentioned stipulates supplies to Ukraine at a price calculated according to the well-known formula – \$485 per 1,000 cubic metres at the moment – and unimpeded transit of the Russian gas to Europe.

This was actually one of the reasons we built the Nord Stream pipeline: to secure our exports from such incidents, to ensure direct supplies to our European customers via a pipeline system along the Baltic Sea bottom. This is why we are also building the South Stream, a pipeline across the Black Sea linked to the European Union.

Kirill Kleymenov: We have Berlin on the line.

Vladimir Putin: Good timing.

Kirill Kleymenov: Our correspondent Ivan Blagoi works in Europe's most influential country.

But before giving the floor to him, I'd like to ask you to return to the speech that we discussed at the very beginning, the one that you made before signing the treaty on Crimea and Sevastopol's accession to Russia. Many people were very impressed by it and compared it to your Munich speech. They even called it your best speech.

I'd like to ask you why you made this speech. First, the protocol didn't demand it and, second, the format was very unusual – you addressed peoples rather than countries or governments.

Vladimir Putin: The format was chosen based on the importance of the event and the situation. This is an unusual event in the life of our people, our country and our state. This is why I considered it my duty to address the Federal Assembly and the people of the Russian Federation in the presence of members of the State Duma and the Federation Council. This is the first point.

Second. Why was the speech addressed to the peoples of other countries rather than their governments? As you know, the modern world, especially the Western world, is highly monopolised and many Western countries – whether they want to hear this or not – have voluntarily given up a considerable part of their sovereignty. To some extent, this is a result of the politics of blocs. Sometimes we find it very difficult to come to terms with them on geopolitical issues. It is hard to reach an agreement with people who whisper even at home for fear of being overheard by the Americans. This is not a joke or a figure of speech. Listen to me, I'm serious, I'm not joking. However, they are our main partners on economic and some other issues.

But I addressed the peoples of these countries primarily because an ordinary person from Germany, France or Italy will instantly sense whether a statement is false or not. Our position is absolutely open, honest and transparent, and for this reason it is easier to get it across to ordinary people than even to some leaders. It seems to me we succeeded

to some extent. No matter what government rules a country, it will have to consider the opinion of its voters. This is why I addressed the people.

Maria Sittel: We have a question from Berlin, from our correspondent Ivan Blagoi, who has been working in one of Europe's most influential countries.

Ivan Blagoi: Good afternoon.

How united is the West in its desire to punish Russia? Which EU countries are in favour of isolating Russia? Is this even possible? And lastly, what is going on in Ukraine? These are the questions that the Valdai International Discussion Club experts have been discussing.

Some of them are here in this studio. Let me introduce them: Alexander Rahr, Germany; Nicolai Petro, USA; Gabor Stier, Hungary; Gerhard Mangott, Austria; and Arnaud Dubien, France. The first to ask his question will be Alexander Rahr, member of the Valdai Discussion Club Advisory Board.

Mr Rahr, go ahead please.

Alexander Rahr: Good afternoon, Moscow. Good afternoon, Mr Putin.

Vladimir Putin: Good afternoon.

Alexander Rahr: Greetings from Berlin.

The Valdai Club members had a meeting that lasted several hours yesterday, and many Club members, including our German colleagues, expressed their concern about the kind of Europe we will live in – in addition to the shared task of stabilising Ukraine, which is falling apart as we speak. After all, it is a country of 45 million people and our common concern.

What future do you envision for Europe in five or, say, ten years? Will we live in a common Europe from the Atlantic to the Pacific Ocean? Or will we live in two different Europes?

I remember how you said at the Valdai Club last September that Russia is a different kind of Europe, whose values differ from those of the post-modernist West. Can we bring these two views together? What can Germany do to help build a common Europe?

Vladimir Putin: First, good afternoon, Alexander.

Second, I'd like to say that there is no contradiction in what I said at the Valdai Club. Russia's values do not differ dramatically from European values. We belong to the same civilisation. We are different, and we have some features that are unique to us, but we have the same ingrained values. I believe that we must certainly strive to create a greater Europe from Lisbon to Vladivostok, as I have said more than once, including today. If we accomplish this task, we will be able to take our rightful place in the future world. But if we choose a different path, if we divide Europe, European values and people, if we promote separatism in the broad meaning of the word, this will make us all insignificant and mediocre players who will have no influence over their own development, let alone global development.

Maria Sittel: Berlin, please, one more question from you.

Ivan Blagoi: Yes, Mr Petro, please, your question for the President.

Nicolai Petro: Good afternoon, Mr President.

My question concerns Russia-US relations. The relations between Russia and the United States have worsened to a critical level recently. The US media unanimously speak about total mistrust between the US and Russian leaders. However, global issues still need to be resolved, and this requires closer cooperation between the US and Russia.

So my question is: How can the lost trust be recovered? What particular steps are necessary for the US and Russia to transform from rivals to allies in settling global issues?

Vladimir Putin: You know the answer is simple. I agree with you that we have lost trust. But why did this happen? We believe it's not our fault, because these double standards, as we call them, have always been disappointing.

We see a situation in which it's appropriate to act the way the United States did in Yugoslavia, Iraq, Afghanistan, Libya but it's inappropriate for Russia to defend its interests. I gave you the example of Kosovo, which is totally obvious and clear to the average person not involved in politics. Everything is being turned upside down. This position is devoid of any logic, any logic whatsoever.

We just mentioned that I addressed the European people and other nations directly, because ordinary people can see insincerity. In order to restore trust we need to respect each other's interests, speak the same language, avoid double standards and lies in international politics, focus on international laws but not on the politics of force, which we also mentioned here. I hope this will be possible. And I can assure you that Russia will certainly strive for this.

Kirill Kleymenov: Mr President, you remember the story with a button that Ms Clinton gave to Mr Lavrov as a gift? The "reset" inscription on the button was translated into Russian with a mistake, as "overload" rather than "reload." An overload is what eventually happened.

Vladimir Putin: You know, it didn't happen just now because of Crimea. I think it happened much earlier, just after the events in Libya. Dmitry Medvedev, who was Russia's President at the time, supported our western partners and upheld the resolution on Libya. This was about a ban on flights of Libyan government air force.

The actual result was air bombing, the overthrow of Gaddafi, his murder and the murder of the US ambassador, and the collapse of the country. This is where mistrust comes from. This is how the "overload" happened. But I would like to emphasise this once again. Russia is interested in improving relations with the United States and will do whatever is necessary to restore trust.

Kirill Kleymenov: We can take one more question from Berlin. Ivan, go ahead.

Ivan Blagoi: Mr Stier, your question, please.

Gabor Stier: Good afternoon, Mr President. We are witnessing now not just a reframing of the world order, but a reframing of views. We are witnessing a conservative renaissance

in Russia. In many European countries, traditional views are gaining ground; from Hungary to France, people vote for politicians who defend the national interests of their countries without looking constantly to Brussels. This approach is not always appreciated in Europe.

What do you think, will it be possible to build relations, to build a dialogue between Russia and Europe based on interests? Aren't you afraid that the United States could damage the Russia-EU relationship for a long time to come?

Vladimir Putin: We, in any case, are not seeking to damage relations with Europe, and I hope our European partners are not planning to either.

As for the rethinking of values in European countries, yes, I agree that we are witnessing this process. So-called conservative values are acquiring a new significance. I spoke about that more than once. The victory of Viktor Orban in Hungary, the success of the conservative forces in the latest election there, the success of Marine Le Pen in France (she came third in the municipal elections), the growth of such trends in other countries is obvious.

As I see it, this is associated with the desire to strengthen national sovereignty, with the realisation that some issues that are vitally important for citizens can be addressed more effectively at the national level than, say, in Brussels. But there is also an understanding that it is important to join efforts to deal with some challenges that concern everyone. But a certain reframing process is underway indeed, and I hope that the results will be positive.

As for our relations with Europe and western countries, I have mentioned before that this is an issue of trust. In fact, you also spoke about it. You know, this is very important, this is a vital issue – trust on both the personal and intergovernmental level.

You know what came to my mind? The current Secretary General of NATO, Mr Rasmussen, used to be Prime Minister of Denmark, a wonderful country with wonderful people. We have excellent relations with Denmark, at least that has been the case so far, and I hope it will remain so in the future. When Mr Rasmussen was Prime Minister, he once asked me to hold an unplanned meeting. I agreed and we met.

It later turned out that he had recorded our conversation and then published it. I could not believe my eyes and ears. Sounds unbelievable, right? He explained that he recorded our conversation for history. All right, I'm flattered, but even for if it was for history, shouldn't he have at least warned me or asked my permission to publish those talks? How can we speak of trust after something like that?

You see, relationships – whether between people or governments – should be more stable, transparent and collaborative.

Maria Sittel: Berlin, thank you so much for your participation and your questions. Stay with us; we will continue to discuss international issues in our Moscow studio.

We have a question from the video call centre. Anna, please.

Anna Pavlova: Yes, colleagues, thank you. We have a surprise video call, which I would describe as sensational. It was sent by a person who has made an information revolution by exposing a mass surveillance programme that affected millions of people around the world.

Mr President, you have a question from former intelligence agent Edward Snowden.

Vladimir Putin: Do I really?

Edward Snowden: Zdravstvuyte. I'd like to ask you a question about the mass surveillance of online communications and the bulk collection of private records by intelligence and law enforcement services. Recently, the United States, two independent White House investigations, as well as a federal court all concluded that these programmes are ineffective in stopping terrorism. They also found that they unreasonably intrude into the private lives of ordinary citizens – individuals who have never been suspected of any wrongdoing or criminal activity; and that these kinds of programmes are not the least intrusive means available to such agencies for these investigative purposes. Now, I've seen little public discussion of Russia's own involvement in the policies of mass surveillance. So I'd like to ask you: Does Russia intercept, store, or analyse in any way the communications of millions of individuals, and do you believe that simply increasing

the effectiveness of intelligence or law enforcement investigations can justify placing societies – rather than subjects – under surveillance? Thank you.

Kirill Kleymenov: Mr President, did you get the gist of the question?

Vladimir Putin: Yes, by and large.

Kirill Kleymenov: This is a professional question from Mr Snowden. You speak freely with foreign leaders during summit meetings, as we can see. But I will try to translate the question for our audience.

Vladimir Putin: Still, American English is slightly different...

Kirill Kleymenov: I tried to write down the question, which, as I have said, concerns some professional aspects...

Vladimir Putin: As I understood it, he wants to know if we engage in electronic surveillance.

Kirill Kleymenov: He asked about the mass surveillance of online communications and the collection of users' private records. He said that the US federal court concluded that these programmes are ineffective in stopping terrorism. This is an important admission. He also said something about intrusion into the private lives of ordinary citizens. Mr Snowden also said that he had seen the public discussion launched in Russia on this topic. And, lastly, he has asked you if Russia intercepts, stores, or analyses in any way the communications of millions of individuals. He wants to know if you believe that such mass surveillance can be justified.

Vladimir Putin: Mr Snowden, you are a former intelligence officer, and I have worked for an intelligence agency, too. So let's talk like two professionals. To begin with, Russia has laws that strictly regulate the use of special equipment by security services, including for the tapping of private conversations and for the surveillance of online communications. They need to receive a court warrant to be able to use this equipment in each particular case. So there is no, and cannot be any, indiscriminate mass surveillance under Russian law.

Since criminals, including terrorists, use these modern communication systems for their criminal activity, security services should be able to respond accordingly and use modern equipment to combat crime, including terrorism. Yes, we do this, but not on such a large scale and not arbitrarily. Hopefully – I hope very much – we will never act in this manner. Besides, we do not have such technical capabilities and funds as the United States. But the main thing is that, happily, our security services are strictly controlled by the state and society and their operation is strictly regulated by law.

Kirill Kleymenov: Mr Putin, we have been talking about big politics for over three hours, but our audience is also interested in other issues. One of our viewers is asking when the country is going to see its First Lady.

Vladimir Putin: You know, I need to marry off my ex-wife Lyudmila first, and then I'll think about myself.

Maria Sittel: And now let's talk about Sochi, our Olympics, our Olympic and Paralympic Games, which have become the brand identity of our country, which were held at the highest organisational level. Many thanks to our athletes – they are here in our studio – for bringing us so much joy.

Kirill Kleymenov: I see them behind your back: Alexander Zubkov and Alexei Voyevoda, our wonderful bobsledders. Thank you very much for the emotions you have given us.

Maria Sittel: Let's switch on Sochi.

Kirill Kleymenov: Sure. We couldn't possibly do without it. We have Sochi, the Olympic and Paralympic capital on the line. Our colleague Anton Vernitsky works there.

Anton Vernitsky: Hello, Moscow. Sochi is on the line. Does the empty Olympic Park look unusual? Just recently, a few weeks ago, millions of TV viewers watched what was happening here at the Olympics in Sochi. Tens of thousands of our tourists and foreign fans came here to support their favourite athletes.

Now builders are working in the Olympic Park. They are building the track for Formula One, which will be held next autumn. But otherwise the Olympic Park is unusually quiet and this

is a source of concern for local people who are mostly involved in the tourist business. Our first question is about this.

Question: Crimea has joined Russia and this is great. But what will happen with our city? Won't it be forgotten? Hotels have been built in our city and today it is the most accessible Russian city for people with disabilities. We have trained personnel to host foreign guests. Our seaport and airport coped with the foreign and Russian tourist influx. Meanwhile, accessible tickets from different Russian regions have only been arranged for Crimea. Residents of Sochi who had been asked to weather massive Olympic projects have been waiting for this first post-Olympic season for the past few years as for manna from heaven. Will we be forgotten this year and the next two or three years after managing to cope with the pre-Olympic load? Will our home city, Sochi, be supported and developed?

Vladimir Putin: It goes without saying we'll support and develop Sochi. It is time to understand what we should do in addition for Sochi's development. I don't think you should worry about what might happen because of Crimea's accession. You've just said yourself that many modern and very comfortable hotels for tourists have been built in Sochi. These are world-class hotels and their rates should not be reduced below the limit – otherwise economically they won't make any sense. This means that Crimea and Sochi should have different categories of tourists and vacationers. Given its current infrastructure, Crimea is designed for people with small incomes. They can hardly afford to stay in glamorous, top-notch Sochi hotels. Regardless of Crimea's jurisdiction – Russian or not – there are categories of people who won't be able to stay in Sochi's chic hotels, and it is important to be clear on that. People without a great deal of money can afford a vacation in Crimea but the question is how to get there, by what means of transport. In this context we are thinking about low-cost air tickets. I don't know whether the Government has announced this or not but if not, it will do so very soon. Anyway, I recently met with my colleagues – I invited them for a meeting on this score – and told them that we must provide return air tickets for vacationers in Crimea at about 7,500 rubles.

Kirill Kleymenov: Aeroflot has already announced this, Mr President.

Vladimir Putin: Well, that's great. We'll have to provide railway tickets for 2,000, 2,500 and a maximum of 3,000 rubles in an open-berth carriage, because it will be quite difficult

to get there. If we don't offer cheap tickets people simply won't go. What I mean is, it won't be possible to go by the usual northern route because Ukraine will shut down railway service from the north of the peninsula. So people will have to travel to Anapa or Krasnodar and then get to the Black Sea coast, from where they should go by ferry or ship to relevant ports and finally to hotels. This is a fairly complicated route and if such travel is not cheap we won't be able to attract holidaymakers to Crimea. This is why we are trying to create these special conditions for Crimean health resorts and increase the number of aircraft that would carry those who'd like to vacation in Crimea.

However, this doesn't mean at all that we'll forget about Sochi. On the contrary, we'll do everything to support Sochi in the price niche that is designed for people with at least medium incomes. You know that after the Olympics some of its facilities are being converted to other uses. We have the Governor here and he knows all about this. I hope he's already started turning one facility into a major shopping centre and another into a huge exhibition complex. We're planning to host permanent shows of leading figure skaters from Russia and the world on the skating rink that hosted the Olympic figure skating competitions. All these innovations will add to Sochi's appeal to visitors. I think the same is true of Formula One and the future FIFA World Cup.

Of course, it will take time to convert these Olympic facilities into post-Olympic ones but there is no doubt that Sochi will carry on and flourish.

Kirill Kleymenov: Mr Putin, speaking of the FIFA World Cup, may I ask you a question as a football fan? There have been threats to relocate the 2018 FIFA World Cup, which Russia is to host. Some US senators have sent a letter to the FIFA headquarters about this. Do you think this is possible?

Vladimir Putin: As FIFA head Mr Blatter said, football and politics don't mix, and the organisation is not going to review its schedule or the host countries, including Russia.

Maria Sittel: That's good news.

Sochi, one more question please.

Anton Vernitsky: Yes, we have questions. Not only business people are present here today. We have invited young Sochi athletes, builders that built all these beautiful facilities, and students of the Olympic University in Sochi. So they have a question.

Ivan Belyayev (student of the Russian International Olympic University): Good afternoon.

So here is my question. Construction of the Olympic facilities required substantial money. However, now, as you can see, the Olympic Park is abandoned and out of use. Don't you think the Olympic facilities will become so-called "white elephants"? Who will maintain them and how? And most importantly, how will they be used? Do you plan to develop any government programmes for this?

Vladimir Putin: Ivan, I have just said that the future of the facilities is already known. Some of them will be turned into exhibition centres, shopping malls; some will be used as concert halls; some ice rinks will still be used for their initial purpose. For example, the Small Arena [Shaiba] or the Large Arena [Bolshoy Ice Dome]. The Large Arena, I hope, will be available for the Sochi ice hockey team, while the Small Arena will be a permanent sports camp for children with facilities in both the coastal and the mountain cluster. We decided long ago how these facilities will be used. I repeat once again, restructuring and re-equipping them takes time, but everything will be done, all these projects will be completed.

Kirill Kleymenov: Mr Putin, we were all amazed by the Olympics, but the Paralympics left just as powerful an impression on us.

Vladimir Putin: Yes.

Kirill Kleymenov: Above all, we were impressed by our superheroes, the athletes who competed for Russia. Here in the studio we have a person without whom many of our Paralympic victories would not have been possible.

I would like to ask Olga to present the next speaker.

Olga Ushakova: It is a great pleasure for me to present Irina Gromova, the coach of the Russian cross-country skiing and biathlon team. She is the person behind

the numerous moments of joy that our Paralympic athletes brought us. Irina trained the athletes who won 30 medals for Russia, including 13 gold medals.

Ms Gromova, your question for the President.

Irina Gromova: Mr Putin, the phenomenal success of our Olympians and Paralympians produced a boom: children are dragging their parents to sports centres and parents are eager to get their children involved in sports. What does the Government intend to do to encourage children to take up sports, especially kids with disabilities and disabled people in general, who live in remote areas? How can we reach them? Could it be possible to explore opportunities for creating boarding schools across Russia, including in Moscow, to enable children from remote areas to do sports, since the availability of sports facilities is very poor where they live? Availability is now a major issue. If we could do this, we would be able to achieve great results, including in sport.

What do you think?

Vladimir Putin: You and I discussed this issue when we met in Sochi. Responsibilities should be split between regions, municipalities and the Federation. As you know, the Federation is already doing a lot for high performance Paralympic athletes by creating specialised training centres and promoting a barrier-free environment in old venues so that Paralympic athletes can use them.

Popular sports, including for adults and children with disabilities, is a separate issue that has received little attention until recently. Special attention should be paid to disabled sports as part of the efforts to promote mass sport. These initiatives should be coordinated with the regions. We will move in this direction and are committed to encouraging regions to make the necessary allocations for creating specialised facilities. A part of funds that I've already mentioned, 34.5 billion rubles that will be allocated for creating a barrier-free environment, could also go towards such efforts.

Maria Sittel: Mr Putin, let me continue with this topic and ask you if you are aware of the fact that in our country people with impaired hearing cannot even call an ambulance? There is no one to help them if anything should happen, and their chances of survival are, in fact, close to zero.

Vladimir Putin: We recently discussed practically the same thing with the Agency for Strategic Initiatives, when we talked about an even more difficult case – deaf-blind people. But let's also pay attention to those with impaired hearing and how we can help them adapt. I will ask our colleagues from the Agency to look at this issue as well. There are many energetic, young people at the Agency who have many good ideas. In general, this is a solvable problem.

Maria Sittel: Yes, quite so.

Vladimir Putin: The internet can be used for this, and there are other ways.

Maria Sittel: Mobile apps.

Vladimir Putin: We just need to focus on it. I will definitely ask our colleagues to take up the issue.

Maria Sittel: Please do.

Kirill Kleymenov: Healthcare is a sensitive issue. Lots of questions here. "New healthcare reforms in our region have led to disruptions in supplies of medications for patients with diabetes," that's from Krasnoyarsk Territory. In the Republic of Khakassia, doctors do not issue prescriptions for free drugs citing the lack of financing in Khakassia; high prices for medications; the shortage of skilled medical personnel; the closing of rural health posts and rural hospitals, and so on. During preparations for the programme, Tatyana Remezova and I identified the regions where these problems are most acute.

Mr Remezova, over to you.

Tatyana Remezova: Yes, Kirill, as we looked at the regions, we were able to identify two of the most painful issues for all of Russia from Rostov to Chita. There is an enormous amount of complaints about rural hospitals being shut down. People called us with the same complaint: at best, there's one rural doctor left serving several villages in areas that are hundreds of square kilometres apart; one ambulance that can't negotiate local roads that are so bad that people say they are left to die because ambulances can't get

to them; and not a single decently equipped hospital within their reach. We have tonnes of such complaints.

The second issue concerns low salaries for medical personnel. We have received lots of calls from all over Russia about this. I believe we have an incoming call from Volgograd about this. Sergei, you are on the air.

Good afternoon, Sergei, please go ahead.

Question: Good afternoon, I'm a doctor and I have a question for Mr Putin. Why is it claimed that the official salary of doctors is 49,000 rubles a month, whereas in fact doctors are paid anywhere from 12,000 to 15,000 rubles a month (that's for high-skilled doctors who also have to pay utility bills, taxes and so on from their salaries)?

Tatyana Remezova: Mr Putin, we have many such questions. Let me quote another one: "It's a shame that healthcare officials from St Petersburg misinform you about doctors' salaries. I'm a registered nurse with 40 years in the industry, including in the intensive care unit at a children's hospital; ambulance; department of toxicology and drug addiction – all of these jobs involve hard work. Now, I work at Outpatient Clinic No. 43, in St Petersburg's Frunzensky District. My base pay is 16,057 rubles a month. I work one and a half shifts and my salary is 26,600 before taxes. My after-tax salary is 23,000 rubles. Executive order No. 597 is not working. Our staff members wrote to the Presidential Executive Office on several occasions. The Chief Physician wrote in a reply letter that the average salary for a nurse is 47,000 rubles. We have only retired people working in our building. Young people refuse to work for such meagre salaries."

Indeed, Mr Putin, Governors invariably report to you that all is well and doctors' salaries are above the average salary paid in their respective regions, but things are different in real life. How come?

Vladimir Putin: First of all, I'd like to focus on healthcare in rural areas. People are saying that rural medical posts are being closed. It's very strange indeed that this is happening.

Most of the funds allocated as part of the effort to modernise the healthcare system were used to improve rural medicine. As far as I can remember, the amount of funds allocated

to the programme and the regions in general was almost double the amount used to improve healthcare in urban areas, primarily because we wanted to maintain and reinforce the network of medical institutions in rural areas.

So, if a rural medical post is closed somewhere, then inter-village rural posts should be set up with proper transport access, roads, etc. I'll look into it closely and see what's going on in the regions in question. This is absolutely unacceptable. This is my first point.

Second, with regard to doctors' salaries. In general, the statistics show that salaries in medicine are growing faster than in other industries. Specialists saw their salaries grow 141 percent last year, that is up 41 percent, nurses 80 percent, and paramedics 47 percent.

With regard to the situation described by the nurse from St Petersburg, we need to look carefully into this case in order to understand what's going on there. I promise you that this is exactly what we are going to do. We will take a thorough look at this medical institution in the Frunzensky District of St Petersburg.

If memory serves, the average salary in St Petersburg is around 37,500 rubles, approximately 37,600. If we use this number as 100 percent, we can arrive at the salary paid to medical personnel as a percentage. If this lady's salary is 26,600 rubles, or 23,000 after taxes, how much is that as a percentage? She's a registered nurse. What percentage is that of 37,500? Perhaps less than 80%, but around that figure.

Clearly, this person works one and a half shifts. The Government should then ... The Government makes calculations of real wages: base salary, base salary and a half. I've heard people say this, but we believe that it's not so important.

Importantly, people are earning this money. But then the Government should clearly and openly say how these salaries are being calculated. Whether they are consistent with workplace safety standards. And so on and so forth. There is, of course, something to work on. But all in all, I repeat, the salaries of medical personnel are growing faster than average salaries across Russia.

As for salaries of 12,000–13,000 ruble being paid to highly skilled professionals, we should also look at specific regions, and we will look at it by all means. Again, this should not be significantly different from the average figures nationwide. We should look at the average wage in this particular region.

However, there's another point that I'd like to draw your attention to. The Government has issued a resolution whereby salaries of executives in publicly funded institutions should be no more than eight times higher than the average salary in that particular institution.

This difference is high enough to provide a decent salary to senior executives and recognise their managerial abilities and qualifications. Anything above that is unacceptable. I do not rule out the possibility of violations in this area. We will get back to this and take a look at this issue at the local level.

Maria Sittel: Mr President, I have here a question about civil liberties, if I may. I will read you a text message from Ilya Belov from Moscow. He asks: "Do you think that the events in Crimea have greatly reduced the place of the liberal opposition in our society?"

Vladimir Putin: I believe that it has never been very broad in our society, and that it only looked strong. We have a small group of revolutionaries who are far removed from the people, as the classics said, but they are an important part of society. Irina Prokhorova addressed this issue today.

Of course, we should take the opinion of the majority of people into account when taking decisions and shaping our domestic and foreign policy. But we must never disregard the opinion of the minority who have a different opinion of the developments taking place in the country and on the international stage, and we must take their opinion into account and listen to what they have to say. But I cannot say that the government is deliberately trying to limit their space.

Maria Sittel: As a follow-up, let's give the Nezavisimaya Gazeta editor-in-chief a chance to ask a question.

Tatiana Stoliarova: Mr Remchukov, over to you.

Konstantin Remchukov: Mr Putin, you have touched upon many questions that I wanted to ask you regarding international relations and the level of trust in the world. I belong to a group of Russians who believe that normal relations with the West are good for Russia and its citizens.

We live in a global world and we need to communicate and exchange opinions in all spheres, including the economy, technology, healthcare, education and culture. This is an important and integral part of our civilisation. It's sad that our relations have deteriorated so much lately.

Interestingly, society has polarised, including on the issue of Crimea: friend-foe, one of us-one of them, black-white, patriot-liberal. If you extrapolate this for domestic policy, these judgments are often mirrored as well. You have made known your position on Crimea and explained your line of thinking: historical circumstances, political injustice, threats, risks, the referendum and the decision.

There are other views as well on this problem, including in our brotherly nation of Ukraine, which are formulated using words, such as violation of Ukraine's territorial integrity. You can't easily overcome such a view of this event, all the more so since most nations, including Russia, are very sensitive with regard to territorial integrity. You have signed an addendum to Article 282 of the Penal Code, which will enter into force on May 9, that holds that public calls through the media for separatism or violation of territorial integrity, will be punished by up to five years in prison. This is a serious matter.

That is, hypothetically, if someone writes in a newspaper on May 10, "I believe that Crimea is part of Ukrainian territory," he or she may well be found guilty. This doesn't mean that this will necessarily be the case, but there will be grounds for that.

I have a feeling of narrowing of space in this situation. The media is treated almost as the main source of troubles: if someone steals money in the Defence Ministry, or someone has a go at someone, or someone shoots someone, no one is going to shut down the Ministry. They'll start looking for the corrupt official, put him behind bars, etc.

However, if a journalist misuses a word, they issue an instant warning. The second warning means that the media outlet will be closed and typesetters, editors

and proofreaders will be on the receiving end, even though they have nothing to do with such a misstep. They cut off TV channels just because they don't like their tone of voice.

However, while I understand your message about the need to heed the majority, I still think that the 21st century is all about high-quality discussions. It's not about being pushy, deciding things by the majority or hooting, but rather a meaningful debate.

Here's my question. As President, do you need such a nationwide consensus in order to be able to conduct your policies, or do you need the majority in order to carry out your policies, allowing others to breathe and live, including those in the media with alternative views?

Vladimir Putin: I pretty much answered your question when I said that we will be guided by the opinion of the majority and build our policy based on their interests. Of course, we need to hear other points of view, even if they come from a minority. This is my position. You know, in my everyday work I always listen to what my colleagues have to say. Even if I disagree with them, I always give them a chance to speak and always think that maybe there's something useful in what they are saying. Before taking a decision, I always try to discuss the problem again, this time from the perspective of the colleague who has a different opinion. This is important in everyday work and in politics, both domestic and international. This is a necessary thing. That's how I feel about it. I believe this answers your question.

With regard to other issues that you mentioned in your remarks, it's normal to think like that about our relations with the West. Who does not want our relations to be good? We want this. We are part of the common civilisation, which is mostly Christian civilisation. But even Russian Muslims and Russian Jews are very close to us. Fundamentally, we share the same culture. We want our relations to be good, but we simply cannot afford to have someone always presume that we will give up our interests and move the line all the time in exchange for someone agreeing to be friendly with us. For being allowed to sit next to someone, we must make concessions here and there and turn a blind eye to certain things. This is impossible. In the end, we have reached a point beyond which we cannot retreat. You also mentioned our motives. We want to establish good relations with all our partners in the West and the East. Of course, we certainly need to analyse a variety of viewpoints to resolve this or that problem as we develop these approaches.

Kirill Kleymenov: Let's hear one more point of view: with us in the studio is Viktor Baranets, an observer with the newspaper Komsomolskaya Pravda. Let's give him the floor.

Dmitry Shchugorev: He's also a colonel, journalist and military expert.

Viktor Baranets: Good afternoon, Mr President.

First, I would like to make a small remark. Dear friends, I would like to ask all of you, those who are listening today and who are sitting in this room, not to use the words "little green men." I think it is insulting for the people who serve their country, some of whom are present in this room. Let us leave this term to history, to the arrogant manner of addressing soldiers and officers that was current during the times of Vasilyeva and Serdyukov. Thank you.

Now for my question to you, Mr President. It is hard to name an event over the past two decades that injected into the hearts of millions of Russians a more powerful charge of genuine patriotism, rather than poster patriotism, that helped unite the people and the army. This is our most cherished national possession.

And what do we see on the other side? On the other side we see liberal "hamsters" of every stripe who are trying to plunge their little rotten teeth into these pillars of our national pride. Yes, of course, people may have different opinions. But I do not understand what other opinion there may be when 2.5 million people are knocking on our door, asking for help. Are we supposed to tell them, "Guys, get lost, we have enough problems in Russia as it is?" No, we are Christians, we are Russians, and we have opened our door and said, "Welcome home, come back and we shall live together."

So this is my question to you: we have seen all these provocative marches which carried posters reading "No to War," and I would like to ask these people, these provocateurs who were marching in Moscow waving posters that read "We Are Against War," where did they see war in Crimea? Did they see anything similar to what is happening in the southeast now? If we had not brought back Crimea to where it belongs today Crimea would have turned into a huge Maidan or into what we are witnessing today in the southeast of Ukraine.

Mr President, I think the challenge facing the state today is to defend our victories, the Victory in the Great Patriotic War and this other national victory for which we are responsible to ourselves and our posterity.

Thank you very much.

Vladimir Putin: Thank you for your views and your uncompromising stand on sensitive problems and issues. I think you are right, but we should use a different set of instruments in conducting the discussion. On the one hand, one cannot apply harsh epithets to the people who have made a substantial, if not the decisive, contribution to enabling the people of Crimea to express their will. They are our servicemen. As I have already said, their actions were very courageous, decisive and highly professional. Analysts will yet study and draw lessons from what has been done and how.

But on the other hand the “hamsters” have sharp teeth, they have no rotten teeth and they don’t need to see a doctor. If they had bad teeth they would all die out. So let us not talk about “little green men” on the one hand and “hamsters with rotten teeth” on the other, let us upgrade the culture of our communication and our discussion. It would do us all good.

Kirill Kleymenov: Mr Putin, I suggest we do a lightning round for some questions.

Masha and I have selected some and I know that you usually select the most original and interesting questions.

Vladimir Putin: Sure.

Kirill Kleymenov: Please give short answers, if possible.

Dmitry Dutrov from Tambov Region asks: “There is a trend in the Government of replacing old governors. Will this positive trend continue?”

Vladimir Putin: You know, this is not a trend. There is no trend at all.

Moreover, I will tell you that the governor corps in Russia is healthy and strong. They are ready to take responsibility for their regions. Many of them achieve excellent results.

I can see Mr Kadyrov here. He does a lot for his region.

Only a few years ago, Minutka Square [in Grozny] was totally run-down. I remember flying over Grozny in a helicopter and there was nothing to look at. We even raised the issue of moving the Chechen capital to another city because we didn't believe it would be possible to restore it. Now the city is prospering. A lot has been done in Krasnodar Territory, especially in Sochi.

Of course, there are still problems in the North Caucasus – for example, unemployment and other problems in Ingushetia and Dagestan. But there has been some progress. And it is amazing what is happening in other regions, like Kaluga Region, which, with its scarce natural resources, has achieved outstanding results in increasing regional GDP. However, if we encounter any ethical violations, any abuse of power, we reserve the right to make the appropriate personnel decisions.

Maria Sittel: Mr President, our audience is curious. What is your favourite movie?

Vladimir Putin: “Chapayev”, of course.

Kirill Kleymenov: Here is another interesting question. “Mr President, first I have to say you look tired – please take a few days off. Second, I'm very concerned with the following issue: When will the Russian coat of arms appear on Russian bank notes?”

Vladimir Putin: It is for the Central Bank to decide according to Russian law. It hasn't occurred to me, but I will think about that.

Maria Sittel: By the way, you have your own folder, Mr Putin. You can take out questions yourself if you like.

Vladimir Putin: Yes, I have chosen some. I don't know if they are interesting but they should be informative at least. We have just talked about replacing governors. I hope this doesn't really concern governors. This is not even a question, just someone thinking out

loud: “Maybe if you publicly execute at least 350 major crooks, like they did in China, your people will support you.”

You know, I would like to stress that in our country thieves have never been executed. It is not the severity of the punishment but its unavoidability. This is what we strive for. But I read this question to let officials at various levels of government know what the public mood is like.

Maria Sittel: Why don't you make official state visits to the United States? Are they not allowing you to enter the country or do you not want to go?

Vladimir Putin: Nothing of the sort. We were planning some contacts but our American counterparts decided to suspend this work. But I hope that eventually we will be back on the same track.

Here's a question: “Will there be another iron curtain?”

The iron curtain is a Soviet invention, a domestic phenomenon. We are not going to isolate our country, our people and our society from anyone. No, there won't be an iron curtain.

“Mr Putin, why does the United States do whatever it wants and remain unpunished while Russia has to face punishment?”

You know, this seems to be a simple question but it is quite important. The United States is a major global player and at a certain point it seemed to think that it was the only leader and a unipolar system was established. Now we can see that it is not the case and everything in the world is interrelated. If they try to punish someone like misbehaving children or to stand them in the corner on a sack of peas or do something to hurt them, eventually they will bite the hand that feeds them. Sooner or later, they will realise this.

So what is the score? You know, I'd rather not speak metaphorically about this. This is not a sports competition. We are partners and I hope our future entails good development prospects because our interests correspond in many aspects. These include international security, non-proliferation of weapons, combating terrorism, and the global economy.

These are our common interests with the US. We will not be able to succeed in these issues if we don't join forces.

"We live some 250 km away from Moscow..." Then it says that their village is in quite a poor condition. "Could you send your representatives here?" The Governor is my representative there. So I'm asking the Governor to immediately go there and see what's happening. This village is in Tula Region. Therefore, this task is for the Tula Governor.

Here is an interesting question about the Crimean economy and banking system. The first part of the question concerns certain difficulties, including economic issues. The second part is as follows: "I hired a car on lease from Privatbank. It will take me only two years to repay the loan. The car officially belongs to Avtoprivat Group in Kiev. Privatbank no longer operates in Crimea. What am I supposed to do?"

Please use the car and don't worry. If Mr Kolomoisky and Mr Finkelstein don't want your money, it's their problem.

But another and more important question concerns private bank accounts, which is very serious. I would like to note that we have a database of Privatbank and Oschadbank depositors. We will of course act according to the data we have. But the decision is almost made, so if people lose any money they have in their accounts we will repay them up to 700,000 roubles in line with Russian laws.

Vladimir Putin: "Will you agree to remain president for life?" No.

"Mr President, how many hours do you sleep?" Six, as I said.

"I'm Daniil Chuchin from Shchetino Children's Home #1. Could you say 'hello' to me?"

Daniil, hello to you and all your friends and acquaintances, to everyone living in this children's home. I hope we'll meet one day.

Here's an interesting question from Albina. She's six years old and her question is about Russian-US relations. Just wait, you'll like it.

“Do you think President Obama would save you if you were drowning?”

I sure hope this doesn't happen, but you know that there are personal relationships as well as relations between governments. I can't say that I have a special personal relationship with the US President, but I think he is a decent man and brave enough. So, I think he definitely would.

“I'd like to have a Q&A like this with our ministers at least once a year. Otherwise, it's not democracy.”

You know, the Government has established a whole agency – the Open Government. If such questions are being asked now (I picked this one out on purpose), that means the Open Government is not so open after all and isn't doing such a good job.

Vladimir Putin: “We're asking you questions now. But what if these questions were put to the regional Governor?”

As you know, in many of Russia's regions, Governors regularly appear in the media and reach out to the public. This is something I know for a fact.

This question is from Rostov Region. And if this is indeed an issue, the Rostov Region Governor should draw the appropriate conclusions. Hopefully, he'll listen to this.

“If you weren't President, which of the Russian regions would you want to live in?”

St Petersburg, of course. That's where I was born, after all. It's my home city.

Christina says she is “ready to come to Moscow with her parents to shake my hand.”

Thank you very much, Christina. Let me invite you and your parents to the Victory Day parade on May 9.

Vladimir Putin: I thought for a long while about whether to answer this question at all. It is not a question that would fit in a blitz Q&A section. This is a philosophical question. I'll

read it out. This question was asked by Yekaterina Shcherbonos from St Petersburg: “I’m asking you as a politician but I’d like to hear your personal rather than political opinion. What is the Russian people to you? By virtue of your position you’ve probably been to all countries of the world. You’ve seen a tremendous number of nations and ethnic groups and learned about their cultural traditions, national habits, cuisine and arts. In this context I’d like to ask you: In your opinion, what does it mean to be Russian? What do you think about their pluses and minuses, their weaknesses and strengths?”

Well, some specialists believe that the people as a community do not have specific features, that only individuals have them. I find it hard to accept this position because if people are using the same language, live in a common state, on a common territory with a certain climate, if they have common cultural values and history, they are bound to have some common features.

As for our people, our country, like a magnet, has attracted representatives of different ethnic groups, nations and nationalities. Incidentally, this has become the backbone not only for our common cultural code but also a very powerful genetic code, because genes have been exchanged during all these centuries and even millennia as a result of mixed marriages.

And this genetic code of ours is probably, and in fact almost certainly, one of our main competitive advantages in today’s world. This code is very flexible and enduring. We don’t even feel it but it is certainly there.

So what are our particular features? We do have them, of course, and I think they rely on values. It seems to me that the Russian person or, on a broader scale, a person of the Russian world, primarily thinks about his or her highest moral designation, some highest moral truths. This is why the Russian person, or a person of the Russian world, does not concentrate on his or her own precious personality...

Of course, in everyday life we all think about how to live a wealthier and better life, to be healthier and help our family, but these are still not the main values. Our people open themselves outward. Western values are different and are focused on one’s inner self. Personal success is the yardstick of success in life and this is acknowledged by society. The more successful a man is, the better he is.

This is not enough for us in this country. Even very rich people say: “Okay, I’ve made millions and billions, so what next?” At any rate, everything is directed outward, and oriented toward society. I think only our people could have come up with the famous saying: “Meeting your death is no fear when you have got people round you.” How come? Death is horrible, isn’t it? But no, it appears it may be beautiful if it serves the people: death for one’s friends, one’s people or for the homeland, to use a modern word.

These are the deep roots of our patriotism. They explain mass heroism during armed conflicts and wars and even sacrifice in peacetime. Hence there is a feeling of fellowship and family values. Of course, we are less pragmatic, less calculating than representatives of other peoples, and we have bigger hearts. Maybe this is a reflection of the grandeur of our country and its boundless expanses. Our people have a more generous spirit.

I don’t want to offend anyone by saying this. Many peoples have their own advantages but this is certainly ours. An intensive genetic, informational and cultural exchange is going on in the modern world. There is no doubt that other peoples have precious and useful things that we can borrow, but we have relied for centuries on our own values, which have never let us down and will stand us in good stead in the future.

Thank you very much. (Applause.)

Maria Sittel: Thank you, Mr President.

Kirill Kleymenov: Thank you.

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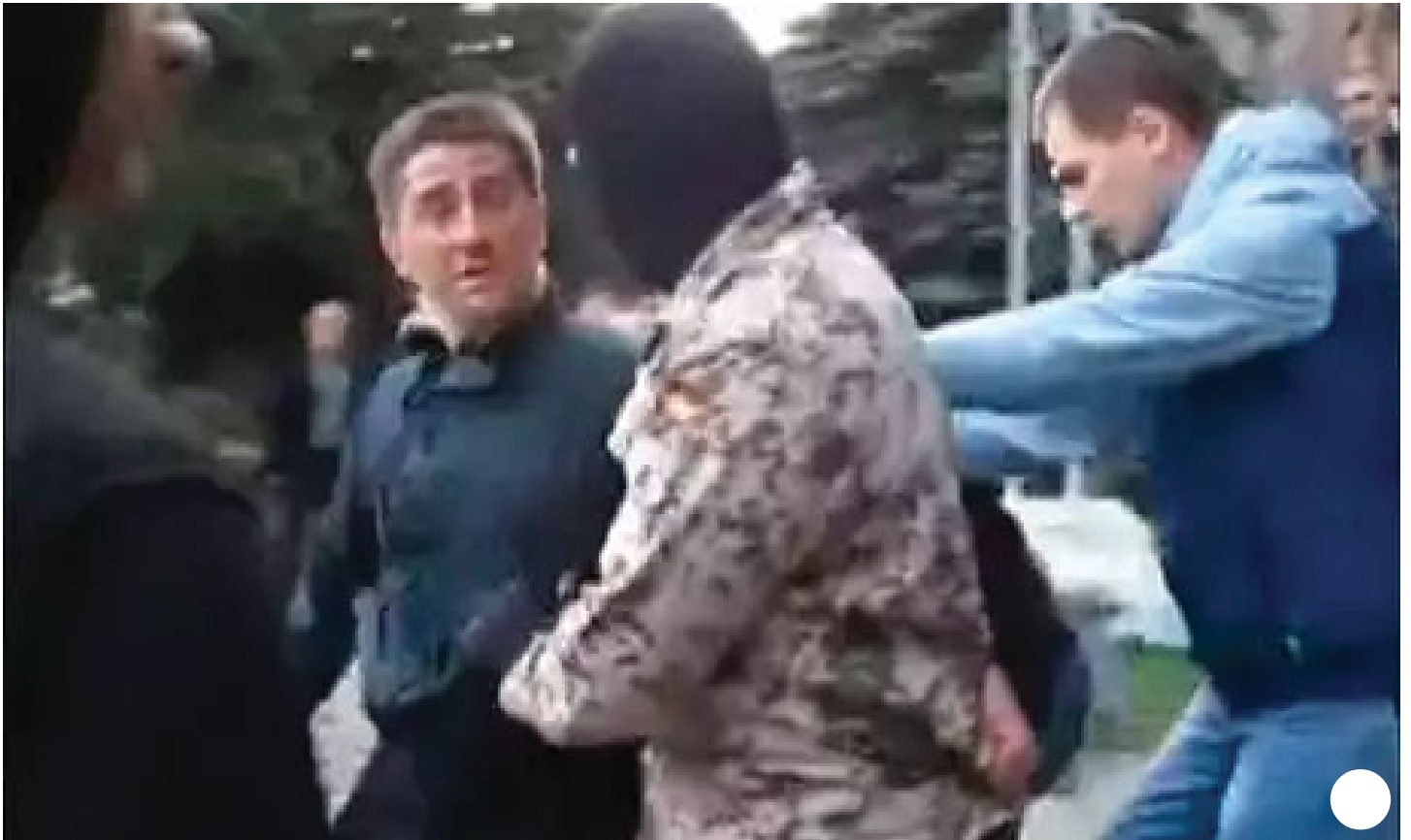
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Annex 507

Luke Harding and Oksana Grytsenko, Kidnapping of Ukrainian Patriots Has Russia's Full Support, Says Kiev, Guardian (23 April 2014)



Kidnapping of Ukrainian patriots has Russia's full support, says Kiev

Case of Vladimir Rybak is latest in a string of kidnappings which Kiev blames on Russia and its undercover agents

Luke Harding in Horlovka and **Oksana Grytsenko** in Kiev

Wed 23 Apr 2014 12.34 EDT

The last time Vladimir Rybak was seen alive was on Thursday 17 April. The local councillor was walking away from the city hall in the eastern Ukrainian city of Horlovka after taking part in a pro-Ukrainian flashmob in the central square. Three days earlier, separatists had seized the government building, taking down the Ukrainian flag and replacing it with the tricolour of the Donetsk People's Republic.

According to friends, Rybak, who was 42, made no secret of his strong anti-separatist views. "He was entirely open - and at times impulsive," fellow councillor Yurii Zhuk said. After the demonstration Rybak tried to barge his way into the Horlovka city hall and take down the rebel flag. A video captured what happened next. Pro-Russian protesters jostled Rybak; they refused to let him inside; a youth in a balaclava grabbed his arm and led him away.

Zhuk said that Rybak and a friend then left the square, tracking away from its Lenin statue, and headed towards the city's Palace of Culture. A Kia car pulled up, and four men in masks and military fatigues jumped out and grabbed him. Rybak's friends assume the kidnappers must have had a gun. "Vladimir was a sportsman and an ex-policeman. He knew how to handle himself," Zhuk said.

Over the weekend, Rybak's battered body was found in a river near the separatist stronghold of Slavyansk, 60 miles away. According to investigators, he had been tortured. There were stab marks on his stomach and bruising on his chest. Rybak's kidnappers tied a sandbag to his body and drowned him while he was unconscious. On Wednesday, his widow Elena, a 49-year-old doctor, and 25-year-old son Yura, went to Slavyansk to retrieve his body.

The gruesome case is the latest in a string of kidnappings and murders in eastern Ukraine which Kiev blames on Russia and its undercover agents. Law and order in Slavyansk and surrounding areas of the Donetsk region has deteriorated dramatically. In Kramatorsk, pro-Russian gunmen hijacked the security agency HQ. They also beat up the city's deputy mayor and kidnapped its police chief - both supporters of Ukrainian unity.

The situation in Slavyansk, the separatists' fortified capital, appears to be one of gun rule. Pro-Russian militias continue to hold an American journalist, Simon Ostrovsky, taken hostage early on Tuesday, as well as several Ukrainian reporters including Irma Krat. The gunmen have threatened western correspondents, evicted Roma families from their homes and apparently imprisoned the local mayor.

Vyacheslav Ponomaryov, the "people's mayor" of Slavyansk said that Ostrovsky wasn't a hostage as such but was being "held" by his militia. He described the journalist as a "provocateur" and berated the media for not reporting on the fate of pro-Russian activists arrested by Kiev for separatism. The mayor gave no indication of when Ostrovsky might be released. He said he was being kept in good conditions, with enough to eat, and the opportunity to wash.

In the past week, 16 people have been kidnapped in Slavyansk and Horlovka, and two murdered, including Rybak. Rybak was a deputy for the Batkivshchyna party of Ukraine's acting president, Olexsander Turchynov, who announced on Tuesday that Kiev would now restart military operations against pro-Russian separatists in the east. The body of a second party supporter, unidentified, was found near Rybak's. Both had been tortured to death, Turchynov said.

"The terrorists who effectively took the whole Donetsk region hostage have now gone too far, by starting to torture and murder Ukrainian patriots. These crimes are being committed with the full support and connivance of the Russian Federation," he said on Tuesday.

There were few signs of an offensive on Wednesday, however. Ukraine's interior ministry claimed it had flushed gunmen out of a small town called Svyatogorsk, just outside Slavyansk, but there had been no previous reports of gunmen in the town.

It is unclear if Kiev's latest military operation will be more successful than a similar attempt last week.

That ended in humiliating failure when well-organised pro-Russian gunmen captured six Ukrainian armoured vehicles sent to Kramatorsk, 10 miles from Slavyansk. Either way, it is clear that the international deal to defuse the crisis, agreed last week in Geneva, is dead and buried.

The EU called on Russia on Wednesday to ensure an immediate end to the kidnappings and killings in eastern Ukraine. But Russia's foreign minister, Sergei Lavrov, accused Kiev of violating the Geneva statement, and warned that Russia would respond if its interests were attacked in Ukraine.

Lavrov used an interview with the Russian state-controlled broadcaster RT to accuse the US of "running the show" in Ukraine, saying it was quite telling that Kiev announced a new military campaign immediately after a visit by the US vice-president, Joe Biden. "If we are attacked, we would certainly respond," said Lavrov, who recalled the 2008 war with Georgia over breakaway South Ossetia.

In the capital, Kiev, Ukraine's SBU security service revealed details of Russia's alleged role in Rybak's abduction and murder. Officials named two Russian agents as the masterminds behind special operations in the east of Ukraine. Both agents work for Moscow's GRU military intelligence wing, the officials said.

Zhuk said he last saw Rybak in Horlovka's central square half an hour before his abduction. They had agreed to meet at 10am the next day. "That someone can be kidnapped in 2014 in the centre of Europe is terrible. I don't have words," he said.

Who was responsible? "Radical elements who exist in the city. The fact that he was found in Slavyansk confirms this was the work of separatists."

According to Zhuk, the majority of Horlovka - a mining and industrial city of 275,000 people - do not support the separatists' cause. But he said Russian television had had a brainwashing effect, with many people now unable to tell "what was true and what a lie". He stressed: "The big majority are peaceful."

Zhuk described calls for an anti-Kiev referendum on 11 May as completely absurd, saying: "There is no legal basis for it." He is one of three representatives in the 75-seat city assembly for the Europe party.

The police had done little to halt the breakdown in public order, he said. "They are demoralised, and split into two halves: one group supports the Donetsk People's Republic, the other Ukrainian unity. There's no unified leadership. Nor are there any clear orders from Kiev."

He said he had sympathy for young officers, aged 25 or so, who were supposed to deal with angry crowds armed with just a stick.

Rybak was elected to Horlovka's city council in October 2010. A father of two, he had previously worked as a detective, heading up the investigations unit.

Another councillor - Oleg Gurbanov, an independent - said he had disagreed with Rybak over many topics, but respected him for his forthright views. "I absolutely condemn the people who did this. Everybody has a right to life," Gurbanov said.

The Donetsk People's Republic flag still flies above the building, even though normal work resumed last week after the separatists left.

"I want a united Ukraine. But we've left [the flag] up there for now to try and avoid conflict," Vasily Mirozhnik, head of public affairs, explained. Who was behind Rybak's murder? "It's a

riddle," he said.

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Topics

Ukraine

Annex 508

Ukrainian Deputy Rybak Was Tortured and Then Drowned, MKRU (23 April 2014)

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MKRU NEWS LATEST ISSUE

Ukrainian Deputy Rybak Was Tortured and Then Drowned

The Interior Ministry of Ukraine blames the rebels for his death

04/23/2014 at 08:35, number of views: 38,893

[social media icons]

New victims appeared last night during a confrontation in eastern Ukraine: the bodies of two men showing signs of torture were recovered from a river near Slavyansk. One of them turned out to be Gorlovka Deputy Vladimir Rybak. Kyiv blamed the local supporters of federalization for these deaths.

[Photo]

[Caption:] Photo: Marina Perevozkina

The body of one of the two men found in the river near the city of Slavyansk has been identified as deputy Vladimir Rybak, the Interior Ministry of Ukraine announced on Tuesday. "Today the body of one of the two deceased men was identified. He is Gorlovka City Council deputy from the Batkivshchina party Vladimir Rybak. The cause of death of both deceased men was multiple bodily injuries as a result of torture, with the still alive, unconscious victims subsequently being drowned," the report says.

The bodies were found when Slavyansk rebels were searching the locale for dead and wounded after the attack on the people's self-defense checkpoint at the entrance to the city. According to "People's Mayor" of Slavyansk Vyacheslav Ponomarev, signs of torture were found on the bodies. Last night Ponomarev did not rule out the possibility that the killing could be a provocation and suggested to wait for official identification.

As the Interior Ministry reports, citing a witness who submitted a statement, unknown individuals kidnapped the deputy in Gorlovka on April 17. The witness told the militia that four men in camouflage uniforms and masks forcibly put the deputy in a car and took him to an undisclosed location. According to the Interior Ministry, the witness's testimony is supported by an available video recording.

The report says that according to the investigation, the people who took over the Security Service of Ukraine building in the city of Slavyansk are involved in the torture and murder of Rybak and the second deceased man.

Rybak was known for his sympathies to the Maidan and his skeptical attitude to the "Donetsk People's Republic." He organized demonstrations "For a United Ukraine" in Gorlovka.

Pavel Khrennikov

Source: RIA Novosti

[social media icons]

Annex 509

MKRU, SBU - People's Mayor Slavyansk Discussed with an Officer of the GRU RF How to Red
of the Corpse of Deputy Rybak (24 April 2014)

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16+
MKRU

May 16, 2018, time 19:43
Print version

SBU: "People's Mayor" of Slavyansk discussed with an officer of the GRU RF how to get rid of Deputy Rybak's corpse

The Ukrainian security services made public an audio recording of negotiations over the high profile murder

04/24/2014 at 15:30, number of views: 22,047

[social media icons]

In the recording provided by the Security Service of Ukraine, the head of the Russian commandos asks the "People's Mayor" of Slavyansk to "resolve the issue with the stiff," to which the other responds: "With the corpse?... I'll go now and solve the issue of burying that punk." GRU RF lieutenant colonel Bezler also discusses the kidnapping of the Gorlovka parliamentarian.

[Photo]

[Caption:] Photo: AP
Vyacheslav Ponomarev

The Security Service of Ukraine suspects Vyacheslav Ponomarev, "People's Mayor" of Slavyansk and leader of the citizen militia of Donbass, and Igor Bezler, lieutenant colonel in the Main Intelligence Directorate (GRU) of Russia (his personal code name is "Bes") and the head of the Russian commandos Igor Strelkov (an officer in the GRU RF) of being directly involved in the recent heinous killing of Gorlovka City Council deputy Vladimir Rybak.

In confirmation of its "suspicions" the Security Service of Ukraine made public an audio recording of negotiations in which Ponomarev, Bezler and Strelkov discuss Rybak's murder. In particular, it can be heard in the recording how the "People's Mayor" of Slavyansk decides how to dispose of the corpse together with the leaders of the Russian commandos. Strelkov asks Ponomarev to "resolve the issue with the stiff" ("Slava, you please resolve the issue with the stiff. So, they drag them away from us as quickly as possible. What's he doing lying here; he stinks"), to which the other responds: "with the corpse?... I'll go now and resolve the issue of burying that punk." GRU RF lieutenant colonel Bezler also discusses the Gorlovka parliamentarian's kidnapping on the recording.

We remind readers that City Council deputy from the Batkivshchina party Vladimir Rybak, who had earlier removed the flag of the self-proclaimed "Donetsk People's Republic" from the Gorlovka City Council building and was generally known for his sympathies with the Maidan (in Gorlovka he organized demonstrations "For a United Ukraine") was kidnapped in Gorlovka, Donetsk Region, on April 17. According to witness testimony and a CCTV recording, four men dressed in camouflage uniforms and masks forcibly put him in a car and took him to an undisclosed location.

On April 19 the parliamentarian's body and the body of another man were found in the river near the city of Slavyansk. According to information from the Interior Ministry of Ukraine, the cause of death of both of the deceased men was multiple bodily injuries as a result of torture, with the still alive, unconscious victims subsequently being drowned.

[Recording play button]

On April 23, the Security Service of Ukraine announced the alleged account of the murder. According to the special services, GRU RF lieutenant colonel Bezler ordered the head of the self-proclaimed Gorlovka militia to neutralize Rybak. He ordered the member of the Russian military to kidnap the Gorlovka parliamentarian and then, after putting him in a car, to take him to an agreed place and beat him. At the same time, Bezler himself planned to visit the place where the deputy was being detained. "Strelok" (Igor Strelkov) in turn ordered that Rybak be delivered to the separatists' headquarters in Slavyansk in order to speak with him in person. Later Strelkov gave "People's Mayor" of Slavyansk Vyacheslav Ponomarev the instruction to remove the body of the murdered Rybak from the headquarters.

GRU RF lieutenant colonel Igor Bezler has already appeared in the Ukrainian media. In mid April a video appeared on the Internet in which a person introducing himself as a "lieutenant colonel in the Russian army" appears before militia officers after the Gorlovka Interior Ministry precinct came under the control of the local self-defense forces. Later the Ukrainian media acknowledged that the person in camouflage was local resident Igor Bezler. As the UNIAN agency reported, citing the Donetsk portal "Ostrov," earlier Bezler "headed the Prostor municipal funeral services business, from which he was fired in 2012 after being accused of stealing enclosures and tombstones, and also for extorting money from elderly people for a place in the cemetery." At the same time, according to Internet portal URA-Info, Bezler is indeed a retired lieutenant colonel, but of the Ukrainian special forces, not the Russian special forces.

Natalia Demidyuk

New Ukraine. Chronicle of Events

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Annex 510

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Annex 511

In Donetsk Region, an Orthodox Priest Was Killed, Gazeta (5 May 2014)

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5/14/2018

In Donetsk Region an Orthodox Priest Was Killed: Gazeta.Ru | News

Gazeta.ru

In Donetsk Region an Orthodox Priest Was Killed
05/09/2014 | 17:38

Priest of the Ukrainian Orthodox Church of the Moscow Patriarchate Pavel Zhuchenko was killed near one of the checkpoints in Donetsk Region, **Interfax** reports.

As the agency notes, mutually exclusive versions of what happened are coming from the scene of the events.

The editor-in-chief of Internet publication “Ostrov,” Sergey Garmash, wrote on his **Twitter** feed that the priest lived next to the checkpoint had attempted to call on the supporters of federalization to put down their arms.

For his part, Russian Orthodox activist and head of the Corporation for Orthodox Action Kirill Frolov stated that the murdered Orthodox priest was providing spiritual care for the rebels.

“Archpriest Pavel Zhuchenko, rector of the Church of Dmitriy Donskoy in the Donbass city of Druzhkovka was traveling in a car near the Kondratievsk checkpoint when he was shot right in the heart,” he said.

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Annex 512

Zhirinovskiy Gave a Military Vehicle to the Ukrainian Militiamen, 161.ru (6 May 2014)

Zhirinovsky Donates a Military SUV to Ukrainian Militias

 /text/gorod/790822.html161.ru

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May 6, 2014 12:40
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[Vladimir Zhirinovsky](#)

LDPR leader has donated his personal Tiger SUV to Ukrainian militias today.

Vladimir Zhirinovsky sent his gift to patriots of Luhansk, defenders of the city who stand up for their rights and freedoms.

“This vehicle will come in handy in defensive operations. It is manufactured in Russia at a Nizhniy Novgorod plant. It is usually bought by the Ministry of Defense, the Federal Security Service, the Ministry for Emergencies. Civilians don’t buy it much. Meanwhile, I got it as a present right from the first pilot batch. Russia must help residents of Ukraine’s southeast against whom the Kyiv authorities have launched a special operation. We must send them helmets, bullet-proof vests, dry rations, bandages, among other things,” Zhirinovsky said.

“The SUV will be driven to Rostov Oblast where it will be handed over to Ukrainian militias at the border with Ukraine. The Tiger costs \$60,000 after rolling off the assembly line. I am donating it as a gift: I can spare it. They should not be driving the car with Moscow number plates in Luhansk, which is why we need to formalize a sale to a person living there. I’m giving it away for 1 rouble. We will pay all taxes and hand over the registration slip to them. The militias will register it with the local Traffic Safety Inspectorate,” the LDPR leader explained.

All 161.ru video materials are available [here](#). Nikolay Muravin

Photo courtesy of the Avtovolk.ru website. Video courtesy of the LDPR Channel on YouTube

Like the article? Share it with your friends!

If you have witnessed an interesting event, send photos and videos to 61@rugion.ru.

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Next: [Starocherkassk Preserve Museum Waiting for New Exhibits from Natives of Donetsk](#)

Annex 513

The Body of the Heads of the Krasnolimanskaya Prosvita Was Found in a Burned Car,
Radiosvoboda (8 May 2014)

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May 16, 2018, Kyiv 7:57 p.m.

NEWS | EVENTS

Body of Krasnyi Lyman Prosvita Leader Found in a Torched Car

May 8, 2014, Kyiv 1:37 p.m.

Kharkiv police have discovered the body of pro-Ukrainian activist Valeriy Salo, who vanished the other day, in Hrekiivsky Forest (Luhansk Oblast). He headed the Prosvita chapter in Krasnyi Lyman, Donetsk Oblast, according to a Radio Svoboda correspondent.

A torched car with Valeriy Salo's charred body was found today. The day before, May 7, he was abducted by militants of the so-called "People's Donetsk Republic". Radio Svoboda learned about this from Mariya Oliynyk, deputy head of the Donetsk regional chapter of Prosvita.

"On May 7, militants of the Donetsk People's Republic abducted Valeriy Salo, a resident of the village of Shandryholove, Krasnyi Lyman District, a farmer who supported an indivisible Ukraine," Mariya Oliynyk said, adding: "They were just preparing for the meeting of the local chapter. His car was flagged down in the center of the village by armed men. They beat him up unconscious and put him in the trunk of his car before speeding away. Today the torched car with his body was found in Luhansk Oblast."

Radio Svoboda have been trying to receive comment from the Donetsk Regional police regarding this situation and the investigation into the disappearance and murder of Valeriy Salo.

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Annex 514

Ukrainian Orthodox Church Confirms Priest Murdered in Donetsk Region, Kyiv Post (10 May 2014)

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Ukrainian Orthodox Church confirms priest murdered in Donetsk region

 kyivpost.com/article/content/war-against-ukraine/ukrainian-orthodox-church-confirms-priest-murdered-in-donetsk-region-347180.html

May 10, 2014

Popular

on social media

[EU condemns harassment of Jehovah's Witnesses in Russia to OSCE4022 Honest History: How Russia uses 'one nation' myth to justify imperialism 326 Russia ordered to pay \\$159 million in compensation to Ukrainian companies in ... 205](#)

“The confirmation [of the priest’s murder] exists. But it is unclear for now at which block post this happened, different information exists... No details exist for now,” head of the Ukrainian Orthodox Church synod information and enlightenment department, Archpriest Heorhiy Kovalenko told Interfax on Friday.

According to Kovalenko, getting information is complicated by the fact that the priest killed was outside staff for several years and did not maintain contact with eparchial leadership.

“He virtually does not have any communication with the eparchy, he is outside staff for several years. Everything the eparchy knows is what happened [the murder] and the rest is rumors,” Kovalenko said. The name of the deceased is Father Pavlo, he said.

Priest of the Ukrainian Orthodox Church of the Moscow Patriarchy Pavlo Zhuchenko was killed near a block post in the Donetsk region, local on-line mass media outlets and Orthodox activists have said.

The priest lived next to the block post, tried to urge opponents of the Kyiv authorities to surrender arms and was killed as a result of this, editor-in-chief of the Island on-line mass media outlet Serhiy Harmash tweeted.

The priest had three children.

“Monsters shot eight bullets at the priest from automatic firearm,” the Ukrainian Prosecutor General’s Office press office said. According to the information of the Ukrainian Prosecutor General’s Office, the crime was committed at a block post at the exit from the town of Druzhkivka on May 8. The law enforcement authorities have started an investigation of the incident.

“Terrorists being coordinated by an outside aggressor” are responsible for the murder, the Ukrainian Prosecutor General’s Office said.

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Annex 515

Aleksander Vasovic & Maria Tsvetkova, Elusive Muscovite with Three Names Takes Control of Ukraine Rebels, Reuters (15 May 2014)

World News

May 15, 2014 / 3:06 AM / 4 years ago

Elusive Muscovite with three names takes control of Ukraine rebels

SLAVIANSK, Ukraine/MOSCOW (Reuters) - He is a man with three names, sought by Ukrainian intelligence as the top Russian operative in the separatist east. He moves through the streets in a black Mercedes, his face with pencil moustache hidden behind tinted windows, and his aim is to "destroy" Ukrainian forces that venture onto his territory.

In a leaflet distributed this week in the rebel Donetsk region, "Colonel Igor Strelkov" assumed command of all rebel forces there and called for Russian army help to ward off what he calls the threat from the Kiev "junta" and from NATO.

To Kiev and its Western allies, Strelkov is living proof that Moscow is behind the uprising in eastern Ukraine, despite its denials, and trying to replay the scenario that saw it seize the Crimea province in March.

The separatists have said little about his identity. He is known to the fighters he commands as "Strelok" - "the Shooter". Kiev says he is actually an agent of Russia's GRU military intelligence. Residents of a Moscow suburb say he is a mild-mannered neighbor they have known for years as Igor Girkin.

Whether Strelkov, Strelok or Girkin, he is now rarely glimpsed in public, driven behind tinted windows around the town of Slaviansk, which his men have turned into the heavily fortified redoubt of their insurrection.

His leaflet, published on the website of separatist politician Pavel Gubarev on Monday, was issued in the name of "The Commander-in-Chief of the Donetsk People's Republic".

He gave Ukrainian troops 48 hours to "pledge an oath of allegiance to the Donetsk People's Republic or leave its territory". Members of the National Guard and other Ukrainian forces would be detained or "destroyed on the spot".

"Having in mind the emergency situation in the country, genocide of the Kiev junta against Donetsk's population and the threat of NATO intervention, I am asking the Russian Federation to provide military assistance to the DPR," the document said, referring to the Donetsk People's Republic by an acronym.

Asked about his background, separatist spokeswoman Stella Khorosheva said Strelkov was an ethnic Russian and a veteran of the Soviet and Russian armies, but gave no other details of his origins or citizenship.

“His aides do not know if he has any other names,” she said. “He has rich military experience and holds the rank of colonel.” He was not available to interview, she added.

For a long time the only image the world had of Strelkov was a wanted-poster sketch issued by Ukraine’s SBU security service.

Then last month Russian newspaper Komsomolskaya Pravda issued a video of an interview with what appeared to be the same person with the same pencil moustache.

In the video, Strelkov said he came from Crimea and that most of his fighters were veterans of the Russian or Ukrainian armies with battlefield experience. Their weapons were all seized from arsenals in Ukraine, he said. Moscow had “not given us a single gun, or a single bullet”.

The apparent acknowledgement of a Crimea link is important, because Kiev says the same Russian agents who seized that province - which Moscow annexed in March - are now behind the uprising in the east.

SHINING ARMOUR

Residents of a sleepy neighborhood in northern Moscow said they recognized their neighbor when they saw him on Russian television last month introducing himself as the leader of the militia in Sloviansk.

The man they knew as Igor Girkin has lived most of his life in the nine-storey building on Shenkursk Way where his mother, two children and former wife also reside, neighbors said.

Galina Ivanovna, who lives two floors below him, said she saw him last around six months ago.

“He’s always been very polite and very quiet, though I didn’t know him well. He always wore a tie, would walk to work. Nothing about him was particularly outstanding,” she said on the apartment landing. She declined to give her last name.

Vladimir, 23, who lives on the second floor, said: “He is Girkin and he also has a second surname, Strelkov. My mother has known him for many years.”

No one answered the door at two apartments neighbors identified as belonging to his mother and ex-wife.

Whoever he is, Strelkov/Girkin is an enthusiast of the hobby of dressing up in costume to re-enact historical battles, part of a paramilitary sub-culture in Russia. Bloggers on the Internet have unearthed photos of him at re-enactments, dressed in shining medieval armor and World War One-era uniforms.

Yuri Pyatnitsky, head of a military re-enactment club known as the Markovtsy after a general killed in battle against the Bolsheviks in Russia’s civil war, confirmed that Girkin/Strelkov was a member. He said Strelkov had some battlefield experience, although he would not say more about his background.

Asked what he thought of Strelkov's decision to join the Ukrainian revolt, Pyatnitsky said: "I respect that. What else should I say about a man who takes a strong step? He wanted to do it, and he did it. He did right."

Strelkov has been based in the main rebel redoubt Slaviansk since fighting flared in the east, leading the "green men" - armed fighters in uniforms without official insignia - who have turned the town of 130,000 people into a fortified bastion.

Kiev says the green men are Russian-controlled agents; Moscow says they are "self defense" volunteers, and denies any of its spies or special forces are operating on the ground.

The West says Moscow's denial, as in the case of Crimea in March, is nonsense. The European Union added Strelkov to its sanctions list on April 29, describing him as a staff member of Russia's GRU military intelligence.

It said he also worked as a security aid for Sergei Aksyonov, the once-obscure head of the Crimean Greco-Roman wrestling club who declared himself leader of Crimea when armed men seized its regional headquarters in late February. Aksyonov is now the official leader of Crimea as a Russian region.

But even on the EU's sanctions list, the full identity of Strelkov remains mysterious: when Brussels published the list with his name, it left his place and date of birth blank.

To Kiev, Strelkov's tactics show that Moscow aims to repeat the Crimea operation: armed men seize government buildings, proclaim themselves in charge, declare independence and proclaim their own militia to be the official security forces.



Slideshow (2 Images)

Ukraine's security service has released numerous recordings of what it says is Strelkov taking orders and advice from handlers in Moscow. Those recordings cannot be verified.

Kiev blames him in particular for the death of a local pro-Ukrainian councilman in the town of Horlivka, whose body was found after he was led away from the town hall by rebels.

Interior Minister Arsen Avakov described Strelkov as "a monster and a killer", wanted on charges including premeditated murder, sabotage and involvement in the seizure and week-long detention of foreign military observers two weeks ago.

"Fate has decided that Girkin has become a target of our Anti-Terrorist Operation," he said.

But for many in the Donetsk region, Strelkov's fledgling army is what stands between them and what they see as Ukrainian nationalists sent to subjugate a Russian-speaking population. Slaviansk itself has been sealed off to Ukrainian forces for more than a month and controlled by rebels.

"The man is a hero whether he us a colonel or a corporal, he is leading our boys to victory," said Fyodor Dyalnoy, a 63-year-old pensioner. "So what if he came from Russia? If Russia could only send us more people like him."

Mikhail Nikiforov, 28, a salesman said it was absurd to consider Strelkov a foreign agent, since Donetsk was rightfully part of Russia: “How can he be an agent on his own soil? It is clear this is Russia, as it should be.”

“I believe he is a good officer, he put some order in these troops and made an army out of them.”

Still, not everyone is happy to have the green men around, or their mysterious leader.

Irina, 39, who declined to give her surname, said she wanted “them and all these armed people and this war out of this town.”

She added: “I don’t care if he is a Russian or a Martian or whatever he is.”

Additional reporting by Alessandra Prentice in Slaviansk, Thomas Grove in Moscow, Adrian Croft in Brussels and Pavel Polityuk in Kiev; Writing by Ralph Boulton and Peter Graff

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Annex 516

Terrorist Shot a Resident of Donetsk Region in Front of his Family, Unian (18 May 2014)

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Terrorists Execute Donetsk Oblast Resident in Front of Family - Media Reports

15:00, May 18, 2014

POLITICS

1 0



Militants of the “Donetsk People’s Republic Terrorist” Organization Have Executed a Donetsk Oblast Resident as His Family Watched



Terrorists Execute Donetsk Oblast Resident in Front of Family - Media Reports | REUTERS

A group of armed terrorists of the “Donetsk People’s Republic” terrorist organization executed a farmer suspected of ties to the Right Sector in the village of Serhiyivka, Sloviansk District, Donetsk Oblast, this past Sunday, according to [Novosti Donbasa](#) [News of Donbas].

It will be recalled that on Victory Day terrorists fired point-blank at a car that did not stop at one of the Luhansk Oblast roadblocks.



Local entrepreneurs, 38-year-old Oleg Burykhin and 42-year-old Iryna Burykhina from Antratsit, died on the spot. Their 10-year-old daughter Liza was rushed to hospital in critical condition.

Also in Donetsk Oblast, terrorists coordinated by the foreign aggressor shot and killed a 44-year-old local Orthodox priest at a roadblock outside the town of Druzhkivka.

The terrorists previously abducted and killed in cold blood one Volodymyr Rybak, a member of the Donetsk City Council, for defending the Ukrainian flag.

If you have found an error, highlight it with the mouse and hit Ctrl+Enter.



Annex 517

Details of Shooting a Farmer Near Slaviansk, PN (19 May 2014)

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5/16/2018 Details of Shooting a Farmer Near Slavyansk: Fighters Found Out that the Old Man Was Helping the Ukrainian Security Services

[Advertising]

Details of Shooting a Farmer Near Slavyansk: Fighters Found Out that the Old Man Was Helping the Ukrainian Security Services

reads: 0 / 5,062

05/19/2014 02:38

The details of the murder of a 68-year-old pensioner in the village of Sergievka of the Slavyansk District of Donetsk Region who died at the hands of fighters from the so-called DNR [Donetsk People's Republic] have become known.

5/16/2018 Details of Shooting a Farmer Near Slavyansk: Fighters Found Out that the Old Man Was Helping the Ukrainian Security Services

[Photo]

UNN [Ukrainian National News] reports this citing one of the village's residents.

The pensioner had his own small agrarian business and sometimes took food to ATO [anti-terrorist operation] security services at the checkpoint.

"The terrorists likely found out about this. They came to his house, took him out to the courtyard with machine guns pointed at him before his entire family's eyes, read out a so-called verdict of the Donetsk People's Republic and shot him in the presence of his family and neighbors. And after that they got into a vehicle and left," a source said.

We remind readers that it was previously reported how terrorists from the self-proclaimed Donetsk People's Republic had shot a resident of Donetsk Region in front of his family.

They said at the Donetsk Region militia office that this incident is being investigated.

We note that on May 7 in Slavyansk terrorists attempted to beat a confession out of a journalist who had been taken hostage that he was a member of "Right Sector."

We remind readers that on May 9 a twelve-year-old boy was wounded in the center of Slavyansk at 6 Lozanovich Street next to the transformer substation. On the same day terrorists shot an Orthodox priest at the checkpoint in Konstantinovka. Also, on May 9 in Luhansk Region on the Kyiv-Kharkiv-Dolzhanskiy road unknown individuals shot at two Toyota Land Cruiser vehicles: a man and his wife were killed; their daughter was hospitalized.

[Advertising]

Annex 518

Hannah Levintova, Armed Groups in Ukraine Target Gays, Journalists, Minorities, and Anyone
Who Speaks Up, Mother Jones (21 May 2014)

Mother Jones

“Truth is relative”: Trump and Giuliani make the case to support *MoJo*’s new reporting project to combat disinformation.

Armed Groups in Ukraine Target Gays, Journalists, Minorities, and Anyone Who Speaks Up

HANNAH LEVINTOVA MAY. 21, 2014 3:28 PM





Crimean Tatars call for freedom of speech during a protest in Crimea in March. **Darko Vojinovic/AP**

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SIGN UP

Human rights violations, including killings, beatings, harassment of minorities, and abductions of journalists and activists, are escalating in Ukraine, according to a report released this weekend by the Office of the United Nations High Commissioner for Human Rights. The growing tension, the report says, is fueled primarily by the DIY armed groups and self defense units that have sprung up around the country.

The expansive report is based on information gathered by the UN's Human Rights Monitoring Mission in Ukraine (HRMMU), and concludes that "the continuation of the rhetoric of hatred and propaganda fuels the escalation of the crisis in Ukraine, with a potential of spiraling out of control." The Russian Foreign Ministry criticized the UN's report for a "complete lack of objectivity, glaring disparities and double standards."

We've gone through the full report and pulled out some of its noteworthy findings:

Deaths and injuries:

- Following violent clashes in early December, January, and mid-February, more than 120 activists were killed and hundreds injured.
- During clashes in Odessa earlier this month that led to a fire in the city's trade union building, 46 people were killed and 230 injured.
- In the initial aftermath of this winter's Maidan protests, 314 people were registered as missing. Most have since been found alive, but some were found dead while the fate of some others is still unknown.

Discrimination against minority groups: The UN's special rapporteur on minority issues visited Ukraine in April. On the issue of minority treatment, she warned that "in some localities the level of tension had reached dangerous levels." Namely:

- There have been ongoing reports of hate crimes, threats, and harassment against LGBT people by both pro-Russian and pro-Ukrainian forces. Several Ukrainian political parties, including the right-wing Svoboda and Right Sector, state that combating homosexuality is one of their goals. Meanwhile, though, Ukraine's version of a ban on "gay propaganda" was withdrawn from parliament consideration in mid-April, though another law that would have similar effects is still under consideration. (The bill, draft law 0945, would prohibit the production of media, TV, radio, or other products promoting homosexuality.)
- The report notes several anti-Semitic episodes in Odessa, Donetsk, and Crimea including one where swastikas were painted onto Jewish tombs, a Holocaust memorial, and houses near the local synagogue.
- Opioid substitution therapy, an important element of HIV/AIDS treatment for patients in Ukraine, has been cut in Crimea, leaving approximately 800 patients who are OST users in the region in deteriorating health.
- The UN documented ongoing harassment of Crimean Tatars, including vandalism of a memorial and an episode where a self-defense unit stormed the building of the Parliament of the Crimean Tatars, a governing body representing this population in Ukraine. The armed men physically and verbally harassed female employees and tore down the

Ukrainian flag. The report also lists numerous instances where Crimean Tatars' ability to move to and from Crimea has been obstructed.

- Roma families have also suffered harassment, including attacks on at least seven Roma

households in Slovyansk by armed men demanding money and valuables. Many Roma families, the report says, have fled the region altogether.

Problems for Crimeans refusing Russian citizenship:

- People in Crimea who chose not to apply for Russian citizenship, the report says, have been facing harassment and intimidation. According to rules agreed upon following the March 18 referendum that brought Crimea under Russian control, the region's residents had until April 18 to apply for an exemption from Russian citizenship, but the process has been made increasingly difficult by authorities.

Detentions of journalists and activists

- In April, two student activists and one city councilor were killed by unknown assailants. All three of their bodies were found dumped in the river in Slovyansk bearing signs of torture.
- The Ukraine monitoring mission documented at least 23 abductions of reporters and photographers by armed groups. As of early May, 18 of those journalists have been released, but “the exact number of the journalists still unlawfully detained remains unknown.”
- Activists, members of law enforcement, and international monitors have been detained and beaten by “self-defense units.” The recently detained include at least two members of the anti-Russian Svoboda party, two police officers, a group of foreign military observers, and six residents of a town in the Donetsk region, including town councilors or trade union leaders.

Freedom of the press is faltering:

- At least three Crimean media outlets have moved their editorial offices out of the region and to mainland Ukraine, citing concerns around personal safety and the ability to do their jobs.
- Broadcasting of Ukrainian TV channels has been disconnected in Crimea since March.
- In early April, 11 Ukrainian radio stations had to halt their operations in Crimea due to new legal and technical specifications for FM broadcasting in the region.

Annex 519

Tom Balmforth, A Guide To The Separatists Of Eastern Ukraine, Radio Free Europe / Radio Liberty (3 June 2014)



UKRAINE

A Guide To The Separatists Of Eastern Ukraine

June 03, 2014 13:59 GMT

Tom Balmforth

KYIV -- Keeping a handle on who's who in the chaotic separatist insurgency gripping Ukraine's frontier with Russia can get a little confusing. Here is a quick guide to the main players in Ukraine's increasingly wild east.

Pavel Gubarev -- the "People's Governor"

The 31-year-old Gubarev was "elected" Donetsk's "people's governor" by his supporters at a pro-Russia rally on Lenin Square in central Donetsk in early March. They then stormed and occupied the regional administration building in Donetsk. Although they were soon evicted, the building changed hands again the following week. Gubarev made calls for a referendum on the Donbas region's status. In contrast to the separatist forces from April onward, the protesters who proclaimed Gubarev "people's governor" were a ragtag bunch in plainclothes and did not openly carry firearms.

On March 6, Gubarev was arrested at his home by the Ukrainian Security Service (SBU) for separatism. During his two-month detention in Kyiv, an officer was **filmed at a court hearing** demanding he remove his St. George ribbon; Gubarev refused, calling the orange-and-black ribbon "sacred." Gubarev was released in early May in a swap for captured SBU agents. Gubarev's title of people's governor is not an official office of the self-proclaimed "Donetsk People's Republic," which was declared by separatists while he was in jail. On May 23, Gubarev **announced the formation** of "Novorossia," a political movement aimed at integrating eight eastern and southern Ukrainian oblasts into a new state.

Before dabbling in separatist politics, Gubarev worked as an advertising agent. In one video **making the rounds on YouTube**, he is dressed as Father Frost, part of a business venture in which the Soviet equivalent of Santa Claus visited children at their homes. He is also alleged to have been a member of the Russian ultranationalist group **Russian National**

Unity in the 1990s.

Vyacheslav Ponomaryov -- the "People's Mayor" of Slovyansk

On April 12, masked gunmen seized security services, police, and government buildings in Slovyansk. Since then, Ponomaryov, 49, has been their public face. Ponomaryov fashions himself as the "people's mayor" of Slovyansk, an industrial town in northern Donetsk Oblast that has become a separatist stronghold and prime target of the Ukrainian government's "antiterrorist operation."

A veteran of the Soviet Navy, he was most recently employed as the boss of a soap-manufacturing factory. Ponomaryov's forces have been accused of a series of kidnappings in Slovyansk. Among those abducted have been American journalist Simon Ostrovsky, Ukrainian journalists, and an OSCE military verification mission invited by the Kyiv authorities. His name was added to the EU blacklist of Russians and Ukrainians with entry bans and asset freezes.

Denis Pushilin -- leader of the self-proclaimed "Donetsk People's Republic" (DNR)

The 33-year-old Pushilin, who was born in nearby Makiyivka and is based in Donetsk, appeared on the scene slightly before Ponomaryov. But he cuts a more dapper and refined figure, sporting a shirt and jacket rather than fatigues and a baseball cap. He became the deputy "people's governor" in early April, effectively replacing Gubarev after the latter was arrested. When the "Donetsk People's Republic" was proclaimed on April 7, Pushilin became one of its leaders. On May 15, he was made chairman of the Supreme Soviet of the self-styled DNR, making him its effective head of state.

There has been speculation of a rift between separatists in Slovyansk and Donetsk. Pushilin served in the Ukrainian Army at the turn of the millennium. After completing his military service, he worked a series of jobs including casino croupier and pushing financial products for MMM, a successor to the infamous Russian Ponzi scheme that swindled tens of thousands after the collapse of the Soviet Union. He is on the EU's visa blacklist.

Aleksandr Borodai -- The DNR's "Prime Minister"

Borodai, 41, was late to the show, but is rapidly emerging as a key player in the separatist elite.

A Russian citizen, Borodai lived in Moscow prior to the outbreak of unrest in Ukraine. He was made "prime minister" after the DNR adopted a draft constitution on May 15. He joined the ranks of the separatists -- publicly, at least -- only a few weeks ago but has since become one of their more visible figures.

In what may have been a bid to consolidate his power, he recently called for an end to looting by separatists. At his behest, the regional administration building that has served as a headquarters for the Donetsk People's Republic was raided and cleared out by well-organized fighters calling themselves the "Vostok Battalion," a Russian military structure established in the 1990s by a Chechen warlord.

Borodai reportedly defended the Russian White House in 1993 when hard-liners barricaded themselves inside after Boris Yeltsin dissolved the Supreme Soviet. He is also reputed to be close to the Russian nationalist Aleksandr Prokhanov. In the 1990s, Borodai worked as an editor of Prokhanov's ultranationalist newspaper "Zavtra." Borodai is reportedly an old friend of Igor Girkin, the DNR's "defense minister." He told "**The New York Times**" he had been in Moldova's pro-Moscow breakaway Transdniester region with Girkin in the 1990s "to protect the rights of Russians."

Aleksandr Mozhayev aka "Babai" -- A Bearded Insurgent

Mozhayev, who goes by the moniker "Babai," is a mercurial, bearded Cossack fighter from southern Russia who was -- likely erroneously -- thought to be a GRU military intelligence officer who had served in the South Ossetia 2008 conflict. Pictures likening the two were widely circulated on the web, but the resemblance in fact goes not much further than large beards and military apparel. Mozhayev told "Time" magazine that he was on the run from trumped-up charges of threatening to stab someone in Russia. He was in Crimea prior to the unrest in Ukraine's east.

Igor Girkin aka "Strelkov" -- The DNR's "Defense Minister"

Girkin, better known by his pseudonym "Strelkov," is a Russian citizen and, like Borodai, from Moscow. He is in charge of military operations in Slovyansk, where Ponomaryov is the "people's mayor." On May 16, he was made defense minister of the self-proclaimed DNR. According to Russian media, he is a colonel and served in conflicts in Transdniester, Bosnia-Herzegovina, and Chechnya. He also wrote for the ultranationalist newspaper "Zavtra." There are 15 articles entered under the name "Igor Strelkov" on "Zavtra's" website.

The SBU has accused him of being an undercover officer with the GRU, the Russian Defense Ministry's Main Intelligence Directorate, and the brains behind the operation in the east. He remained in the shadows of the insurgency until he gave an interview to the Russian daily "Komsomolskaya pravda." Girkin said his paramilitary unit was formed in Crimea and comprised mostly Ukrainians. He is likely one of the most powerful separatist figures in eastern Ukraine.

Much of his past is unclear. However, pictures of Girkin dressed as a gladiator and in other military costumes apparently show that **reenacting historical battles** is one of his hobbies. Girkin is also on the EU list of those facing asset freezes and entry bans.

Valery Bolotov -- the leader of the "People's Republic of Luhansk"

The 44-year-old Bolotov is the self-styled "people's governor" in Luhansk Oblast. He is the chairman of the Luhansk Oblast's "Paratrooper Veterans Union." Born in the town of Stakhanov in the Luhansk region, Bolotov served in the Soviet Army in the late 1980s and was deployed to Azerbaijan's Nagorno-Karabakh region in 1989-90 when fighting broke out between ethnic Armenians and Azerbaijanis. Days after separatists held an unrecognized independence referendum on May 11, Bolotov reportedly survived an apparent assassination attempt. He is on the European Union's list of figures facing visa ban and asset freezes.

Annex 520

Alexander Zhuchkovsky's "Militia" of the DPR: The Only Support is in the Russian Media, Zaks
(10 June 2014)

This document has been translated from its original language into English, an official language of the Court, pursuant to Rules of the Court, Article 51.

Pursuant to Rules of the Court Article 51(3), Ukraine has translated only an extract of the original document constituting this Annex. In further compliance with this Rule, Ukraine has provided two certified copies of the full original-language document with its submission. The translated passages are highlighted in the original-language document. Ukraine has omitted from translation those portions of the document that are not materially relied upon in its Memorial, but stands ready to provide additional translations should the Court so require.

DNR “Rebel” Alexander Zhuchkovskiy: The Only Support Comes from Russian Media

 /new/archive/view/126865zaks.ru

June 10, 2014

“Rebel” Alexander Zhuchkovskiy, a St. Petersburg-based activist, author of the “Sputnik i Pogrom” site, who has been fighting in Ukraine's southeast for two months now, tells ZAKS.Ru how it feels to fight in the detachment of Igor Strelkov. The Security Service of Ukraine accuses Strelkov, the self-proclaimed minister of defense of the Donetsk People's Republic, of terrorism. The Security Service has banned Zhuchkovskiy from entering Ukraine. In May he illegally crossed the border near Rostov, bypassing a Ukrainian roadblock together with other resistance members from Russia.

– What were you busy doing in May?

– In May, I studied the sentiments of Russians living in Ukraine. This territory used to be of little interest to me – an uninteresting population in a state of suspended animation. It came as a revelation to me when those people woke up and responded with a powerful assault to pressure from western Ukraine. I came to Novorossiia to make sure for myself. There I saw what I would like to see in Russia.

– Did you participate in combat?

– I'd rather not say.

– Why did you go there?

– As a Russian nationalist, I believe that Russians must support other Russians, no matter where they are.

– How old are you and what is your education?

– I am 27 years old. I studied at the History Department of St. Petersburg State University, but dropped out. Later I was forced to find a job. I served in the Navy for 2 years.

– Why did the Security Service of Ukraine ban you from entering the country?

– I tried to get in back in April for the first time. They detained me on the border and denied me entry. I don't believe that I have to obey those instructions. This land is absolutely mine, just like Moscow and St. Petersburg. I will come here if I want to. Representatives of the Security Service of Ukraine are no authority for me.

– Are there any things that make you feel pride or, on the contrary, regret?

– There are some things I accomplished, which I cannot discuss. Let me put it this way. Yes, we came to Novorossiia and made an announcement about this. I got hundreds of support letters. In the first two weeks dozens of people have already crossed the border. Dozens more are coming. This is the main cause that I take pride in.

We managed to arrange this flow. There are many such flows and coordinators. Second, we have published account numbers and gathered substantial donations to support the rebels.

– How much have you collected in donations?

– Close to 800,000 roubles. Those who could not come are helping us with money. We managed to buy uniforms for our detachment. We even could buy equipment for our operations and household items. For example, we managed to entrench well while being stationed in Semionovka. I have left the village for work-related reasons. I read the news. The things happening there are horrible, of course. I don't know how I will be able to get there. I wouldn't like to reveal my specific position. I have left to hold negotiations with some people and discuss deliveries of critical items. Oleg Melnikov, with whom we were there, has been detained in Moscow. They say it's in relation to the "Bolotnoe Case".

– Where do rebels have their weapons from?

– Most of those weapons were captured during offensives in April and May. We came by the cannon while taking over Slovyansk. The cannon is constantly firing. We keep attacking the Ukrainian positions in response to their attacks. There are also local weapons of the Ukrainian law enforcement authorities and the Ukrainian Army. Some items arrive from abroad. I don't mean support from the Russian state. It's limited to individual people in the military community. I can't disclose all information.

– How is work organized in your detachment?

– In many ways this depends on current circumstances. Of course, there is a joint command that allocates people to specific areas depending on needs. When people come in an organized group, they can operate as a standalone unit. For example, our guys from Russia operate as a standalone unit. They added other people while moving through Luhansk and Slovyansk. So it's like we are an established unit. They no longer split us up, but instead deploy us to specific areas. We spent 10 days in Semionovka. Whoever came was joining our detachment.

– Who gave you orders?

– The command. We also acted on some personal initiatives. If a person is cut off from Slovyansk, we are able to act on our own in some respects. But only within the limits of this strategy of initiatives. After all, we are not regular army. We can act on personal initiative and use partisan tactics. The most important thing is the "single line of defense" policy. For now this is a volunteer army and we do not have any strictly assigned roles. We have a certain hierarchy and outlined functions, but this is just a matter of convention, without any shoulder straps.

– Are there many people with military experience among rebels?

– We have people who fought in the Chechen war. I'm not saying there are many of them, but we do have them. I don't know the percentage.

– Did you have clashes with the Right Sector?

– We clashed with them on the outskirts of Luhansk, but it's very hard to determine who they are: the Right Sector, National Guard, or mercenaries. We took them prisoner. We did not have such localized clashes in Slovyansk. That's because they can't force their way into the city. If it weren't for this fact, the situation would have resolved itself much sooner.

– Did you ever have to execute rebels for their crimes?

– The media has already reported that two rebels had been executed in Slovyansk. It was just one incident. Looting is punishable by death.

– According to rumors, soldiers from the Chechen Republic fought in Slovyansk.

– These are just rumors. Yes, we had some Chechens come over. However, I personally did not meet a single representative of this republic in either Luhansk or Slovyansk. Yes. I heard that some guys came over and came under fire. Many people got killed. In this case this is more about bravado and politicking. However, there are no Russian units in Ukrainian territory.

– Do rebels engage in active combat operations?

– The last two weeks mostly saw trench warfare and artillery fire. Sometimes we sweep the territory. Slovyansk has been under siege for two months, so it's difficult to attack the enemy in this situation. Of course, we perform certain sweeps. I do not want to elaborate. Still, certain efforts are also made to disrupt the Ukrainian Army and attack their positions. However, we had no battles proper. I believe we have already gotten to this point. If the Ukrainian military venture into the city, they will get bogged down in battle, and their numbers will no longer help them.

– Do rebels get paid for their service?

– No. They are fully supported by the command: accommodation, meals, and cigarettes.

– What is a scarce commodity among rebels?

– People. No matter how many people come here, this pales in comparison with the enemy force. In Semionovka, for example, there are several thousand our fighters to some 40,000 Ukrainian troops. However, on our side we have people who came here voluntarily with a sacrificial mindset. On the other side you have the Ukrainian Army that is totally demoralized and undersupplied. They go hungry there. That's pathetic. The real danger comes from Right Sector fanatics and the National Guard, who execute their own people for refusing to fight. They practice sabotage and cruel treatment. They are dangerous people. The Ukrainian Army does not pose such a big danger. If resistance is powerful enough, they will run away or surrender. Also, people simply do not have enough time

to sleep and eat. They are busy reinforcing our positions at all times. People literally live in trenches, at roadblocks, do not relax for one minute, especially so in recent weeks when army operations have become more active.

– Is there any fear among rebels?

– People voluntarily come from Russia and other regions of Ukraine. This is their conscious choice. Granted, I heard about a few cases in which people left and abandoned their positions. But those are solitary incidents. I haven't met any people with fears or lack of confidence. Their motivation is very high. Their morale is very high. I don't see any fear. On the contrary, I see unity, cohesion, and desire to win, including at the cost of their own lives. Yes, some say that this can be crushed by military might, but our people are doing this out of principle. They will go to the very end. They are practically suicide attackers somewhere on the frontline.

– What other scenarios are possible?

– There is a Cossack chief named Alexey Mozgovoy. He has very many Cossacks in his partisan detachment. They are saying that they do not simply want to defend the southeastern lands but also go all the way to Odesa, Kharkiv, and Kyiv. But so far it's just talk.

– In your opinion, why is the conflict dragging out?

– It is very difficult to make predictions when we are dealing with delusional people. We are dealing with insane people. They can suspend the anti-terrorist operation today only to resume it several hours later. Why have there been no attempts to storm Slovyansk in a single attack? It's because there are very many civilians, so an airborne attack would claim thousands of lives, forcing Russia to introduce a peacekeeping force. This is a restraining factor. Still, there are more casualties among civilians than among rebels. Somebody gets killed or wounded every day.

– How destroyed is the infrastructure of Ukraine's southeast?

– It is more or less functional in Slovyansk for now. There is no electricity in such small population centers as Semionovka. Indeed, most of the people have already left the village. We have evacuated people from a hospital facility: patients, disabled individuals, medical personnel. A humanitarian catastrophe is unfolding there. We do not observe any major blockades in big cities. There is traffic. Sberbank and Privatbank work in Slovyansk. However, in the face of the activity we are witnessing, I believe that we will soon be seeing a humanitarian catastrophe in major cities. The same goes for water and food supply interruptions.

– Do the locals support you?

– This depends on the level of danger. For example, when I was back in Luhansk it was still relatively peaceful. Some of the local intellectuals were against Russia and dreamed of a peaceful agreement with Kyiv. I met with absolute support in Slovyansk. They have

a siege mentality. They fully support us with money and food. The more pressure we receive from Kyiv, the greater the support in other population centers.

– Will rebels support the position of the Russian government?

– [Laughs] The Russian Government is not a political actor or party to the negotiations. They can negotiate gas supplies. I don't believe that Russia can solve anything for the rebels or the Ukrainian authorities. Even when Vladimir Putin called for the referendum to be postponed, I was in Luhansk at the time and saw that people were very displeased. The only support comes from the Russian media. They have a pro-Russian stance. Until the government starts supporting rebels financially or by dispatching some military experts, I will maintain a very critical attitude. I believe they are bailing on our historical lands.

Interviewed by Svetlana Zobova

Annex 521

Andrew E. Kramer & Michael R. Gordon, Russia Sent Tanks to Separatists in Ukraine, U.S. Says,
N.Y. Times (13 June 2014)

EUROPE

Russia Sent Tanks to Separatists in Ukraine, U.S. Says

By ANDREW E. KRAMER and MICHAEL R. GORDON JUNE 13, 2014

DONETSK, Ukraine — The State Department said Friday that Russia had sent tanks and other heavy weapons to separatists in Ukraine, supporting accusations Thursday by the Ukrainian government.

A convoy of three T-64 tanks, several BM-21 multiple rocket launchers and other military vehicles crossed the border near the Ukrainian town of Snizhne, State Department officials said. The Ukrainian Army reported Friday that it had destroyed two of the tanks and several other vehicles in the convoy.

“This is unacceptable,” said Marie Harf, the deputy State Department spokeswoman. “A failure by Russia to de-escalate this situation will lead to additional costs.”

Overnight Friday, separatists using antiaircraft and heavy machine guns fired on a military transport plane as it was landing in Luhansk, the Ukrainian Defense Ministry said. It did not give details of casualties, but offered condolences to family members of the victims. News reports said the plane was carrying as many as 49 military personnel.

Earlier, a Western official said that intelligence about the movement of the tanks and other weapons into Ukraine was shared on Friday with NATO allies. Secretary of State John Kerry complained this week about the flow of Russian arms to separatists in Ukraine in a phone call to Sergey V. Lavrov, the Russian foreign minister.

The spokesman for President Vladimir V. Putin of Russia, Dmitry S. Peskov, said Friday that a Ukrainian armored personnel carrier had crossed into Russia for unclear reasons and was abandoned there. The Russian state news agency reported that the Russian border service said the occupants had then fled back to Ukraine.

At the meeting of the Group of 7 nations last week, President Obama warned Mr. Putin that the West would impose "additional costs" on Russia if its provocations were to continue.

The T-64 is an obsolescent tank no longer in active use by Russian forces, but still stored in southwest Russia.

"Russia will claim these tanks were taken from Ukrainian forces, but no Ukrainian tank units have been operating in that area," the State Department said Friday. "We are confident that these tanks came from Russia."

"We also have information that Russia has accumulated multiple rocket launchers at this same deployment site in southwest Russia, and these rocket launchers also recently departed," the State Department added. "Internet video has shown what we believe to be these same rocket launchers traveling through Luhansk."

Even before the State Department's statement, Ukraine was having one of its better days Friday in eastern Ukraine, with government forces winning control of the port of Mariupol, the second-largest city in the separatist region of Donetsk.

The Ukrainian assault in Mariupol left five pro-Russian militants dead and four Ukrainian soldiers wounded, and ended with the hoisting of a Ukrainian flag at City Hall as the military routed the last separatists from the city's administration buildings.

In Friday's confrontation, videos posted online showed Ukrainian soldiers standing over captives who were lying face down with hands clenched behind their heads. The videos also showed soldiers displaying trophies of the battle — captured orange-and-black ribbons and shoulder patches of a pro-Russian group, the Russian Orthodox Army — and speaking with prisoners freed from the occupied buildings.

In that pro-Ukrainian forces — volunteer patrols of factory workers, a Ukrainian nationalist battalion called Azov and the Ukrainian military — had controlled most of Mariupol for weeks, the action was as much a propaganda victory as a military one.

In fighting near Slovyansk, a Grad ground-to-ground rocket of the sort said to be in the weapons convoy from Russia killed one person and wounded several others. Residents said the rocket went off course and hit a vegetable market in the village of Dobroyepole.

Over the long term, Ukraine, with its far larger though badly equipped and poorly trained army, has more forces, and it is unclear how long the separatists can hold out without more support from Russia. That is something Moscow cannot offer openly without risking more severe Western sanctions.

The result is misdirection and sleight of hand, and a conflict of endless puzzles and mind games.

The daytime journey of the three tanks through eastern Ukraine, which was filmed in multiple videos and witnessed by Western reporters, could not have been more obvious, and yet the convoy was too small to serve a military purpose. Was it a warning?

A rebel leader, Denis Pushilin, told Russian state TV on Friday that the separatists had tanks but that it was "improper to ask" where they got them.

Russia ratcheted up the economic pressure on Ukraine on Friday in their dispute over natural gas supplies and prices. The state-run energy giant Gazprom said Kiev had to pay its debts for previous deliveries before further negotiations over gas prices.

Andrew E. Kramer reported from Donetsk, and Michael R. Gordon from Washington.

A version of this article appears in print on June 14, 2014, on Page A4 of the New York edition with the headline: Russia Sent Tanks to Ukrainian Separatists, U.S. Says.

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Annex 522

Ilya Arkhipov, Irina Reznik & Henry Meyer, Putin's 'Soros' Dreams of Empires as Allies Wage
Ukraine Revlot, Bloomberg (16 June 2014)

Business

Putin's 'Soros' Dreams of Empire as Allies Wage Ukraine Revolt

Ilya Arkhipov, Henry Meyer and Irina Reznik
June 15, 2014 1:00 PM

When Crimea's new premier traveled down the Black Sea coast for unscheduled talks with President Vladimir Putin in Sochi this month, he was accompanied by a man described by one Kremlin insider as Russia's George Soros.

It was a rare glimpse of Konstantin Malofeev, the 39-year-old founder of Marshall Capital in Moscow whose network stretches into the heart of Ukraine's pro-Russian insurgency. The self-proclaimed head of the unrecognized Donetsk People's Republic and its rebel army leader have both worked for Malofeev, though the financier denies any role in the unrest.

As Putin acts publicly to ward off further U.S. and European sanctions over Ukraine, a network of pro-Russian operatives continues to guide an uprising that's already claimed hundreds of lives. With his political connections and wealth, the multimillionaire has the resources to support projects that the Kremlin wants distance from, according to Sergei Markov, a policy consultant to Putin's staff.

"He's useful like Soros in that he acts on his own," Markov said by phone. "He suits Russian authorities because they don't want to take responsibility for certain things."

Malofeev said in an interview that his only financial contributions related to the conflict in Ukraine are in support of refugees from the fighting. Still, Malofeev, who describes himself as an "Orthodox patriot," said he couldn't be prouder of his former public relations adviser, Alexander Borodai, who now runs the Donetsk separatist administration.

'Russian Empire'

“Ukraine is an artificial creation on the ruins of the Russian Empire,” Malofeev said in his office near the U.S. embassy in central Moscow last week. “I’m sorry for my lack of political correctness, but Ukraine is part of Russia. I can’t consider the Ukrainian people as non-Russian.”

Malofeev, who sold his largest asset, a 7.5 percent stake in OAO Rostelecom, back to the state-run phone company for more than \$700 million last November, said he first met Crimean Prime Minister Sergei Aksyonov in late January. A month later, the pro-Russian leader led an armed takeover of the peninsula that paved the way for Russia’s annexation.

Putin’s spokesman, Dmitry Peskov, said he knows “nothing” about Malofeev’s trip to Sochi or his activities in Ukraine. “The Kremlin encourages any social charity by any businesses, from big to small,” Peskov said by phone.

Putin has repeatedly rejected assertions by U.S., EU and Ukrainian officials of Russian military involvement in southeastern Ukraine, most recently in an interview with French television and radio channels that aired June 4. The Russian president, who met U.S., European and Ukrainian leaders in France this month, called on the authorities in Kiev to declare a cease-fire and hold talks with the rebels.

Ukraine ‘Penetration’

The worst standoff since the Cold War between Russia and the U.S. intensified last week, after pro-Russian militants shot down a transport plane in eastern Ukraine, killing 49 servicemen, and the U.S. accused Russia of sending heavy weapons to the rebels, including old-model tanks and rocket launchers.

“Putin has been adamant about there being no Russian interference,” said Masha Lipman, an analyst from the Carnegie Moscow Center. “However, this is too important an issue to believe that Putin hasn’t endorsed the penetration of Ukraine, the sending of volunteers.”

Malofeev declined to reveal details of his June 3 visit with Aksyonov to Putin’s residence in Sochi. Aksyonov didn’t respond to requests for comment via an assistant, nor did Borodai, the separatist leader in Donetsk. Borodai last month told Moscow-based newspaper RBC Daily that Malofeev wasn’t involved in the Ukraine conflict.

‘Active Coordinators’

Konstantin Zatulin, a former lawmaker in the ruling United Russia party who was an official observer during Crimea’s referendum on joining Russia, said by phone that Malofeev has given “some help” to the rebels in Donetsk, without providing details. Zatulin heads the Moscow-based Institute of the Commonwealth of Independent States, which promotes the rights of native Russians abroad.

Ukraine’s intelligence service considers Malofeev among the “active coordinators” of the pro-Russian insurgency, Marina Ostapenko, a spokeswoman for the agency known as SBU, said by phone from Kiev.

“While Malofeev is officially an independent player in Ukraine, he has the Russian government’s approval in general in the sense that everyone who can should help,” said Markov, the Kremlin-linked political analyst.

Malofeev, not as rich as Soros, who’s donated more than \$8 billion to U.S.-friendly causes since 1979, said he didn’t encourage Borodai to join the insurgency and isn’t helping him.

'Courageous' Rebels

Malofeev said he met Aksyonov for the first time in Sevastopol, Crimean's largest city and home to Russia's Black Sea Fleet since 1783. Malofeev flew to the peninsula to stage a tour of religious relics from Greece that was financed by his St. Great Vasily Charitable Fund.

Malofeev said Aksyonov, whom he described as "decisive," later hired Borodai as his top aide. After Crimea was annexed in March, Borodai took the "courageous" step of leading the separatist struggle in Donetsk, Malofeev said.

The connection with Borodai leads to another rebel leader in Donetsk, a Russian who goes by the name of Igor Strelkov and commands rebel forces -- a friend of Borodai, according to Malofeev. Strelkov's real last name is Girkin and he works for Russian military intelligence, according to the European Union, which sanctioned him in April.

Malofeev said Strelkov provided security for the touring religious exhibit when it was in Kiev. Strelkov didn't respond to a request for comment via a separatist representative.

Russian 'Spirit'

"Igor is a man of ideals," Malofeev said. "He's got the spirit of a Russian officer. As someone who loves the Russian Empire, I can only sympathize with him."

Strelkov, who loves to re-enact Czarist-era battles, has shown through his exploits in Ukraine that he's a "real hero," Malofeev said.

Malofeev's involvement in Ukraine may be motivated in part by a desire to curry Putin's favor and further his business interests, which have collided with some of the biggest state-run companies, according to Lipman at Carnegie Moscow.

On Feb. 27, the Moscow-based business daily Vedomosti reported that Malofeev had reached an agreement with VTB Group, Russia's second-largest lender, over a \$225

million loan that a company controlled by Marshall Capital took out in 2007 and failed to repay.

Taking Crimea

While the details of the deal weren't disclosed, VTB withdrew its request to open a criminal investigation and Marshall Capital pulled a lawsuit against VTB that it had filed in London, Malofeev said. VTB said via its press service that it doesn't comment on confidential client matters and knows nothing about Malofeev's activities in Ukraine.

On the same day as Vedomosti published its report, armed men seized the parliament and regional government buildings in the Crimean capital of Simferopol, paving the way for Aksyonov to be declared prime minister during a closed-door session.

Malofeev, who calls himself a "monarchist" who applauds Putin for being a strong leader, said he's now spending most of his time on civic issues. His charity, St. Great Vasily, has an annual budget of about \$40 million and its trustees include Oscar-winning director Nikita Mikhalkov and Igor Shchegolev, a former communications minister who now advises Putin, according to its website.

Last month, Malofeev sponsored a meeting of European and Russian nationalist politicians and academics in Vienna. He's also helping to organize a "family values" conference in Moscow in September that's co-sponsored by an Orthodox charity overseen by State-run OAO Russian Railways chief Vladimir Yakunin, a longtime Putin ally.

'East, Maybe'

As for Ukraine, Malofeev says time is running out for new President Petro Poroshenko to agree to cede more powers to the mainly Russian-speaking regions in the east or risk an escalation of the violence.

“Kiev still has a major chance to create a federative state and resolve everything,” Malofeev said. “But with every new death the chances decrease and may disappear completely. Too many people have been killed.”

Asked if Putin should annex more of Ukrainian territory than just the peninsula of Crimea, Malofeev said: “You can’t incorporate the whole of Ukraine into Russia. The east maybe.”

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Annex 523

Alec Luhn, Fight Club, Donetsk, Foreign Policy (18 June 2014)

DISPATCH

Fight Club, Donetsk

Meet eastern Ukraine's emerging warlords.

BY **ALEC LUHN** | JUNE 16, 2014, 4:58 PM

DONETSK, Ukraine — On a recent sunny afternoon in Donetsk, Vadim Kerch was holding court in a dark office in the former headquarters of Ukraine's security service, which has been occupied since last month by a group of rebels who call themselves the Russian Orthodox Army. Kerch is one of their two commanders.

A local resident was appealing to Kerch for help. At the end of May, the man said, armed men claiming to be part of the pro-Russian uprising seized his car in the neighboring city of Makeyevka and then called him asking how much he was willing to pay for its return.

Between answering calls on his cell phone, Kerch told the supplicant to get to the point. One of the half-dozen Kalashnikov-toting rebels grouped in a loose circle around the desk spoke up, noting that at least 46 vehicles had been carjacked in Makeyevka. Finally, Kerch promised to go with the newly appointed "people's prosecutor" later that day to get the car back.

"Today is full of bullshit rather than war," he joked.

When pro-Russian protesters first occupied the Donetsk regional administration building in April, different rebel groups and units staked out each of the 11 floors. Since then, these motley bands have been eclipsed by three powerful, armed factions: the Russian Orthodox Army, the Vostok Battalion, and Oplot. Each is built around an influential commander who spends his time not only waging the ongoing guerrilla war against Kiev's forces, but also dispensing harsh justice and detaining civilians, sometimes for prisoner exchanges. Each group has several hundred men, including Russian volunteers, and heavy armaments. (During a recent visit to Vostok's base, I saw four fighting vehicles, two anti-aircraft guns, numerous rocket-propelled grenades, and surface-to-air missiles.)

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Are these commanders the backbone of an emerging independent East Ukraine, or are they burgeoning warlords staking out their turf for whatever comes next?

So far, Kiev's "anti-terrorist operation" to take back eastern Ukraine has united the rebel leaders in the defense of the self-declared Donetsk and Lugansk "People's Republics," even though each has his own vision of the region's political future. The rebels largely view the new Kiev government as an American puppet dominated by ultranationalists and "fascists" and have called on Russia to deploy troops.

Ukraine's Health Ministry said last week that at least 270 people have died in eastern Ukraine since the military operation began in April, though this number has since risen to at least 330. In the bloodiest day of fighting yet, rebels killed three border guards in Mariupol on Saturday, June 14, and shot down a Ukrainian military transport plane outside Lugansk, killing all 49 servicemen on board.

But President Petro Poroshenko's efforts toward de-escalation, including the **promise** of a cease-fire if rebels agree to lay down their arms, could soon test these commanders' willingness to submit themselves to a greater authority. Their real allegiances — whether to the Russian government, a certain local oligarch, the people's republics, or simply themselves — remain unclear.

Vostok is the most battle-ready group, led by Alexander Khodakovsky, a thoughtful man with a closely shaved head and goatee who was formerly the head of an elite special forces unit. The third major armed force in Donetsk is Oplot, a civic organization and mixed martial arts club espousing clean living and pan-Slavic nationalism that in Donetsk has been transformed into a militia under the command of Alexander Zakharchenko, a sardonic former mechanic with a potbelly and a deep tan.

But there are other emerging warlords too. Igor Girkin, who goes by the nom de guerre Strelkov and is alleged by the Ukrainian government to be a Russian intelligence agent, controls the besieged city of Sloviansk, where journalists have been abducted and two rebels from competing groups were recently executed on his orders. Last week, he arrested the "people's mayor" of Sloviansk, Vyacheslav Ponomarev. In the next region over, the city of Lugansk and several nearby towns are under the control of the Army of the Southeast, whose founder, Valery Bolotov, recently traveled to Russia to recuperate from an assassination attempt. "Only our army is preserving the safety of Lugansk residents," Vladimir Gromov, the head of counterintelligence in the Army of the Southeast, told me.

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Several other small cities in the region are largely under the control of strongman commanders, from Igor Bezler — a former lieutenant colonel in the Russian army and also an alleged intelligence agent — in Gorlovka to a group of Russian Cossacks in Antratsyt. Bezler, who is known by the nickname "Bes" or "Demon," recently appeared in a [video](#) in which he appeared to execute two Ukrainian intelligence agents by firing squad. (Some analysts have said the video may have been staged.)

A symbolic moment in the transition from hodgepodge groups of men with clubs to a few heavily armed militias came at the end of May, when members of the Vostok Battalion kicked all rebels who were not members of the self-appointed government out of the Donetsk administration building. Many saw the tense showdown as a move by Vostok to establish itself as the premier power in Donetsk, but Khodakovsky said the "show of force" was a side effect. The real goal, he said, was to punish looters who had stolen alcohol and other goods from a supermarket that was abandoned during [heavy fighting](#) at the airport that killed at least 50 of Khodakovsky's men, including 31 Russian citizens.

A rash of marauding that has hit eastern Ukraine in recent weeks has positioned militia commanders as the ultimate arbiters in their locales. Strelkov even ordered the shooting of two of his men for "looting, armed robbery, kidnapping, [and] leaving battle positions," according to an execution order posted online that appeared to be stamped and signed by Strelkov.

These days, eastern Ukraine's countryside is largely a lawless territory dotted with checkpoints run by pro-Russian rebels and Ukrainian government forces, while the cities have retained a sense of order. But all three Donetsk militia commanders told me that criminality is on the rise.

"We catch several looters every day," Zakharchenko, Oplot's commander, told me. "They steal cars, rob people on the street, steal from stores, and commit other provocations." Most police have declared fealty to the new People's Republic and are powerless next to the heavily armed militants around the region. The regional head of police resigned after speaking with pro-Russian protesters who stormed his headquarters shortly after the start of the uprising in April.

Kerch said law enforcement officers have been "demoralized" by the rebel movement. "The police are used to working with criminals, but now there are many people with machine guns in the city, and far from all of those who started taking part in this movement think about their homeland first and foremost," he said. "Donetsk People's

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Republic bandits who weren't around before now wear the symbols and masks and rob people."

To crack down on such actions, rebel militias have conducted day and night patrols, sometimes working with police and volunteers. In Donetsk, violators are not shot, Khodakovsky said, though they may be publicly humiliated, such as two men in a recently published [video](#) who were forced to sweep sidewalks wearing signs saying, & quot;I'm a thief." But Kerch said executions could be warranted in wartime.

The outbreak of kidnappings and detentions in rebel-held areas, however, reveals the darker side of vigilante justice, including that meted out by rebel commanders. Reports by the [United Nations](#), the [Organization for Security and Cooperation in Europe \(OSCE\)](#), and [Human Rights Watch](#) have suggested that the number of abductions in eastern Ukraine is growing. Journalists, local citizens, and OSCE monitors have been held hostage. The local rights organization Prosvita recently estimated that 200 people are being detained illegally, a number that Kerch confirmed. Zakharchenko said Oplot alone is holding 40 to 50 prisoners.

An electoral commission member from Donetsk, who wished to remain anonymous, said he and three friends were seized three days before the May 25 presidential election and held for six days in the basement of the security services building where the Russian Orthodox Army is headquartered. They were interrogated, beaten, and tortured with electroshocks. Their captors shot live bullets into the wall next to them. The electoral commission member was later hospitalized with a ruptured eardrum, a basal skull fracture, and a kidney contusion, he said. Although the man was blindfolded, he said his main interrogator had a strong Russian accent. Another 20 to 30 people were being held in the basement with him.

Kerch said he was holding prisoners, including two "looters" who had stolen the man's car in Makeyevka, but declined to comment further. (Kerch said he had returned the car to its owner.) He said the Russian Orthodox Army is "actively searching" for Kiev agents.

The Russian Orthodox Army also seized Nikolai Yakubovich, a local pro-Kiev activist and advisor to Ukraine's security council, and exchanged him for rebel prisoners. In a [video](#) filmed during his captivity, one of Yakubovich's eyes is bruised shut and he shows signs of other injuries.

Dmitry Verzilov, an electoral commission member and district council member in Donetsk, said he himself was seized for several hours when he went to speak to rebel

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administration building, where he says he counted 83 prisoners. A Donetsk People's Republic spokesperson denied that prisoners were being held in the basement of the administration building.

In another hint of the growing lawlessness, Maxim Petrukhin, an aide to Donetsk People's Republic chairman Denis Pushilin, was gunned down by a passing car in the city center in broad daylight on Sunday. Pushilin said "Kiev agents" were likely to blame.

Donetsk People's Republic leaders have said each militia will oversee certain areas of law enforcement and military operations. But the commanders say there is no clear separation of duties yet, and all remain a law to themselves, with their alliances hard to guess. All three major Donetsk units were suspected of working with local oligarch Rinat Akhmetov, Ukraine's richest man and an ally of former President Viktor Yanukovich, after their fighters stopped an angry crowd from storming his residence and guarded it for days after. The militia leaders said their men were simply trying to prevent mass disorder.

Their ties to the Kremlin are also unclear. Mark Galeotti, a professor of global affairs at New York University and an expert on Russian security services, says that Khodakovsky was known as an officer of the "more close to Moscow variety" in Ukraine's special forces, where Russian agents were notoriously pervasive. Gromov in Lugansk was recently photographed in Moscow with Russian nationalist MP Vladimir Zhirinovskiy. But the three Donetsk commanders denied direct links with the Kremlin and said they had obtained their weapons from captured military installations.

Kiev has accused Russia of sending men and weapons into eastern Ukraine, including a pair of tanks that it said had come across the border on June 12. Rebels said they had seized the tanks from a military warehouse. (I saw three tanks flying a Russian flag outside Donetsk later that day.)

If the rebellion's military leaders are receiving money from Russia, it is most likely from nationalist oligarchs such as Konstantin Malofeev, who previously employed both Sloviansk commander Strelkov and Donetsk People's Republic Prime Minister Alexander Borodai at his firm, according to reporting by the independent newspaper *Novaya Gazeta* and well-known journalist Oleg Kashin. Malofeev also funded a separatist leader in Crimea, Kashin reported.

The Donetsk militia chiefs say they are loyal to the Donetsk People's Republic, though

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Republic; this is all just some project that I don't understand," Khodakovsky said. "I didn't vote in the referendum [on independence]. I didn't vote for this. I just faced a choice: to be with my own people or to be against my own people. Russia is my country. I served there. My relatives live there."

The Donetsk militia chiefs say they are loyal to the Donetsk People's Republic, though those ties seem informal and in some cases tenuous.

Their end goal is also vague: Zakharchenko said he would be able to lay down his weapons when "no tanks or fighting vehicles are pointing their barrels at me." But for now they remain united in a conflict against what they see as an unjust, aggressive government in Kiev. "A Russian man invented this in World War II," Zakharchenko said, gesturing to a huge Simonov anti-tank rifle pointing out of a window next to his office below a Soviet-built television tower, "and Russian men are still using it to defend their homeland."

Although Poroshenko has pledged amnesty for rebels who agree to lay down their arms, he specifically excluded those who have committed grievous crimes. Given that Borodai and Pushilin were slapped last week with charges of terrorism and attempting to overthrow the government, militia leaders can more likely expect prosecution than amnesty if Kiev retakes the east. Their actions have also divided the local populace, a majority of which opposes the rebels' tactics. If the stalemate continues or if eastern Ukraine successfully separates from the rest of the country, will these men eventually relinquish their power and risk their personal safety? Or will they begin fighting among themselves?

"If we put down our weapons by agreement, there are always people who don't want to do so because they've gotten used to the power that weapons give them," says Khodakovsky, the Vostok Battalion's commander. "We will have to detain them and force them to."

Alec Luhn is a Moscow-based journalist who has written for the Guardian, Politico, Slate, The Nation, the Independent, Vice News, and other publications.

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Annex 524

Interfax Ukraine, Kyiv Demands Moscow to Explain Use of Igla MANPADs in Donetsk Region,
Kyiv Post (19 June 2014)

Kyiv demands Moscow to explain use of Igla MANPADS in Donetsk region

By [Interfax-Ukraine](#).

Published June 19, 2014 at 6:59 pm



□ A chapel of the Seraphim Sarovsky Cathedral, which is located near a check-point of pro-Russian militants in the eastern Ukrainian city of Slavyansk, is seen destroyed as a result of combat against Ukrainian forces on June 16, 2014.

Photo by AFP

“Ukraine’s relevant authorities obtained photographic proof of Russian origin of the MANPADS used by terrorists in Donetsk and Luhansk regions. Thus, on June 6, after repelling an attack on Marynivka checkpoint (Donetsk region), a box that had contained 9M39 items (Igla), was found on the battlefield. The shipping ticket found in the box shows that the above-mentioned Igla MANPADS had been stored in the air defense military base of Russian Armed Forces No. 33859 (Yeysk, Krasnodar Krai) since 2001. The latest mark, verifying that the weapons were stored in a warehouse of military base No. 33859, is dated April 12, 2014. This is obvious from the presented photo materials,” reads the statement by Foreign Ministry posted on Wednesday.

Thus, on April 12, these MANPADS were being stored at the Russian military base in Yeysk, and on June 6, they were used in the attack on Marynivka checkpoint on Ukrainian-Russian border.

“Therefore, Ukraine, within the scheduled meeting of OSCE forum for security cooperation on June 18, addressed the Russian Federation demanding that it explain how Igla MANPADS got into separatists’ hands from the Russian military base,” reads the statement.

The Foreign Ministry of Ukraine has noted that Russia’s handing over MANPADS to terrorists not only confirms the facts of Russia’s direct intervention into Ukrainian internal affairs and Russia’s support for terrorism, but is also a crude violation of its international obligations on the storage and transportation control of MANPADS under the terms of the Wassenaar Arrangement - “Elements for Export Controls of Man-Portable Air Defence Systems.”

Annex 525

Max Vit, Military Equipment in Stary Oskol, KaviCom.ru (24 June 2014)

KaviCom.ru – Web Portal of Staryi Oskol

[K](#) /news-view-12861.htmlkavicom.ru

June 24, 2014, 1:53 p.m., Max Vit
Movement of military vehicles was detected at around 8 p.m. on June 23 in Staryi Oskol. This information and photos appeared on Odnoklassniki social network profiles of Staryi Oskol residents. A video showing army support vehicles and rocket launchers moving through Staryi Oskol is also being circulated. According to eyewitnesses who spoke to the military personnel in the convoys, it would appear that these units are being redeployed to the border with Ukraine to “reinforce border control”.









Max Vit

Views: 8715 Comments: 181 military vehicles

Annex 526

Lugansk Terrorists Are Financed by the Communist Party of Russia, Details (26 June 2014)

Lugansk terrorists are financed by the Communist Party of Russia (document)

podrobnosti.ua/982121-luganskih-terroristov-finansiruet-kompartija-rossii-dokument.html

June 25, 2014



Lugansk terrorists are financed by the Communist Party of Russia (document)

Terrorists of the self-proclaimed Lugansk People's Republic receive funding from the Communist Party of the Russian Federation (CPRF). This is evidenced by a letter of gratitude from the leader of the Lugansk militants to the leader of the Russian communists Zyuganov.

The self-proclaimed prime minister of the LNR Vasily Nikitin officially thanked the leader of the Russian Communist Party Gennady Zyuganov for financial and humanitarian support.

"I would like to express my deep gratitude to all the Russians, the Communist Party of the Russian Federation ... for what you do not forget, help us." Indeed, today we have difficulties in both medicines and food products, "noted in his speech Vasily Nikitin. A thank you note is also attached to the video, signed by the so-called head of the LC, Valery Bolotov.



LEADER OF THE LUHANSK PEOPLE'S REPUBLIC

3 Pl. Otechestvennoy Voyny, phone: +38 0642 58 58 88

Email: lnr@lugansk-online.info

No. 42/03 of June 25, 2014

Luhansk

Re: No. [blank] of [blank] 2014

Attn: Chairman of the Central
Committee of the Communist Party of
the Russian Federation, Leader of the
Communist Party group at the State
Duma of the Russian Federation
Mr. Gennady Andreyevich Zyuganov

LETTER OF GRATITUDE

Please accept this expression of gratitude from all of the Luhansk People's Republic for your humanitarian and financial aid.

/Leader of the Luhansk People's Republic/ [Signature] V.D. Bolotov

[Seal: Southeast. Luhansk People's Republic]

A letter of gratitude from the head of the LNR Bolotov to the head of the Communist Party of the Russian Federation Zyuganov. Photo from the site of terrorists, LNR

Recall that this is not the first fact of open support for terrorism in the Lugansk region by representatives of the Russian State Duma. In May, the head of the Liberal Democratic Party of Russia Vladimir Zhirinovskiy gave Lugansk fighters SUV "Tiger". This gesture Zhirinovskiy explained that "there this car is more necessary."

Annex 527

Harriet Salem, *Who's Who in the Donetsk People's Republic*, VICE News (1 July 2014)

news.vice.com/article/whos-who-in-the-donetsk-peoples-republic

Who's Who in the Donetsk People's Republic



[Ukraine](#)

Who's Who in the Donetsk People's Republic

By [Harriet Salem](#)

July 1, 2014 | 2:00 pm

An alleged Russian spy, a former Santa-for-hire, and a foul-mouthed former manager of a soap factory, to name just a few — the leaders of the “Donetsk People's Republic” are a motley bunch.

Now that Ukrainian President Petro Poroshenko has declared an end to a brief ceasefire and renewed his government's fight against eastern separatists, you'll want to be sure to not confuse Pushilin with Ponomaryov, or Gubarev with Girkin.

To help you out, here's the VICE News guide to who's who, who's in, and who's out in eastern [Ukraine's](#) rebel republic.

The founding father of the DPR: Pavel Gubarev

Rise to (and fall from) power:

Standing on a makeshift platform in front of a crowd of a few hundred people outside the Donetsk city administration building, 31-year-old Pavel Gubarev, kitted out in a tracksuit and baseball cap, was voted in as the “people's governor” by a quick show of hands on March 3.

His “election” came little more than a week after Ukrainian President Viktor Yanukovich fled the country on February 22 amid violent anti-government demonstrations, which killed more than 100 protesters and 16 police officers.

[Don't get too excited about Ukraine's new 'peace plan.'](#) [Read more here.](#)

Led by Gubarev, a crowd of protesters chanted “Russia, Russia, Russia” as they pushed by unenthusiastic riot police and took control of the administration building, which ended up changing hands various times in a matter of weeks.



Self-declared "people's governor" Pavel Gubarev, center, of the Donetsk People's Republic. (Photo via AP/Dmitry Lovetsky)

After seizing the helm of the separatist movement, Gubarev sought a referendum on the territorial status of the region and the non-recognition of steel and coal oligarch Sergey Taruta as the Kiev-appointed governor of Donetsk. But Gubarev's ambitions were brought to an abrupt halt when Kiev arrested the fledgling rebel leader in early March on charges of "advocating separatism" and "illegal seizure of power."

During his time in captivity, Gubarev's [Facebook page](#) spewed out fiery updates on the situation, calling on local men to take up arms and defend their land against the "Kiev junta" and "fascists" from the west.

After nearly two months in captivity, the self-declared "people's governor" was eventually freed on May 7 as part of a prisoner swap between Kiev and the separatists. But Gubarev returned to a rebellion that had marched on without him.

Russian Roulette: Separatists shoot down Ukraine plane. Watch here.

Having been effectively relieved of his leadership duties by his deputy Denis Pushilin, a sulky Gubarev at first spurned Donetsk to hang out in the rebel-held city of Sloviansk. He re-emerged in the region's administrative capital a few weeks later, but never regained his previous traction.

On May 29, Gubarev's men were ousted from the city's administration building by the Vostok Battalion, a heavily armed unit of the DPR's recently formed army answering to Russian citizen Igor Girkin (aka Igor Strelkov), the rebel republic's newly appointed defense minister.

Life before the DPR:

A longtime advocate of pan-Slavism, Gubarev joined the Russian National Unity Party — which played a key role in the Putin-backed putsch in Crimea — in the early 2000s. But Gubarev had little practical political experience before assuming his DPR post. He had previously worked as a Father Frost children's entertainer — the Slavic equivalent of a Santa-for-hire.

In or out:

Essentially out. While his fiery Facebook posts and YouTube rants continue, the ousting of his men from the administrative building was a clear signal that he has little real influence in the power structures of the DPR these days.

The Russian agent: Igor Girkin**Rise to power:**

Known by the nom de guerre Strelkov — meaning “shooter” in Russian — Igor Girkin is a shadowy figure that the Ukrainian government and its Western allies allege to be a member of the GRU, Russia's military intelligence directorate.

Sporting a clipped mustache and pomaded hair, Girkin arrived in Sloviansk in early April and was quickly endorsed by Sloviansk “people's mayor” Ponomaryov as the leader of the fighters defending the city from a Kiev-backed anti-terror operation.

Shortly after, leaflets were distributed across the DPR declaring that Girkin was the commander of all the rebel fighters in the region, known collectively as the “Donbas People's Militia.” His appointment as the “defense minister” of the DPR was one of the first acts of his old friend Aleksander Borodai as the DPR's prime minister.

While the DPR's defense minister is a bit media shy, he meticulously maintains a profile on the Russian social media site Vkontakte, posting precise updates on the situation in Sloviansk. His profile also contains a link to a page that details how volunteer fighters from Russia can travel to eastern Ukraine, and how others can donate money and aid.

Girkin's neighbors in Moscow have described him as “polite” and “quiet” — a stark contrast to the assessment of Ukraine's Interior Minister Arsen Avakov, who called the Russian rebel a “monster and a killer” and added him to a wanted list on charges of premeditated murder and sabotage.

Life before the DPR:

Girkin has not spoken with the Western press, but in an interview with the pro-Kremlin Russian tabloid *Komsomolskaya Pravda* he said that prior to coming to Donetsk he led a unit in the uprising in Crimea, which led to the southern peninsula's annexation by Moscow in March. He is also believed to have participated in the wars in Transnistria, Chechnya, and Bosnia.

Not content with hanging out in conflict zones and gathering intelligence, Girkin has also spent his spare time dressing up in old-school military gear. Photos on blogs and social networks show him at battlefield re-enactments kitted out in knight's armor and wearing a

World War I-era uniform.

During the 1990s, Girkin wrote for the right-wing Russian newspaper *Zavtra*, which is run by the anti-Semitic Russian nationalist Alexander Prokhanov.

In or out:

Definitely in. Strelkov is one of the most powerful rebel leaders.

The foul-mouthed "people's mayor" of Sloviansk: Vyacheslav Ponomaryov**Rise to (and fall from) power:**

Known for his chilling blue-eyed stare, gold-toothed grin, and baseball cap, Vyacheslav Ponomaryov rose to prominence after heavily armed pro-Russia rebels seized the eastern Ukrainian city of Sloviansk in April.

A 49-year-old political unknown, Ponomaryov first appeared in the media spotlight when he told journalists that Nelly Shtepa, the city's elected mayor, had "fucked off."

Shtepa, who spoke out against the gunmen who took over the city, was arrested in April and held by the rebels in the cellar of the city's state security service building. She wasn't the first, or the last.

Ponomaryov quickly developed a habit of chucking people he deemed hostile to his regime into the basement. VICE News correspondent Simon Ostrovsky and eight officials from the Organization for Security and Co-operation in Europe were among his high-profile detainees. They were later released, but Ostrovsky, who was beaten and accused of being a spy by the rebels, reported seeing at least "a dozen other nameless captives."

Vyacheslav Ponomaryov, the self-declared "people's mayor" of Sloviansk, speaking at one of his many press conferences.

When he wasn't detaining opponents, Ponomaryov's other favorite pastime was holding press conferences, where he would deliver long rambling rants to the assembled media, including occasional ominous warnings to journalists about where they would end up if they stepped out of line.

In one of Ponomaryov's more colorful outbursts, he referred to Ukraine's new president Petro Poroshenko as a "chocolate faggot" and an "ambassador of the devil," adding that he would like to "punch him in his fucking ugly mug." In another rant he declared Sloviansk "the capital of the DPR," remarking that he didn't need the help of the other rebel leaders.

Ukraine president promises an 'adequate response' after rebels shoot down military plane.**Read more here.**

But Ponomaryov's power-mad behavior caught up with him in the end. On June 10, amid rumors of child rape, looting, and a rampant drug problem, he was detained by his own forces on the command of the DPR's defense minister Igor Strelkov. The ostensible reason given for his arrest by the DPR was "engaging in activities incompatible with the goals and tasks of the civil administration," but most likely it was just because his psychopathic habits were getting out of hand.

His tearful mother, who said that her son was detained on his way to work, has pleaded for his release to no avail — he hasn't been seen or heard from since.

Some reports suggest that he has been executed, but if Ponomayrov is alive he might be lingering in the very same cellar that he once threw his adversaries in.

Life before the DPR:

Ponomayrov, who shared a house with his pensioner mom right up until his arrest, previously worked as the boss of a soap factory. The self-appointed people's mayor has also claimed to have served in the Soviet army in Afghanistan and in its Arctic-based Northern Fleet.

In or out:

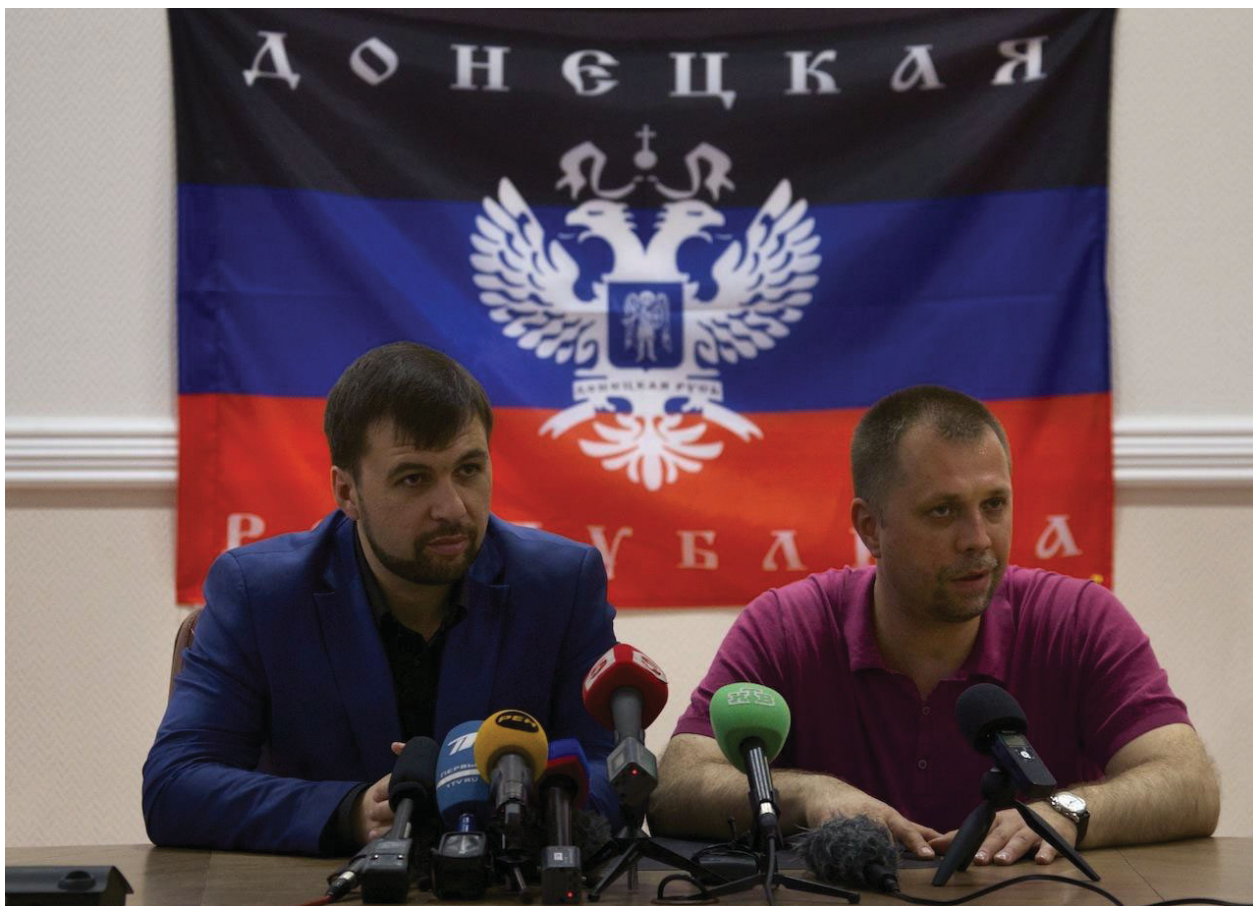
This political liability is definitely out. If he hasn't already met a sticky end, it's likely he will soon.

The chairman of the DPR: Denis Pushilin**Rise to power:**

A Donetsk local, born in Makiyivka, Pushilin made his power grab in March after Gubarev was incarcerated in Kiev.

Pushilin was one of the driving forces behind the rebel-held "referendum" that led the Donetsk and Luhansk oblasts to declare independence from Ukraine on May 11.

In the DPR constitution published just days later, Pushilin — who previously held the role of "deputy people's governor" — was promoted to the position of "Chairman of the Supreme Soviet" (speaker of parliament) for his efforts.



DPR Chairman Denis Pushilin, left, with the rebel republic's Prime Minister Aleksander Borodai at a press conference on May 29. (Photo via AP/Ivan Sekretarev)

He has been spotted in Moscow on several occasions since then, including in a meeting with high-profile Russian nationalist politician Vladimir Zhirinovskiy, who recently created a scandal when he instructed aides to rape a pregnant female journalist in front of a crowd of press.

With a penchant for shiny blue suits, Pushilin is well ahead of Gubarev and Ponomaryov in terms of style, but his fashion sense and Russian friends haven't managed to keep him out of trouble.

As Ukraine's eastern conflict has escalated the Chairman of the Supreme Soviet has increasingly been forced to take a backseat in decision making, whilst the DPR's new leaders Prime Minister Aleksandar Borodai and Defense Minister Igor Stelkov — both Russian citizens — call the shots.

In recent weeks there have been two attempts on the Pushilin's life by unknown assailants. The first attempt, a shooting, killed his assistant, whilst the second, a car bomb outside Donetsk administration building, took out three of his aides. Publically Pushilin has said the attacks on his life are a provocation by pro-Ukrainian forces, but the assassination attempts have fueled longstanding rumors of a rift in the rebel leadership.

Life before the DPR:

Becoming a breakaway rebel leader is not Pushilin's first dalliance with politics. In the 2012 parliamentary election he stood as a member of the obscure "We Have One Goal" party but failed to gain a seat after winning only 0.08 percent of the vote.

After completing his military service in the Ukrainian army in 2000, Pushilin worked a host of different jobs including as a casino dealer and a financial product salesman. He also worked for a successor company to MMM, the corrupt Russian Ponzi scheme that swindled thousands of people following the collapse of the Soviet Union.

Denis Pushilin, the leader of the DPR, appealing for Russian assistance on May 28.

In or out:

Unclear. This failed-politician-turned-rebel-leader's suave style won't save him for long. Two attempts have already been made on Pushilin's life, and the third likely isn't far off.

The political scientist: Aleksander Borodai

Rise to power:

Russian citizen Aleksander Borodai, a self-proclaimed political scientist and conflictologist, was named as the "prime minister" of the DPR on May 15.

Borodai — who carries a pistol in a holster on his hip and goes nowhere without an escort of burly, heavily armed Caucasian security men — has said that he came to eastern Ukraine as part of his patriotic duty on the invitation of the rebel republic's defense minister Igor Girkin. The two reportedly met in Transnistria and worked together in Crimea, Chechnya, and other conflict zones prior to taking up arms together in Ukraine.

Alexander Borodai, prime minister of the self-declared Donetsk People's Republic, discussing the release of OSCE monitors that had been detained by the DPR.

Immediately after becoming prime minister of the DPR, Borodai said that he was on a mission to "restore order" to the self-declared republic and announced the formation of a rebel army answerable to his buddy Girkin.

Borodai has repeatedly called for an armed Russian intervention in eastern Ukraine, and has also appealed to Moscow for humanitarian aid. Neither request has officially been met, although a stream of Russian fighters and weaponry, including RPGs and tanks, has flowed into the country across the porous eastern border.

Life before the DPR:

Before arriving in Donetsk, Borodai worked as an adviser to Crimea's prime minister, Sergey Askyonov — the frontman of the Putin-backed putsch that led to Russia's annexation of the southern peninsula. Prior to this, he worked as a consultant for Konstantin Malofeyev, a Moscow-based oligarch rumored to be financially sympathetic to the rebel uprising in Ukraine's east. Malofeyev is a Russian Orthodox private equity magnate who has risen to prominence in recent years as the Kremlin has placed greater emphasis on conservative beliefs.

Borodai worked as an editor at the Russian ultranationalist newspaper *Zavtra* in the 1990s.

In or out:

Definitely in, this shadowy figure might have been a latecomer to the uprising, but now he calls the shots in the DPR.

Photo via [Wikimedia Commons](#)

Topics: [donetsk](#), [donetsk people's republic](#), [ukraine](#), [war & conflict](#), [sloviansk](#), [pavel gubarev](#), [viktor yanukovich](#), [kiev](#), [denis pushilin](#), [crimea](#), [russian national unity](#), [europe](#), [petro poroshenko](#), [vladimir putin](#), [igor girkin](#), [strelkov](#), [vyacheslav ponomarev](#), [aleksander borodai](#)