

ARCHIVED REPORT

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Small Arms Ammunition (Europe)

Outlook

- Serial production ongoing for domestic procurement and export; international acceptance of NATO-standard ammunition continues to grow
- Europe remains a leading source of small arms ammunition, despite increasing competition on the international market
- We expect production of small arms ammunition from all European sources to average about 8 billion rounds annually through 2019

Orientation

Description. Ammunition for military small arms, 4.5x39mm to 15.5x106mm.

Sponsor. Both individual contractors and various governments sponsor the development of small arms ammunition.

Licensee. Due to the unique nature of this market, players rarely, if ever, make licensing arrangements.

Status. Development through serial production.

Total Produced. Through 2009, we estimate the various European contractors produced over 268 billion rounds of small arms ammunition since 1980 inclusive.

Application. Ammunition for military small arms – including side arms (pistols), submachine guns, shoulder arms (rifles and assault weapons), and crew-served machine guns.

Price Range. In 2010 U.S. dollars, the unit prices of new-production European small arms cartridges range from \$0.08 for the 5.5x15mm (.22 long rifle) cartridge to \$6.54 for the 15.2x186mm cartridge.

Contractors

Prime

| | |
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| BAE Systems Land & Armaments, Global Combat Systems - Munitions | http://www.baesystems.com , The Steel, Ridsdale, Bellingham, NE48 2EZ Northumberland, United Kingdom, Prime |
| FN Herstal SA | http://www.fnherstal.com , Voie de Liège 33, Herstal, 4040 Belgium, Tel: + 32 4 240 81 11, Fax: + 32 4 240 88 99, Email: info@fnherstal.com , Prime |
| Federal State Unitary Enterprise, Rosoboronexport, Rosoboronexport State Corp | http://www.rusarm.ru , 27/3 Stromynka St, Moscow, 107076 Russian Federation, Tel: + 7 495 964 61 40, Fax: + 7 495 963 26 13, Prime |

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| General Dynamics Santa Bárbara Sistemas | http://www.gdsbs.com , Manuel Cortina, 2, Madrid, 28010 Spain, Tel: + 34 91 5850390, Fax: + 34 91 5850268, Email: comunicacion@gdsbs.com, Prime |
| Nammo Raufoss AS | http://www.nammo.com , PO Box 142, Raufoss, 2831 Norway, Tel: + 47 61 15 36 00, Fax: + 47 61 15 36 20, Email: info@nammo.com, Prime |

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|----------------------------------|---|
| Nexter Munitions | http://www.nexter-group.fr , 7, route de Guerry, Bourges, 18023 France, Tel: + 33 2 48 21 91 11, Fax: + 33 2 48 21 91 42, Prime |
| RUAG Ammotec | http://www.ruag.com , Uttigenstrasse 67, Thun, 3602 Switzerland, Tel: + 41 332 282 220, Fax: + 41 332 282 627, Email: info.ammotec@ruag.com , Prime |
| Rheinmetall Defence | http://www.rheinmetall-defence.com , Rheinmetall Platz 1, Düsseldorf, 40476 Germany, Tel: + 49 211 473 01, Fax: + 49 211 473 4727, Email: info@rheinmetall-defence.com , Prime |
| Sellier & Bellot JSC | http://www.sellier-bellot.cz , Lidicka 667, Vlasim, 25813 Czech Republic, Tel: + 420 317 892 492, Fax: + 420 317 892 489, Email: info@sellier-bellot.cz , Prime |
| Zaklady Metalowe Mesko SA | http://www.mesko.com.pl , Ulitsa Legionow 122, Skarzysko-Kamienna, 26-111 Poland, Tel: + 48 41 253 30 01, Fax: + 48 41 252 02 80, Email: marketing@mesko.com.pl , Prime |

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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

Small Arms Cartridge Designations

Note: Given the wide availability of small arms ammunition of all types worldwide – and in an effort to avoid redundancy and confusion – we list commonly used military ammunition in this report by caliber, not by specific manufacturer.

Cartridge Caliber

4.5x39mm
4.6x30mm

4.73x33mm
5.45x39mm

5.45x18mm

5.5x15mm

Common Designation

4.5x39 Russian, 4.5 SPS, 4.5 Underwater
4.6 PDW

Ohne Hülse (Caseless), DM11
5.45mm Russian Rifle, M74

5.45mm Russian Pistol

.22 Long Rifle

Producing Country

Russian Federation
Switzerland
United Kingdom
Germany
Armenia
Bulgaria
Czech Republic
Germany
Poland
Romania
Russian Federation
Ukraine
Serbia
Poland
Russian Federation
Belgium
Bulgaria
Czech Republic
Finland
France
Germany
Italy
Portugal
Romania
Russian Federation
Spain
Sweden
Switzerland
United Kingdom
Serbia

Small Arms Ammunition (Europe)

Cartridge Caliber
5.56x45mm NATO**Common Designation**
.223 Remington
M193, M855 (SS109)**Producing Country**Belgium
Bosnia-Herzegovina
Czech Republic
Finland
France
Germany
Greece
Italy
Poland
Portugal
Russian Federation
Spain
Sweden
Switzerland
Turkey
United Kingdom
Serbia5.56x45mm
5.6x35mm5.56mm French
.22 HornetFrance
Czech Republic
Finland
Germany
Sweden
Switzerland
United Kingdom
Italy5.66x23mm
5.6x29mm
5.66x39mm
5.68x26.72mm.224 BOZ
5.6mm Velo Dog
5.66 Underwater, 5.66 MPS
.22 Winchester MagnumRussian Federation
Germany
Switzerland
Belgium
Switzerland
Belgium5.7x28mm
6x47mm SM
6x52mmFN P90
6x47mm Swiss Match
.243 WinchesterCzech Republic
Finland
Germany
Sweden
Switzerland
Serbia

6.35x16mm

.25 Automatic Colt Pistol (ACP)

Belgium
Czech Republic
Finland
France
Germany
Italy
Spain
Sweden
Switzerland
Serbia6x39mm
6.5x50mm
6.5x52mm6mm Norma
6.5mm Arisaka
6.5mm Mannlicher-CarcanoSweden
Sweden
Sweden
Serbia

6.5x54mm

6.5x54mm Mannlicher-Shoenauer,
DWM 477, Roth 632Czech Republic
Germany

6.5x55mm

6.5mm Swedish Mauser

Serbia
Finland
Germany
Norway
Sweden
Switzerland
Serbia

Small Arms Ammunition (Europe)

| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|--------------------------|---------------------------------------|--------------------------|
| 6.5x55mm | 6.5-284 Norma | Sweden |
| 6.5x57mm | 6.5x57mm Mauser | Czech Republic |
| | | Germany |
| | | Switzerland |
| 7x57mm | 7mm Mauser, 7mm Spanish Mauser, M1893 | Belgium |
| | | Croatia |
| | | Finland |
| | | Germany |
| | | Italy |
| | | Portugal |
| | | Spain |
| | | Sweden |
| | | Switzerland |
| | | Serbia |
| 7x63mm | 7mm Remington Magnum | Belgium |
| | | Finland |
| | | Germany |
| | | Sweden |
| | | Switzerland |
| | | Serbia |
| 7x66mm | 7x66mm Vom Hofe Super Express | Germany |
| 7.5x22mm | 7.5mm Swiss Revolver | Italy |
| | | Switzerland |
| 7.5x54mm | 7.5mm French, 7.5mm MAS | France |
| | | Serbia |
| 7.5x55mm | 7.5mm Schmidt-Rubin, M1911 | Germany |
| | | Italy |
| | | Sweden |
| | | Sweden |
| | | Switzerland |
| 7.62x25mm | 7.62mm Tokarev | Belarus |
| | | Bulgaria |
| | | Czech Republic |
| | | Finland |
| | | Poland |
| | | Romania |
| | | Russian Federation |
| | | Slovak Republic |
| | | Ukraine |
| | | Serbia |
| 7.62x33mm | 7.62mm Spanish Regena, Model 68 | Spain |
| 7.62x33mm | .30 Carbine | Belgium |
| | | Germany |
| | | Italy |
| | | Sweden |
| | | Switzerland |
| | | United Kingdom |
| | | Serbia |
| 7.62x36mm | 7.62mm Underwater Dart | Germany |
| 7.62x38mm | 7.62mm Nagant Revolver | Italy |
| | | Russian Federation |
| | | Switzerland |
| | | Ukraine |
| | | Serbia |
| 7.62x39mm | 7.62mm Soviet, M1943 | Armenia |
| | | Belarus |
| | | Belgium |
| | | Bosnia-Herzegovina |
| | | Bulgaria |
| | | Croatia |
| | | Czech Republic |

Small Arms Ammunition (Europe)

| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|--------------------------|---|--------------------------|
| 7.62x40mm | 7.62mm SP-3 | Finland |
| 7.62x42mm | 7.62 Silent Russian, 7.62 SP-4 | Germany |
| 7.62x45mm | 7.62mm Czech, M1952 | Hungary |
| 7.62x51mm NATO | .308 Winchester | Netherlands |
| | | Poland |
| | | Portugal |
| | | Romania |
| | | Russian Federation |
| | | Slovak Republic |
| | | Sweden |
| | | Switzerland |
| | | Ukraine |
| | | Serbia |
| | | Russian Federation |
| | | Russian Federation |
| | | Czech Republic |
| | | Belgium |
| | | Bosnia-Herzegovina |
| | | Czech Republic |
| | | Denmark |
| | | Finland |
| | | France |
| | | Germany |
| | | Greece |
| | | Italy |
| | | Netherlands |
| | | Norway |
| | | Poland |
| | | Portugal |
| | | Russian Federation |
| | | Spain |
| | | Sweden |
| | | Switzerland |
| | | Turkey |
| | | United Kingdom |
| | | Serbia |
| 7.62x54mm | 7.62mm Mosin-Nagant, M1891 | Belarus |
| | | Bosnia-Herzegovina |
| | | Bulgaria |
| | | Czech Republic |
| | | Finland |
| | | Poland |
| | | Romania |
| | | Russian Federation |
| | | Sweden |
| | | Ukraine |
| | | Serbia |
| 7.62x63mm | PZAM | Russian Federation |
| 7.62x63mm | .30-06 Springfield, .30 Browning, M1906 | Belgium |
| | | Bosnia-Herzegovina |
| | | Czech Republic |
| | | Denmark |
| | | Finland |
| | | France |
| | | Germany |
| | | Greece |
| | | Hungary |
| | | Italy |
| | | Portugal |
| | | Spain |
| | | Sweden |

Small Arms Ammunition (Europe)

| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|--------------------------|---|--------------------------|
| | | Switzerland |
| | | Turkey |
| | | United Kingdom |
| | | Serbia |
| 7.63x25mm | 7.63mm Mauser, .30 Mauser Pistol | Italy |
| | | Portugal |
| 7.65x17mm | 7.65mm Browning, .32 Automatic Colt Pistol | Belgium |
| | | Czech Republic |
| | | Finland |
| | | France |
| | | Germany |
| | | Hungary |
| | | Italy |
| | | Slovak Republic |
| | | Spain |
| | | Sweden |
| | | Switzerland |
| | | Turkey |
| | | Serbia |
| 7.65x19mm | 7.65mm Longue, 7.65 MAS | France |
| | | Spain |
| | | Germany |
| | | Italy |
| | | Portugal |
| | | Sweden |
| 7.65x21mm | 7.65mm Parabellum, 7.65mm Luger | Finland |
| 7.65x53mm | 7.65mm Argentine Mauser | Belgium |
| | | Sweden |
| | | Serbia |
| 7.7x56mm | .303 Lee-Enfield, .303 British | Belgium |
| | | Greece |
| | | Portugal |
| | | Sweden |
| | | United Kingdom |
| | | Serbia |
| 7.7x58mm | 7.7mm Ariska, Type 99 | Sweden |
| 7.82x65mm | .308 Norma Magnum | Sweden |
| 7.82x66mm | .300 Winchester Magnum | Belgium |
| | | Finland |
| | | Germany |
| | | Sweden |
| | | Switzerland |
| 7.92x24mm | 7.92mm Subcaliber, M388 | Portugal |
| 7.92x24mm | 7.92mm Portuguese Regana, M973 | Portugal |
| 7.92x57mm | 8mm Mauser | Belgium |
| | | Bosnia-Herzegovina |
| | | Czech Republic |
| | | Germany |
| | | Bosnia-Herzegovina |
| | | Czech Republic |
| | | Germany |
| | | Italy |
| | | Norway |
| | | Portugal |
| | | Spain |
| | | Sweden |
| | | Switzerland |
| | | Turkey |
| | | United Kingdom |
| | | Serbia |

Small Arms Ammunition (Europe)

| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|--------------------------|--|--------------------------|
| 8x16mm | .320 Short CF, .320 Short Webley, GR97 | Belgium |
| 8x18mm | 8mm Roth-Steyr | Italy |
| 8x27mm | 8mm Gasser, GR304 | Italy |
| 8x27mm | 8mm French, 8mm Lebel | Serbia |
| 8x56mm | 8mm Hungarian Mannlicher | Italy |
| 8.6x70mm | .338 Lapua Magnum | Switzerland |
| 9x17mm | 9mm Short, .380 Automatic Colt Pistol | France |
| | | Italy |
| | | Hungary |
| | | Finland |
| | | Sweden |
| | | Switzerland |
| | | Belgium |
| | | Czech Republic |
| | | Denmark |
| | | Finland |
| | | Germany |
| | | Greece |
| | | Hungary |
| | | Italy |
| | | Netherlands |
| | | Portugal |
| | | Switzerland |
| 9x18mm | 9mm Police, 9mm Ultra | Belgium |
| | | Germany |
| | | Italy |
| | | Switzerland |
| 9x18mm | 9mm Makarov, 9mm Stechkin, Type 59 | Armenia |
| | | Belarus |
| | | Bulgaria |
| | | Romania |
| | | Russian Federation |
| | | Slovak Republic |
| | | Russian Federation |
| | | Ukraine |
| | | Spain |
| | | Sweden |
| | | Switzerland |
| | | Turkey |
| | | Serbia |
| 9x19mm | 9mm Glisenti | Italy |
| 9x19mm | 9mm Parabellum, 9mm Luger | Armenia |
| | | Belgium |
| | | Austria |
| | | Bosnia-Herzegovina |
| | | Bulgaria |
| | | Czech Republic |
| | | Denmark |
| | | Finland |
| | | France |
| | | Germany |
| | | Greece |
| | | Hungary |
| | | Italy |
| | | Netherlands |
| | | Norway |
| | | Poland |
| | | Portugal |
| | | Romania |
| | | Russian Federation |
| | | Slovak Republic |
| | | Spain |

Small Arms Ammunition (Europe)

| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|-----------------------------|---|---|
| | | Sweden Switzerland Turkey United Kingdom Serbia Spain Sweden Serbia |
| 9x20mm | 9mm Swedish | Russian Federation Czech Republic Germany Hungary Italy Slovak Republic Switzerland |
| 9x21mm 9x21mm | 9mm Gyurza 9mm IMI | Switzerland Italy Switzerland Belgium United Kingdom |
| 9x22mm 9x23mm | .357 SIG 9mm Mannlicher, 9mm Steyr | Belgium United Kingdom Belgium Portugal Spain |
| 9x23mm | 9mm Action Express | Belgium Czech Republic Italy |
| 9x23mm | 9mm Bergmann-Bayard, 9mm Largo | Belgium Italy Belgium Czech Republic Italy |
| 9x23mm | .38 Automatic Colt Pistol | Belgium Italy Belgium Czech Republic Italy |
| 9x23mm | .38 Super Auto | Belgium Czech Republic Italy Belgium Belgium Czech Republic Finland France Germany Italy Poland Russian Federation Spain Sweden Switzerland Turkey United Kingdom Serbia |
| 9x29mm 9x29mm | 9mm Winchester Magnum .38 Smith & Wesson Special | France United Kingdom Finland France Germany Italy Poland Sweden Switzerland United Kingdom Serbia-Montenegro Russian Federation Belgium Italy Slovak Republic Switzerland Serbia |
| 9x31mm | .380 British, .38/200 | |
| 9x33mm | .357 Smith & Wesson Magnum | |
| 9x39mm 9x57mm 10x21mm | 9mm SP-5/SP-6 9mm Mauser, DWM 491B .40 Smith & Wesson | |

Small Arms Ammunition (Europe)

| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|--------------------------|----------------------------|--|
| 10x22mm | .41 Action Express | Belgium France Italy Spain United Kingdom |
| 10x25mm | .44 Smith & Wesson Russian | Italy |
| 10x25mm | 10mm Bren Ten | Italy Sweden United Kingdom |
| 11x33mm | .44 Remington Magnum | Serbia Finland Italy Sweden |
| 11.43x23mm | .45 Automatic Colt Pistol | Belgium France Germany Greece Italy Norway Russian Federation Spain Switzerland Turkey Serbia |
| 11.5x19mm | .455 Webley Mk VI | Italy United Kingdom |
| 12.7x33mm | .50 Action Express | Italy |
| 12.7x77mm | .50 Spotting Rifle | Belgium Greece Spain |
| 12.7x99mm | .50 Browning, .50 BMG | Belgium Bosnia and Herzegovina Denmark France Germany Greece Italy Netherlands Norway Portugal Romania Spain Sweden Switzerland Turkey United Kingdom |
| 12.7x107mm | 12.7mm Soviet | Serbia Bosnia and Herzegovina Bulgaria Czech Republic Hungary Poland Romania Russian Federation Ukraine |
| 14.5x114mm | 14.5mm Soviet | Serbia Belarus Bulgaria Poland Romania |

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| <u>Cartridge Caliber</u> | <u>Common Designation</u> | <u>Producing Country</u> |
|--------------------------|---------------------------|--------------------------|
| 15.2x186mm | 15.2 Steyr AMR | Russian Federation |
| 15.5x106mm | MILO BRG-15 | Ukraine |
| | | Switzerland |
| | | Belgium |

Variants/Upgrades

Variants. Not generally applicable. Upgraded rounds usually carry new designations to distinguish them from other cartridges of similar design.

Modernization and Retrofit Overview. Not applicable. Contractors usually integrate product improvements to a specific round as production cut-ins.

Program Review

Background. Since the emergence of the 'arquebus' matchlock rifle on the continent in the 15th century, Europe has remained the center of small arms development.

For the purposes of our discussion, we define small arms as the basic cartridge-firing individual and crew-served weapons of the infantry, as follows:

- Side arms (pistols), firing pistol-caliber ammunition
- Submachine guns (machine pistols), firing pistol-caliber ammunition
- Battle carbines, firing intermediate-caliber ammunition
- Battle rifles, firing full-caliber rifle ammunition
- In addition, infantry small arms encompass crew-served machine guns, as follows:
- Light machine guns, firing either intermediate-caliber or full-caliber ammunition
- Medium (general-purpose) machine guns, firing full-caliber ammunition
- Heavy machine guns, firing heavy (12.7mm and above) ammunition

Wide Availability, Huge Demand

The proliferation of European small arms since World War II has led to a wide availability of ammunition for these weapons worldwide. While an increasing number of nations are adopting NATO-standard arms and ammunition, the worldwide diversity of doctrinal, financial, and political circumstances leads to a continuing demand for a wide variety of ammunition well beyond NATO-standard types.

Small arms ammunition, while cheap in terms of unit price, represents a major expense for most nations due

to the large quantities required. At present, at least 30 European nations are involved to some extent in the European small arms ammunition market. In this report, we briefly review only the most active players in the European small arms ammunition market, so as to present a cross-section of the entire market.

Belgium

FN Herstal SA. Since its founding in 1891, the world-famous Fabrique Nationale firm has been the most prolific European developer, producer, and exporter of small arms and ammunition.

In addition to producing the latest pattern NATO-standard small arms ammunition, FN Herstal is also the leading producer of several supposedly obsolete ammunition types. These older ammunition types remain particularly popular with private shooting enthusiasts in the United States and Europe, as well as with the forces of developing nations. Despite the influx of new players, we expect FN Herstal will remain a potent force in the international market for the foreseeable future.

An Industry Leader

FN Herstal remains at the forefront of ammunition development. Major developments include:

- 5.56x45mm NATO (.223 Remington) SS109 round, which replaced the M193 as NATO's standard 5.56 round
- 7.62x51mm NATO (.308 Winchester) SS123 round, an advanced-design round with reportedly greater steel penetration characteristics than standard 7.62mm ammunition
- 12.7x99mm (.50 caliber) FN169 round, which reportedly gives performance comparable to standard 20mm projectiles

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Cutting-Edge Technology

In late 1988, FN Herstal announced the development of a new 5.7mm small arms system, the P90. The contractor claims this new 5.7x28mm round has three times the stopping power of a conventional 9x19mm Parabellum round. NATO has approved this ammunition for use. FN Herstal has thus far sold the P90 to Saudi Arabia and at least one Asian nation, as well as to a number of major police and other internal security organizations. In October 1999, FN Herstal announced that it had granted a license to Winchester-Olin for production of the new 5.7mm round in the United States.

Czech Republic

Sellier & Bellot JSC. In continuous operation since 1825, Sellier & Bellot remains one of the most significant European players in the small arms ammunition market. Offering an extensive line of military-pattern and sporting ammunition types, the firm depends primarily on export sales of pistol, rifle and shotgun ammunition for its continuing success.

181-Year Legacy

In 1825, Louis Sellier, a French merchant, secured a charter from Austrian Emperor Franz I to manufacture percussion caps for military small arms in Prague. Shortly afterwards, Sellier invited fellow Frenchman Jean Maria Nicolaus Bellot to join the company. In 1870, the firm entered the modern small arms ammunition market, initially with the production of Flobert rimfire and Lefauchaux pin-primer cartridges. By the turn of the century, Sellier & Bellot operated small arms ammunition production facilities in Prague, Schönebeck (Germany) and Riga (Latvia).

In 1945, the Czech government nationalized Sellier & Bellot as a state monopoly for the manufacture of both military and commercial small arms ammunition. In 1992, the firm became a joint stock company. The manufacturer exports nearly 70 percent of its production through its subsidiary, Sellier & Bellot Trade JSC.

Lucrative U.S. Market

Sellier & Bellot currently exports small arms ammunition to over 70 countries. In particular, Sellier & Bellot ammunition is well known to American sportsmen. In the United States, Sellier & Bellot ranks as one of the top foreign suppliers of commercial small arms ammunition.

France

Nexter Munitions. France produces large quantities of NATO-standard small arms ammunition for domestic

military and internal security use, as well as for sale to French client states in Africa and elsewhere in the world. Within the French defense industry, Nexter (formerly Giat Industries) remains the primary supplier of small arms ammunition.

Africa & the Middle East

French contractors now produce the majority of 7.5x54mm MAS pattern ammunition for export. Burkina Faso, Burundi, Cameroon, Central African Republic, Djibouti, Gabon, Gambia, Ivory Coast, Mali, Mauritania, Niger, Rwanda, and Senegal have all procured French 7.5mm and 5.56mm ammunition. Several undisclosed Middle Eastern states are also regular consumers of French small arms ammunition.

French firms also have long been in the forefront of ammunition development. Both Nexter (which, as Giat Industries, absorbed Luchaire and Matra Manhurin Defense) and Societe Francaise de Munitions have developed armor-piercing rounds. In addition, Societe Francaise de Munitions has developed new high-velocity THV ammunition for side arms and submachine guns. French forces also use 7.62mm PPI armor-piercing ammunition with ground-mounted and vehicle-mounted machine guns.

Corporate Evolution

In October 2006, Giat Industries approved a reorganization and an associated name change to Nexter. Under the restructuring, the group maintains four core operations:

- Nexter Systems
- Nexter Munitions
- Nexter Electronics
- Nexter Mechanics

The move reportedly was made to better prepare the firm for consolidation in the near future, possibly with either Thales or EADS.

Competing for Domestic Procurement

Reflecting the dramatic changes in the international market, France has expanded its sources of procurement for small arms ammunition beyond domestic contractors. In early 2001, Israel Military Industries Ltd (IMI) secured a three-year contract to supply a minimum of 40 million 5.56x45mm NATO (.223 Remington) M855 cartridges. At the same time, the team of Thomson-DASA Armements and (then) RO Defence won a contract worth \$7.4 million to supply at least 20 million M855 cartridges.

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Federal Republic of Germany

Rheinmetall Defence. This German player continues to rank among the world leaders in all aspects of ammunition development and production.

Acquiring the Eurometaal Line

With its acquisition of Eurometaal Holding NV (Zaandam, the Netherlands), Rheinmetall inherited this Dutch player's extensive line of small arms ammunition. Eurometaal had been primarily involved in producing NATO-standard small arms ammunition for the Dutch armed forces. Eurometaal also made some export sales to Latin America and southern Africa. Efforts to increase export sales appear to be paying off, with at least one sale to an undisclosed Southeast Asian nation: in early 2001, a Latin American nation (possibly Chile) procured 11.4 million rounds of Dutch small arms ammunition.

Prior to its acquisition by Rheinmetall, Eurometaal had also developed a new armor-piercing 12.7x99mm (.50 caliber) round for the Browning M2HB heavy machine gun. Designated the APi 2000, the round is ballistically similar to the standard line of .50-caliber ammunition, but its special metal alloy core and brass jacket offer a higher degree of armor perforation.

Norway

Nammo Raufoss AS. Norway produces a relatively small amount of small arms ammunition, almost entirely for Norwegian military requirements. Historically, Norway has not been a major exporter of small arms and ammunition.

However, due to their exceptional performance, certain types of Norwegian 12.7x99mm (.50 caliber) ammunition for the M2HB machine gun have gained an appreciable export following. Nammo Raufoss 12.7x99mm (.50 caliber) rounds include:

- NM140 Armor Piercing High Explosive Incendiary (AP-HE-I), featuring a patented bullet design that offers exceptional armor perforation performance and 'behind armor' effects
- NM160, which is an NM140 round with a tracer element
- NM140A1, the NM140 modified to suit a U.S. Navy requirement
- NM173, ballistically similar to the standard M2 ball round but offering superior perforation performance
- NM185, an NM173 round with an inert filling

Nammo Raufoss has sold these rounds in large numbers to Scandinavian nations, the Federal Republic of Germany, the United States, and outside Europe.

In 1998, the world-famous Raufoss small arms manufacturing firm became a component of the new Nordic Ammunition organization; the firm now operates as Nammo Raufoss.

Poland

Zaklady Metalowe Mesko SA. Long a member of the Warsaw Pact, Poland continues its serial production of Russian-pattern ammunition. However, as Poland integrates into NATO, the country is adopting NATO-standard chamberings for its small arms.

Expanding Market Presence

While there has been a moderate level of export to several Middle East nations (including Syria), most of Poland's recent production of small arms ammunition has been for domestic consumption.

While several Polish ammunition production facilities remain state-owned, the Zaklady Metalowe Mesko firm has begun to make itself known on the international market – with at least two significant sales to the Middle East. In addition to producing the 9x18mm Makarov pistol/submachine gun cartridge in standard form, this firm also produces the Russian-developed improved version of this round.

Russian Federation

FSUE Rosoboronexport. The former Soviet Union was long one of the largest producers (and users) of small arms ammunition in the world. Even after a period of consolidation, the Russian Federation still maintains a prodigious small arms manufacturing capacity.

Courting the Export Market

Given the realities of their economy, the Russians continue to place an increased emphasis on export sales as a means to generate sorely needed capital. Under the auspices of the Rosoboronexport organization, Russian contractors are securing an increasing number of export sales, due in no small part to the bargain-basement prices of Russian products on the international market.

The Novosibirsk Low Voltage Electrical Plant (Novosibirsk) and the Vostok firm (Moscow) produce several types of small arms ammunition.

Duplex Ammunition Introduced

In 1998, the Novosibirsk firm unveiled a 12.7x107mm duplex cartridge, available in two versions:

- 1SL Armor Piercing round
- 1LST Armor Piercing Incendiary Tracer round

In these designs, the tip of the second bullet rests in a recess in the base of the first bullet; three dimples on the

Small Arms Ammunition (Europe)

cartridge case hold the lower portion of the second bullet in place. The contractor has yet to report any sales of this round outside the Commonwealth of Independent States.

Another semi-privatized player is the joint stock company Kiorovsky Zavod Mayak. This firm, located in Kirov, specializes in the production of belted (linked) ammunition for machine guns. Available chamberings include 7.62x39mm, 7.62x54mm, 12.7x107mm, and 14.5x114mm.

Spain

General Dynamics Santa Barbara Sistemas. In addition to producing many modern small arms under license, Spanish ammunition contractors produce NATO-standard cartridges and several older-pattern cartridges.

Under the GD Umbrella

Exports of Spanish ammunition have increased with the rationalization of the Santa Barbara facilities. In early 2002, General Dynamics acquired Santa Barbara; the firm now operates as General Dynamics Santa Barbara Sistemas. Historically, export customers for Spanish small arms ammunition have included Brazil, Congo, Dominican Republic, Djibouti, Egypt, Malawi, Morocco, Tanzania, and Zaire.

Switzerland

RUAG Ammotec. The Swiss small arms ammunition industry, headed by the unified RUAG group, has traditionally focused on domestic requirements. However, the growing popularity of Swiss small arms has expanded the export portion of the Swiss market. The Swiss acknowledge exporting their small arms ammunition to Argentina, Austria, Chile, Denmark, Ecuador, France, Germany, the Netherlands, Portugal and Singapore. Open-source reporting suggests the list of export customers may be more extensive.

Swiss-P Line

In 1999, Schweizerische Munitionsunternehmung (now a component of RUAG) announced that it was offering a new family of ballistically matched 7.62x51mm NATO (.308 Winchester) and 7.82x66mm (.300 Winchester Magnum) ammunition. This 'Swiss-P' line is available in four types:

- Standard match-sniper
- Styx Action (limited penetration)
- Armor-piercing
- Subsonic

The marketing of the Swiss-P ammunition line continues under the RUAG Munition name.

RUAG Ammotec Emerges

In July 2002, RUAG announced that it was merging its small arms business with that of Dynamit Nobel (Germany). The new firm (of which RUAG owns 80 percent) operates as RUAG Ammotec. RUAG Ammotec is projecting annual sales of over \$195 million.

With its acquisition of Hirtenberger Defence Systems (Hirtenberg, Austria), RUAG Ammotec also controls the firm that has effectively monopolized the Austrian domestic and export markets, now that Sudösterreichische Metallindustrie is no longer trading. Available evidence indicates that military and security forces in the Middle East – including those in Iran, Iraq (pre-Operation Iraqi Freedom), and Jordan – have dealt with Hirtenberger and Sudösterreichische Metallindustrie.

United Kingdom

The British small arms ammunition industry produces the full range of NATO-standard ammunition for domestic procurement and export to over a dozen countries.

BAE Systems Land & Armaments. Once the world-famous RO Defence firm, this contractor has been a component of BAE Systems since mid-2000. Its Munitions & Ordnance division remains the major domestic supplier of small arms ammunition to the British Army. In 1997, the Italian Army procured 16.75 million 5.56x45mm NATO (.223 Remington) ball cartridges and 3.5 million 5.56x45mm NATO tracer cartridges from (then) RO Defence.

Oldies but Goodies

BAE Systems also continues to produce 'obsolete' ammunition patterns for export to nations still equipped with old-style British small arms. These customers include the former British colonies of Bangladesh, Botswana, and Tonga.

In 1999, the U.K. Ministry of Defence issued a requirement for up to 500 million rounds of small arms ammunition, mainly in the 5.56x45mm NATO (.223 Remington) pattern. In a reflection of the changing times since the end of the Cold War, a number of international firms tendered to the requirement. Also indicative of the changing times is the fact that the U.K. has recently procured small ammunition from countries such as Israel and Pakistan.

Brits Active in Civilian Market

In addition to BAE Systems, several smaller firms also produce small arms ammunition, with a significant portion of their sales from the civilian market. These firms include:

Small Arms Ammunition (Europe)

- The Cobra Gun Company
- Manroy Engineering, producing 12.7x99mm (.50 caliber) ammunition
- Conjay Firearms and Ammunition Ltd, producing 9x19mm Parabellum cartridges
- Eley Ltd, producing 5.5x15mm (.22 Long Rifle) cartridges for training purposes

The U.K. is also the home to one of the world's newest small arms cartridges, the .224 BOZ. Developed by the Civil Defence Supply Agency to provide police and internal security units with a new cartridge capable of defeating light vehicle and body armor, the BOZ cartridge features almost twice the velocity and effective range of the 9x19mm Parabellum round. Sales have thus far been limited to the United Kingdom; a number of other nations have expressed interest.

Related News

Turkey and Azerbaijan to Establish Arms Manufacturing Company – The governments of Turkey and Azerbaijan are preparing to establish a joint arms manufacturing company. The company will be a partnership between Turkish company Mechanical and Chemical Industry Corporation (MKE) and Azerbaijani company Azersimtel. The facilities are expected to be located in the Azerbaijani capital of Baku.

While the structure and scope of the company have yet to be determined, it has been reported that in its first stage of production, the joint venture will produce attack weaponry to equip the armed forces of Azerbaijan. The second stage will include the production of various defense materiel, munitions and ammunition.

Not only will products be used to arm the militaries of Turkey and Azerbaijan, but they will also be available to the export market. (FI, 6/10)

Russian Arms Plant Nears Completion in Venezuela – The Russian ammunition plant under construction in Venezuela is expected to be completed by the end of the year.

Russia's Izhevsk Mechanical Plant signed a contract back in 2007 licensing production of Kalashnikov rifles in Venezuela. Under the contract, Russia is building an assembly line for AK-103 rifles and 7.62mm ammunition in the Latin American country. Once completed, the plant will have the capacity to produce over 50 million rounds annually for Kalashnikov assault rifles. The production license will be valid for 10 years. (FI, 5/10)

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Funding

The various contractors, some of which are state-owned organizations, fund the development of small arms ammunition.

Timetable

The players listed in the **Contractors** section of this report continue to dominate the development of new types of small arms ammunition in Europe. We expect one or more completely new cartridge types to enter service within the forecast period.

Worldwide Distribution/Inventories

European small arms ammunition is available worldwide.

Forecast Rationale

Serial production of small arms ammunition by European arsenals and contractors continues for domestic procurement and export. The combined output of European manufacturers, which we expect will

average about 8 billion rounds per year through 2019, easily outpaces the combined production of the rest of the non-U.S. international small arms ammunition market.

Small Arms Ammunition (Europe)

The vast majority of European small arms ammunition production is of NATO-standard and Russian-pattern cartridges; a significant level of production also addresses the continued worldwide demand for older-pattern cartridges.

A Powerful Old Guard

In continuous operation since 1825, Sellier & Bellot remains one of the most significant European players in the small arms ammunition market. Offering an extensive line of military-pattern and sporting ammunition types, the firm depends primarily on export sales of pistol, rifle, and shotgun ammunition for its continuing success.

Sellier & Bellot currently exports small arms ammunition to over 70 countries. In particular, Sellier & Bellot ammunition is well known to American sportsmen. In the United States, Sellier & Bellot ranks as one of the top foreign suppliers of commercial small arms ammunition.

Enter RUAG Ammotec

The creation of RUAG Ammotec, a merger of Dynamit Nobel Ammotec GmbH and the ammunition division of

RUAG Munition, continues to shake the European small arms ammunition market. RUAG Ammotec claims to be Europe's largest supplier of small arms ammunition, with projected annual sales of over \$195 million.

The emergence of RUAG Ammotec is causing several other European players to investigate potential teaming arrangements of their own in order to remain competitive. As new players account for an increasingly greater market share, the days of massive production of small arms ammunition by a select group of European players are clearly over.

Plenty of Opportunities

The European small arms ammunition market remains a dynamic environment, increasingly under the influence of a new generation of emerging players. While the Global War on Terror has not significantly impacted European production of small arms ammunition, the ongoing demand for Russian-pattern ammunition and the growing worldwide acceptance of NATO-pattern ammunition as the international standard continue to support the European market, providing ample opportunities for old and new players alike.

Ten-Year Outlook

Given the scarcity of open-source data regarding European small arms ammunition production, developing a viable 10-year production outlook has become increasingly problematic. Nevertheless, the Forecast International Weapons Group expects the combined output of European manufacturers will average about 8 billion rounds per year through 2019.

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