

ARCHIVED REPORT

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Military Rifles (International)

Outlook

- Non-U.S. and non-European production is primarily for domestic sales, with relatively limited export sales
- IWI and Singapore Technologies Kinetics are positioned to become real players in the international market
- We expect production of military rifles and carbines from all non-U.S. and non-European sources to average 97,000 weapons annually

Orientation

Description. Military bolt-action, semi-automatic, and automatic shoulder-fired small arms.

Sponsor. The various contractors develop, produce, and market various military rifle and carbine designs.

Licensees. Several contractors produce European and U.S. small arms designs, with or without license.

Total Produced. Through 2023, we estimate the various non-U.S. and non-European contractors produced about 7.35 million military rifles and carbines since 1980 inclusive.

Status. Development through serial production.

Application. The standard infantry individual shoulder weapon for both offensive and defensive operations.

Price Range. In 2024 U.S. dollars, non-U.S. and non-European military rifles and carbines carry unit prices ranging from \$59 for the MD2A1 to \$868 for the 7.62x51mm NATO (.308 Winchester) version of the Galil ARM and \$3,065 for the Denel NTW 20.

Contractors

Prime

China North Industries Corp (NORINCO)	http://www.norinco.cn , 12A Guang An Men Nan Jie, PO Box 100053, Beijing, China, Tel: + 86 10 6352 9988, Fax: + 86 10 6354 0398, Email: norinco@norinco.cn , Prime
Colt Canada Corp, (formerly Diemaco Inc)	http://www.coltcanada.com , 1036 Wilson Ave, Kitchener, Ontario, Canada, Tel: + 1 (519) 893-6840, Fax: + 1 (519) 893-3144, Email: postmaster@coltcanada.com , Prime
Denel SOC Ltd	http://www.denel.co.za , Nellmapius Dr, Irene, South Africa, Tel: + 27 12 671 2700, Fax: + 27 12 671 2751, Email: marketing@denel.co.za , Prime
Industria de Material Belico do Brazil, IMBEL	http://www.imbel.gov.br , Avenida 15 de Marco, Casa 1, Portao de Limeira, Piquete, Brazil, Tel: + 55 12 3156 9042, Fax: + 55 12 3156 9028, Email: comercial.sp@imbel.gov.br , Prime

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Israel Weapon Industries Ltd, (formerly IMI Small Arms Division)	http://iwi.net/ , PO Box 63, Ramat Hasharon, Israel, Tel: + 972 3 760 6000, Fax: + 972 3 760 6001, Email: info@israel-weapon.com , Prime
Ordnance Factories Organization of India, Ordnance Factory Board - Export Division	http://www.ofb.gov.in , 10 A, S K Bose Rd, Kolkata, India, Tel: + 91 33 2248 5077 80, Fax: + 91 33 2248 9744, Email: ofbtrade@dataone.in , Prime
Pakistan Ordnance Factories	Wah Cantt, Pakistan, Tel: + 92 51 9055 21019, Fax: + 92 51 9316253, Email: exports@pof.gov.pk , Prime
SNT Motiv Co Ltd, (formerly S&T Daewoo Co Ltd)	http://www.sntmotiv.com , 363 Yeoraksongjeong-ro, Cheolma-myeon, Gijang-Gun, Busan, Korea, South, Tel: + 82 51 509 2114, Fax: + 82 51 508 3339, Email: bkyun@mail.dwpi.co.kr , Prime
Singapore Technologies Land Systems Ltd, (ST Land Systems)	http://www.stengg.com , 249 Jalan Boon Lay, Singapore, Singapore, Tel: + 65 6265 1066, Fax: + 65 6261 6932, Email: comms.kinetics@stengg.com , Prime
Thales Australia, Armaments & Ammunition	http://www.thalesgroup.com , 7 Murray Rose Ave, Sydney Olympic Park, New South Wales, Australia, Tel: + 61 2 9562 3333, Email: communications@thalesgroup.com , Prime

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

Technical Data

<u>Caliber</u>	<u>Designation</u>	<u>Type (Action, Fire Modes, Magazines)</u>
<u>Manufacturer – Thales Australia</u>		
5.56x45mm NATO (.223 Remington)	F88 Austeyr series	Gas, selective, 30-rd mag
7.62x51mm NATO (.308 Winchester)	L1A1	Gas, semi-auto, 20-rd mag
<u>Manufacturer – China North Industries Corp (NORINCO)</u>		
5.45x39mm	Type 88	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	Type CQ	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	Type 84 series	Gas, selective, 20/30-rd mags
5.8x42mm Chinese	Type 95 series	Gas, selective, 30-rd mag
7.62x39mm M1943	Type 56 carbine	Gas, semi-auto, 10-rd mag
7.62x39mm M1943	Type 56 series	Gas, selective, 30-rd mag
7.62x39mm M1943	Type 56-1	Gas, selective, 30-rd mag
7.62x39mm M1943	Type 56-2	Gas, selective, 30-rd mag
7.62x39mm M1943	Type 22	Gas, selective, 30-rd mag
7.62x39mm M1943	Type 68	Gas, selective, 15/30-rd mags
7.62x39mm M1943	Type 81-1	Gas, selective, 30-rd mag
7.62x39mm M1943	Type 86S	Gas, semi-auto, 30-rd mag
7.62x39mm M1943	Type WQ 314 series	Gas, selective, 30-rd mag
7.62x54mm	Type 79	Gas, semi-auto, 10-rd mag
<u>Manufacturer – S&T Motiv Co Ltd</u>		
5.56x45mm NATO (.223 Remington)	K2	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	K1A1	Gas, selective, 20/30-rd mags
<u>Manufacturer – Denel SOC Ltd</u>		
5.56x45mm NATO (.223 Remington)	Vektor R4	Gas, selective, 35/50-rd mags
5.56x45mm NATO (.223 Remington)	Vektor LM4	Gas, semi-auto, 35-rd mag
5.56x45mm NATO (.223 Remington)	Vektor R5	Gas, selective, 35/50-rd mags
5.56x45mm NATO (.223 Remington)	Vektor LM5	Gas, semi-auto, 35-rd mag
5.56x45mm NATO (.223 Remington)	Vektor R6	Gas, selective, 35-rd mag
5.56x45mm NATO (.223 Remington)	Vektor CR21	Gas, selective, 20/35-rd mags
14.5x114mm	NTW	Bolt action, single shot
20x82mm	NTW	Bolt action, single shot

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<u>Caliber</u>	<u>Designation</u>	<u>Type (Action, Fire Modes, Magazines)</u>
<u>Manufacturer – Colt Canada Corp</u>		
5.66x15.11mm (.22 Long Rifle)	C10 Cadet Rifle	Blowback, semi-auto, 10/15-rd mags
5.56x45mm NATO (.223 Remington)	C7	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	C7A1	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	C8	Gas, selective, 30-rd mag
7.62x63mm (.30-06 Springfield)	SAR Tech Rifle	Bolt action, 5-rd mag
<u>Manufacturer – Industria de Material Belico do Brasil (IMBEL)</u>		
5.66x15.11mm (.22 Long Rifle)	MD2A1	Blowback, selective, 10-rd mag
5.56x45mm NATO (.223 Remington)	Fusil M97 MD2	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	Fusil M97 MD3	Gas, selective, 20/30-rd mags
7.62x51mm NATO (.308 Winchester)	FAL	Gas, semi-auto, 20-rd mag
7.62x51mm NATO (.308 Winchester)	FAP	Gas, selective, 20-rd mag
7.62x51mm NATO (.308 Winchester)	FAL PARA	Gas, selective, 20-rd mag
7.62x63mm (.30-06 Springfield)	M1 Garand	Gas, semi-auto, 8-rd en-bloc clip
<u>Manufacturer – Israel Weapon Industries Ltd (IWI)</u>		
5.56x45mm NATO (.223 Remington)	Galil ARM	Gas, selective, 35/50-rd mags
5.56x45mm NATO (.223 Remington)	Galil AR	Gas, selective, 35/50-rd mags
5.56x45mm NATO (.223 Remington)	Galil SAR	Gas, selective, 35/50-rd mags
5.56x45mm NATO (.223 Remington)	AAR90	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	Galil MAR Micro	Gas, selective, 35-rd mag
5.56x45mm NATO (.223 Remington)	Galil Marksman Mk 1	Gas, selective, 35/50-rd mags
5.56x45mm NATO (.223 Remington)	Tavor TAR-21	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	Tavor STAR-21	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	Tavor CTAR-21	Gas, selective, 30-rd mag
5.56x45mm NATO (.223 Remington)	Tavor MTAR-21	Gas, selective, 30-rd mag
7.62x33mm (.30-cal carbine, M1)	MAGCAL	Gas, selective, 20-rd mag
7.62x51mm NATO (.308 Winchester)	Galil ARM	Gas, selective, 25-rd mag
7.62x51mm NATO (.308 Winchester)	Galil AR	Gas, selective, 25-rd mag
7.62x51mm NATO (.308 Winchester)	Galil Sniper Rifle	Gas, semi-auto, 20-rd mag
7.62x51mm NATO (.308 Winchester)	SR-99	Gas, semi-auto, 10/25-rd mags
<u>Manufacturer – Ordnance Factories Organization of India</u>		
5.56x45mm (special)	INSAS	Gas, selective, 20/30-rd mags
7.62x51mm NATO (.308 Winchester)	IASL	Gas, semi-auto, 20-rd mag
<u>Manufacturer – Pakistan Ordnance Factories</u>		
7.62x51mm NATO (.308 Winchester)	G3 series	Gas, selective, 20-rd mag
<u>Manufacturer – Singapore Technologies Kinetics Ltd</u>		
5.56x45mm NATO (.223 Remington)	AR15	Gas, semi-auto, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	M16	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	SAR 80	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	SR 88	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	SR 88A	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	SAR 21	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	SAR 21 series	Gas, selective, 20/30-rd mags
5.56x45mm NATO (.223 Remington)	HK33E	Delayed blowback, selective, 25-rd mag

Variants/Upgrades

Variants. Not generally applicable. To have the greatest degree of product differentiation and largest range of products, small arms manufacturers usually give modified or upgraded models of their military rifles and assault weapons different designations.

Modernization and Retrofit Overview. Not generally applicable. Contractors usually integrate upgrades as production cut-ins.

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Program Review

Note. *In an effort to maintain the focus of this report on military-pattern rifles and carbines, we limit our discussion of specialized sniper rifles and anti-materiel rifles to those weapons that already have had or demonstrate the potential to have a significant impact on the international small arms market.*

Background. The military shoulder weapon remains the primary infantry weapon and the single most common class of weapon within any armed force. In addition to serving as the primary weapon of the infantryman, rifles and carbines provide a level of self-defense for combat support and non-combatant personnel. The military shoulder weapon has evolved into two distinct types:

- The full-caliber 7.62mm battle rifle, firing cartridges such as the Russian 7.62x54mm and the 7.62x51mm NATO (.308 Winchester)
- The intermediate-cartridge battle carbine, firing rounds such as the Russian 5.45x39mm and 7.62x39mm, and the 5.56x45mm NATO (.223 Remington)

Standardization Issues

The 5.56x45mm NATO (.223 Remington) cartridge is fast becoming the international standard for battle carbines. However, the wide availability of small arms from the former Soviet Union continues to complicate this process. The massive expense of abandoning the existing inventory of weapons chambered for the Soviet-era 5.45x39mm, 7.62x39mm, and 7.62x54mm cartridges in favor of new weapons and ammunition is something many countries simply cannot afford.

In this report, we focus on the international (outside the United States and Europe) development, production, and procurement of military rifles and assault weapons.

AFRICA

Republic of South Africa

Denel SOC Ltd. Indigenous small arms production in South Africa dates from the establishment of the facility at Lyttleton, near Pretoria, in February 1951. After reorganization in 1991, ARMSCOR (a government-owned umbrella organization) transferred most of its production interests to a new umbrella organization, Denel Ltd.

FAL/R1

In 1959, the South African government selected the FN Herstal 7.62x51mm NATO (.308 Winchester) FAL as its standard infantry shoulder arm. In 1963, Belgium

embargoed further orders from South Africa, although the Belgian government did permit the delivery of a final 6,820 FAL rifles for local assembly during FY63-64. By 1964, the South Africans were producing all the parts for their FAL, designated R1, and produced 15,200 FAL rifles in 1965-1966. R1 production finally was terminated during FY78-79.

Although Lyttleton Engineering Works undertakes much of the manufacturing process, Vektor is actually the prime contractor for most Denel small arms.

R4/R5/R6

The South Africans replaced the R1 with the 5.56x45mm NATO (.223 Remington) R4, also known as the Vektor (named after the component of Denel that has overall responsibility for the program). In the early 1980s, the South Africans secured a license to produce a slightly modified Galil as the R4. This weapon has replaced the R1 in frontline units, although large stocks of R1 rifles remain in reserve units and storage depots.

The R5 Vektor is a carbine variant of the R4, featuring a shorter barrel. The R6 is a compact version of the R4 for airborne and vehicle-mounted troops. With the butt folded, the R6 is 56.5 centimeters (22.24 in) in length. Denel also produces semi-automatic versions of the R4 and R5, known as the LM4 and LM5, primarily for export. The R4, R5, and R6 remain in production.

Next-Generation CR21

In 1997, Vektor unveiled its next-generation battle carbine, the CR21. This 5.56x45mm NATO (.223 Remington) weapon is essentially a modernized version of the R4 in a bullpup configuration. In fact, the CR21 program developed as a conversion program for existing R4 weapons, as well as a new-production program. It appears likely that the South African National Defence Force will opt for the conversion of existing R4 battle carbines as they become due for refurbishment.

Denel is also developing a shortened version of the CR21 for South African internal security forces. This variant is approximately 10 centimeters (3.94 in) shorter than the standard CR21. To date, Denel has reportedly manufactured the CR21 in preproduction quantities only.

NTW 20/14.5

Pretoria Metal Pressings (another component of Denel) has acquired the rights to Aerotek's anti-materiel rifle through Denel's acquisition and later sale of Mechem,

the firm holding Aerotek's original rights to the weapon. The NTW 20 is unique in its 20x82mm MG151 chambering, making it one of the few infantry weapons of its type in the world firing such a potent round. The bolt-action NTW 20 features a high-efficiency muzzle brake and a combined hydropneumatic recoil-absorbing component. The NTW 20 comes equipped with a telescopic sight and a special backpack for manpacked transport.

In 1997, PMP introduced the NTW 14.5, which fires the Russian 14.5x114mm cartridge from the same action as the NTW 20. Another weapon, the NTW 20/14.5, is capable of firing either cartridge by changing the barrel, bolt, magazine, and sight with mount; the process reportedly takes around half a minute.

The NTW is in serial production.

ASIA

India

Ordnance Factories Organization of India. In 1963, the Indian Army adopted the Fabrique Nationale 7.62x51mm NATO (.308 Winchester) FAL in the British L1A1 configuration to replace its existing 7.7x56mm (.303-cal) Lee-Enfield bolt-action rifles. Indian Ordnance continues to produce the FAL L1A1, which is still the standard Indian shoulder arm, on an as-needed basis for the Indian Army.

Near-Term Solutions?

To offset the delay in the Indian Small Arms System program (see discussion on INSAS that follows), the Indian Army ordered 100,000 AK-47 battle carbines from Bulgaria in 1995 as a stopgap measure. When that procurement contract fell through, the Indian Army purchased 100,000 AK-47s from Romania later in 1995, at a unit price of \$88.

In 2002, the Indian Army awarded the small arms division of Israel Military Industries Ltd (IMI) a contract worth \$20 million to supply the Indian Army Special Forces with 3,074 TAR-21 models of the 5.56x45mm NATO (.223 Remington) Tavor-21 battle carbine. The contract included 40mm grenade launchers for the weapons and ammunition. However, technical problems with the grenade launchers and the corporate restructuring of IMI delayed deliveries well beyond the scheduled due date of September 2005.

As an interim measure, IMI's small arms division (and its successor, Israel Weapon Industries Ltd) supplied weapons under the following separate contracts:

- A \$1.5 million contract to provide 300-400 TAR-21 battle carbines (without the grenade launcher) to India's Special Frontier Force.

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- A \$1.4 million contract to provide about 130 Galil 7.62x51mm NATO (.308 Winchester) sniper rifles and 450,000 rounds of ammunition to the SFF and Indian Army Special Forces.

INSAS: "Operationally Troublesome"

In the early 1980s, India began development of an indigenous family of infantry weapons, all chambered for the 5.56x45mm NATO (.223 Remington) cartridge. In 1988, troop trials began with the Indian Small Arms System, which included a rifle, carbine, and light machine gun designed by India's Armament Research & Development Establishment.

Deliveries of the new weapons began in 1990, with over 200,000 weapons in service by 2003. However, a number of operating problems (especially in cold weather) plagued the weapons, prompting the Indian Army to consider procuring an additional lot of 100,000 AK-47 battle carbines.

Despite production cut-ins to correct the weapon's faults, problems remained widespread. By 2011, the Indian Army had finally put the INSAS program out of its misery. In the announcement of the program cancellation, the Indian Army referred to the INSAS as "operationally troublesome."

Looking to Foreign Sources Again

In the aftermath of the INSAS debacle, the Indian Army conducted trials on several foreign small arms for importation and licensed production.

In August 2012, the Indian Army commenced trials of four 5.56x45mm NATO (.223 Remington) carbines to meet its close quarter battle (CQB) carbine requirement. The following competitors are undergoing trials:

- Beretta ARX-160
- Colt M4
- IWI Galil Ace 21
- SIG Sauer SIG-516 CQB

The Indian Army CQB carbine requirement specifies the procurement of 44,618 carbines and 33.6 million rounds of ammunition. The weapons procured through this \$363 million contract will replace the 9x19mm Sterling 1A1 submachine guns currently in service.

The winning contractor will be required to sign an exclusive technology-transfer agreement with India's Ordnance Factory Board (OFB) for the local production of up to 400,000 additional carbines.

Concurrent with the CQB carbine trials, the Indian Army has been conducting technical evaluations of five 5.56x45mm NATO (.223 Remington) battle carbines to

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replace the ill-fated INSAS rifle. This evaluation currently features the following weapons:

- Beretta ARX-160
- Colt Combat Rifle (an M16A1 variant specifically adapted for the Indian requirement)
- CZ 805 Bren
- IWI Ace 1
- SIG Sauer SG-551

The initial Indian Army requirement specifies the procurement of 66,000 battle carbines in a contract worth \$300 million. Each competing design must be capable of converting from 5.56x45mm NATO (.223 Remington) to the Russian 7.62x39mm M43 round by switching the barrel and magazine. Each weapon must also be able to mount an under-barrel grenade launcher.

The total requirement is for 218,320 battle carbines. OFB intends to produce 152,320 locally under the same type of exclusive technology-transfer agreement used to meet the CQB carbine requirement.

Pakistan

Pakistan Ordnance Factories. The Pakistanis initially established this organization in the early 1950s, with assistance from Britain's Royal Ordnance organization, to produce 7.7x56mm (.303-cal) ammunition and some parts for the Enfield rifles that the Pakistanis inherited upon independence.

Licensed H&K Products

In the mid-1960s, Pakistan Ordnance Factories secured a license to produce Heckler & Koch 7.62x51mm NATO (.308 Winchester) G3 rifles and 9mm Parabellum MP5A2 submachine guns. These weapons would replace the over 190,000 U.S. small arms (mostly M1 Garand rifles) supplied by the U.S. Department of Defense from the late 1950s through 1965. The Pakistanis have produced both the G3 and the MP5A2 in substantial quantities; the G3 (in the A3 and A4 models) remains the standard weapon of the Pakistani Army. Production continues; some exported Pakistani G3 rifles have turned up in Bangladesh.

Pakistan supplemented its G3 with purchases of Chinese AK-47 copies during times of Pakistani mobilization.

NATO-Standard 5.56mm Adopted

In 1987, the Pakistan Ministry of Defense announced that Pakistan would adopt a 5.56x45mm NATO (.223 Remington) weapon as its next standard infantry shoulder arm. Although Pakistan still has not selected a weapon for this requirement, competition remains keen.

Bidders for the contract reportedly include Colt, Steyr-Mannlicher, Singapore Technologies Kinetics, and Heckler & Koch. Pakistan Ordnance Factories will almost certainly license-produce the weapon and its chosen ammunition. However, this program has yet to move forward; the G3 remains in production.

In 1987, the Pakistan Ministry of Defense awarded Steyr-Mannlicher a contract for an unspecified quantity of AUG battle carbines for the Pakistani Special Forces. This marked Pakistan's first purchase of a 5.56x45mm NATO (.223 Remington) weapon.

People's Republic of China

China North Industries Corp (NORINCO). The PRC Ministry of Ordnance Industry exercises control over the (at least) 15 facilities engaged in military small arms production under the auspices of China North Industries Corp. The People's Republic of China is a major source for small arms, especially on a regional basis.

For decades, the Chinese have produced copies of the standard Soviet weapons. For the outside observer, Chinese designations can be quite confusing, as China has tended to produce several different weapons sharing the same designation. Thus, the Simonov SKS carbine and the Kalashnikov AK-47 both share the Chinese designation Type 56, with the AK-47 Type 56 having two variants: the Type 56-1 and Type 56-2.

Type 56: China's SKS

The Chinese have long produced this copy of the Russian Simonov 7.62x39mm SKS carbine as the Chinese standard infantry shoulder weapon. Although no longer the standard military weapon, the Type 56 SKS remains in production for new orders. NORINCO has, in fact, found a substantial niche market for the inexpensive (less than \$300) Type 56 SKS in the United States among recreational shooting enthusiasts.

China's AK Series

The Chinese have produced the enormously popular AK-47/Type 56, both in its basic form and in versions incorporating features of the newer AKM. The Type 56-1 features a conventional AK-design folding tubular-metal stock, while the Type 56-2 features a sideways-folding stock. The latest version of the weapon, the Type 56C, features synthetic (plastic) furniture. The Type 56C also integrates several features of the AK-74, including a side-folding buttstock assembly, a new-design flash suppressor, and new sights. The Type 56S is a semi-automatic version, produced primarily for export. The Type 56C and 56S represent the current Chinese production standards for this design.

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The Type 22 is a "sanitized" version of the Type 56, distinguished by having no markings at all; this weapon has turned up in various areas of the world, often with terrorist or insurgent organizations.

The Chinese have also developed a version of the AK-47/Type 56 chambered for the 5.56x45mm NATO (.223 Remington) cartridge. This variant, the Type 84, is available in five versions, differing in the furniture and barrel length. Unconfirmed reports indicate the Chinese may also be developing a 7.62x51mm NATO (.308 Winchester) variant. As the Russian IZHMAH facility is currently marketing a semi-automatic variant of the AK action in the 7.62x51mm NATO version (under the Saiga line), a Chinese variant is hardly a surprise. More recently, the Chinese have produced a copy of the Russian 5.45x39mm AK-74 in limited numbers, as the Type 88.

Type 68/Type 81

The Type 68 represents an indigenous Chinese integration of Simonov SKS and Kalashnikov AK designs. Chambered for the standard Russian 7.62x39mm M1943 cartridge of its progenitors, the Type 68 features a 15-round box magazine and a two-position gas regulator. A further development of the Type 68, the 7.62x39mm Type 81 (along with its light machine gun variant), is available either with a conventional buttstock or with a side-folding buttstock assembly (the Type 81-1). Although the Chinese developed both the Type 68 and Type 81 specifically for the export market, they have yet to see any significant export sales.

Type 95/Type 97

One of the latest military small arms designs coming out of the People's Republic of China is the Type 95, which is also known as the QBZ Type 95 or the Type 95 Modular Weapon System. The bullpup-pattern Type 95 is apparently available in several versions, as follows:

- The standard battle carbine
- A sniper rifle with a telescope and bipod
- A short carbine
- A light support weapon

All Type 95 variants fire a new Chinese 5.8x42mm cartridge. In 1997, the Type 95 made its first appearance in Hong Kong; the Chinese have revealed little information since.

Although NORINCO has not released technical data regarding this family of weapons, some details have trickled out. The Type 95 features composite material construction, with a three-position selector; the cocking

lever is located under the carry handle. The Type 95 uses a 30-round detachable magazine (with other capacities available); it can also mount a 40mm grenade launcher. The Type 95 is reportedly in limited serial production for domestic use. An export version, the Type 97, fires the 5.56x45mm NATO (.223 Remington) cartridge. To date, there have been no reported export sales of the Type 97.

Type CQ: China's M16A1

In the 1980s, the Chinese began to develop this copy of the U.S. 5.56x45mm NATO (.223 Remington) M16A1 for export. The Chinese have produced the Type CQ in limited quantities for export only. No customer information is available; several of these weapons have surfaced in the hands of the insurgents in Afghanistan.

Despite the reportedly lackluster sales of Chinese small arms on the international market thus far, one cannot ignore the enormous production and sales potential of the Chinese small arms industry.

Republic of Korea

Throughout the 1950s, 1960s, and 1970s, the standard infantry shoulder arms of the ROK Army were the M1 and M14 rifles, the M1 carbine (favored by the Koreans for its light weight and compact size), and the M16. The United States provided large numbers of these weapons under several grant aid programs through 1972, transferring approximately 469,000 weapons.

Licensing Begets New Design

In June 1969, the United States government agreed in principle to establish an M16 weapon plant in the Republic of Korea and to provide Foreign Military Sales credits to support production equipment, raw materials, technical assistance, construction, royalty fees, and training. The U.S. Department of Defense selected Colt Industries to implement the license program as part of the U.S. effort to help develop the country's defense industrial base.

In March 1971, the governments of the United States and the Republic of Korea signed the M16 coproduction Memorandum of Understanding, which specified a classified total quantity of weapons authorized for production, including both complete weapons and spare parts. This document also authorized \$42 million in FMS credits, about half the total projected cost. It also prohibited the Republic of Korea from transferring complete weapons or components to a third country without U.S. permission. Only mutual consent by the two parties could terminate the MoU.

S&T Motiv Co Ltd. By 1982, the ROK Ministry of Defense had transferred ownership of the M16 plant to Daewoo Precision Industries, a private concern; the

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Korean government also transferred ownership of the 5.56mm ammunition plant to Poongsan Metals Ltd (which now operates as Poongsan Defense). In 1983, Colt and the ROK Ministry of Defense each separately declared the production license terminated in a dispute over royalty payments.

Daewoo, however, apparently continued producing the M16 until late 1986. The United States regarded this as a violation of the original MoU, along with a confirmed unauthorized export sale in 1983. Subsequently, Daewoo significantly modified the M16 design to the point that the new weapon, the K2, has little in common with the original M16.

K2

Although the K2 appears similar to the M16 (especially the lower receiver), the weapon's components are not interchangeable with the M16. This battle carbine features a Kalashnikov-style long-stroke piston acting on a rotating bolt. In addition to acting as a safety, the selector switch offers single-shot, three-round-burst, and automatic fire modes.

K1A1 Carbine

This weapon, often referred to as a submachine gun, actually fits the description of a selective-fire carbine, similar to the old U.S. M2 carbine. Unlike the long-stroke piston operating system of the K2, the K1A1 features the direct gas impingement system of the M16 design.

Both the K2 and K1A1 are currently in serial production.

Republic of Singapore

Singapore Technologies Kinetics Ltd. Determined to achieve greater autonomy, the Singapore Ministry of Defense founded Chartered Firearms Industries, a subsidiary of Singapore Technologies Kinetics (formerly Chartered Industries of Singapore), in 1967 to manufacture 5.56x45mm NATO (.223 Remington) ammunition and to produce the M16 battle carbine and M203 40mm grenade launcher under license from Colt.

Coproduction and full licensed-production of 200,000 M16s occurred between March 1971 and March 1977. The M16 replaced the FN-produced 7.62x51mm NATO (.308 Winchester) FAL in Singapore Army service.

SAR 80

From experience gained in the production of the M16, Chartered Firearms Industries won a contract from the Singapore Army to develop a more cost-effective shoulder arm. The Singapore Army selected Sterling Armament of the United Kingdom as design contractor, with Frank Waters of Sterling Armament actually

designing the SAR 80 in 1976. Chartered Firearms Industries completed the prototypes in 1978; CFI began serial production in 1980. In addition to the Singapore Army procurement, Thailand purchased 10,000 SAR 80 weapons.

SR 88/SR 88A

In the late 1980s, Chartered Firearms Industries announced the development of a successor to the SAR 80, the SR 88. This 5.56x45mm NATO (.223 Remington) weapon, based on the SAR 80, reflected modern battle carbine design and use of composite materials; it was available in several configurations. CFI had offered the SR 88 on the export market but failed to secure any major sales.

The 5.56x45mm NATO (.223 Remington) SR 88A is the improved follow-on to the SR 88. CFI also offers a folding-stock version. The newer SR 88A is a technically advanced weapon, considered by many analysts to be among the best battle carbines in the world today. The SR 88A is no longer in production, but it remains available for new orders. CFI has sold this weapon to at least two undisclosed clients.

SAR 21

In the early 1990s, Chartered Firearms Industries began the development of a new weapon to replace the SAR 80 and SAR 88/SAR 88A. The resulting 5.56x45mm NATO (.223 Remington) SAR 21 is a bullpup design, generally similar to the Steyr-Mannlicher AUG. The SAR 21 is 80.5 centimeters (31.69 in) in length and weighs 3.82 kilograms (8.41 lb) empty. The weapon features an integral optical sight with a laser rangefinder; its mil-standard rail mount accepts a variety of other optical sighting systems. Singapore first publicly revealed the SAR 21 in 1999; the weapon is in serial production.

AUSTRALIA & NEW ZEALAND

Australia

Under the Australian Army's Land Force Sniper System program, Accuracy International won a contract in 1998 to supply a total of 166 sniper rifles chambered for the 7.62x51mm NATO (.308 Winchester) cartridge. These rifles replaced the 7.62x51mm NATO (.308 Winchester) Parker-Hale Model 82 sniper rifles that had been in Australian Army service since 1978. Along with the rifles, the Army procured a variety of associated equipment, including laser rangefinders, day and night sights, and spotting telescopes.

The Australian Army has yet to fill its requirement for 73 (originally 105) anti-materiel rifles chambered for the 12.7x99mm (.50-cal) cartridge. Renewed evaluations of the delayed program (the original

Military Rifles (International)

contenders failed to meet the specifications) are underway.

Thales Australia. On August 17, 1999, the Australian government announced that it had selected the joint venture team of Transfield and Thomson-CSF as the preferred purchaser of Australian Defence Industries, the multifaceted weapons organization set up and run by the Australian government. Through its Small Arms Factory (located in Lithgow, New South Wales), ADI has long been the supplier of small arms to the Australian military.

In October 2006, the Thales Group (Paris, France) acquired ADI Ltd, the prime Australian contractor for small arms. The contractor now operates as Thales Australia.

L1A1 SLR

Fabrique Nationale's 7.62x51mm NATO (.308 Winchester) FAL in the British L1A1 SLR configuration has long been Australia's standard shoulder weapon. ADI/Thales Australia has produced these weapons under license at its Lithgow facility. The Australian licensee has also produced a shorter, lighter variant in limited numbers. A heavy-barrel, selective-fire version, the L2A1, is also in production at Lithgow. Overall, the contractor continues to focus its FAL production on the export market.

F88 Austeyr

In January 1986, the Australian Army selected the Steyr-Mannlicher AUG to fill its requirement for a 5.56x45mm NATO (.223 Remington) battle carbine. Licensed production of the weapon, designated F88 Austeyr, is currently underway. The original Australian Army requirement called for 84,000 weapons; production for export (Indonesia, Papua New Guinea, and New Zealand to date) will considerably bolster the F88 Austeyr production forecast.

In 1999, ADI initiated a number of product improvements to the issue F88 Austeyr, resulting in a new model designation, the F88A1. Improvements include installation of a Picatinny Rail sight mount and addition of a Wildcat optical sight. Meanwhile, the Australian Army is investigating several night sight options for the F88A1. In addition, the Australian Army is procuring a total of 3,047 under-barrel grenade launchers; four F88 weapons mounting the grenade launcher will be organic to each infantry section.

MIDDLE EAST

Israel

Israel Weapon Industries Ltd (IWI). In 1967, the Israeli license-produced 7.62x51mm NATO

(.308 Winchester) FAL rifle became the standard infantry weapon of the Israel Defense Forces. The IDF later, in 1972, selected the indigenously produced 5.56x45mm NATO (.223 Remington) Galil as its standard shoulder weapon. The IDF has supplemented its Galil inventory with a massive procurement of M16 battle carbines.

Corporate Evolution

Following the corporate restructuring of Israel Military Industries Ltd, the prime contractor for Israeli small arms, the small arms division of IMI became a separate company, now operating as Israel Weapon Industries Ltd.

M16A1 Procurement

Purchases of the M16A1 from the United States started immediately after the 1973 war, predominantly through FMS channels. This procurement method allows the Israelis to purchase the weapons with funds from largely forgiven loans. From FY74 through FY79, the Israelis purchased 320,234 weapons, mostly the M16A1. These commercial sales by Colt included 30,000 weapons in 1977, 30,000 in 1978, and 15,000 in 1979. Serial production of the Galil effectively ended the M16A1 procurement program in 1979. The M16 remains a significant segment of the IDF small arms inventory.

Galil

In 1968, in the aftermath of the 1967 war, Lt. Gen. Uziel Gal began development of an indigenous 5.56x45mm NATO (.223 Remington) battle carbine. After competitive trials in 1971 revealed the Russian AK-47 to be superior to Gal's design, Gal then began development of an Israeli 5.56x45mm AK variant. The new weapon, based on the Valmet M62 with a modified M16 barrel and Stoner 63 magazine, entered production as the Galil in 1972. The Galil first saw combat in the 1973 Ramadan war. In 1981, IMI introduced a heavy-barrel variant chambered for the 7.62x51mm NATO (.308 Winchester) cartridge.

The Galil has enjoyed a moderate level of success on the international market, with sales to at least 16 other nations, including Bolivia (10,000 weapons in 1999), Botswana, Chile, Colombia, Costa Rica, Democratic Republic of the Congo, Estonia, Guatemala, Haiti, Honduras, Nepal (7.62x51mm version), Nicaragua, Philippines, Rwanda, Swaziland, and Trinidad and Tobago. Croatia produces the Galil under license, as does the Republic of South Africa, designating its models L4 and L5. To date, IMI/IWI has produced at least 600,000 Galil rifles and battle carbines.

Military Rifles (International)

Galil MAR Micro

IWI claims that this 5.56x45mm NATO (.223 Remington) Galil variant is the smallest and lightest military rifle in the world today. The MAR Micro is essentially the Galil receiver with a 19.5 centimeter (7.78-in) barrel and folding stock. The Galil MAR Micro is currently in serial production.

Mk 1 Marksman's Rifle

One specialized version of the Galil is the 5.56x45mm NATO (.223 Remington) Mk 1 marksman's rifle, featuring an adjustable bipod and an optical sight.

Chambered for the 7.62x51mm NATO (.308 Winchester) cartridge, this high-accuracy version of the Galil is optimized for match-grade ammunition. The Galil sniper rifle features a heavy barrel with flash suppressor, a Nimrod optical sight with mount, a two-stage trigger mechanism, and a bipod. The contractor produces the Galil sniper rifle on an as-needed basis.

SR-99

The SR-99 is the 5.56x45mm NATO (.223 Remington) variant of the earlier Galil sniper rifle. Optimized for match-grade ammunition, the SR-99 features specialized furniture, a bipod, and a specially designed long barrel. The SR-99 can mount a Nimrod or other specialized optical sight. The contractor produces the SR-99 upon request.

MAGCAL

The contractor refers to the MAGCAL, introduced in 1999, as a "carbine rifle." The MAGCAL fires an improved version of the long-used 7.62x33mm (.30 carbine) round. IMI developed the MAGCAL specifically for employment in urban environments, with input from Israeli police and internal security agencies. Based on the reliable Galil design, the compact MAGCAL design features a folding stock. The overall length is 73.5 centimeters (28.93 in); the weapon is 48.5 centimeters (19.09 in) long with the stock retracted. The MAGCAL can mount an M203 40mm grenade launcher, as well as a variety of sights. The MAGCAL is in serial production for specialized Israeli military and internal security units.

Tavor Family

In 1991, IMI began developing a new military small arms family in a bullpup design. Originally designated AAR90, the 5.56x45mm NATO (.223 Remington) Tavor is a gas-operated weapon with a rotating bolt. Following extensive testing, the IDF type-classified the Tavor in 2002. The IDF intends to rearm with the Tavor; serial production is currently in progress.

With a 30-round magazine, the standard TAR-21 version of the Tavor weighs 3.6 kilograms (7.92 lb). The TAR-21 has a 46-centimeter (18.11-in) barrel; it mounts an integral reflex sight. The STAR-21 (Sharpshooting Tavor assault rifle) features a longer barrel and bipod. The CTAR-21 (Commando Tavor assault rifle) has a shorter 38-centimeter (14.96-in) barrel. The MTAR-21 (Micro Tavor assault rifle), with a 25-centimeter (9.84-in) barrel, is the most compact member of the Tavor family.

Tavor Exports

In 2000, reports indicated Croatia was evaluating at least two versions of the Tavor.

In 2002, the Indian Army awarded IMI a contract worth \$20 million to supply the Indian Army Special Forces with 3,074 TAR-21 battle carbines. The contract included provision of 40mm grenade launchers for the weapons and ammunition. However, technical problems with the grenade launchers and the corporate restructuring of IMI delayed deliveries well beyond the original September 2005 due date.

In the interim, the contractor has supplied India with weapons under separate contracts, as follows:

- A \$1.5 million contract to provide 300-400 TAR-21 battle carbines (without the grenade launcher) to India's Special Frontier Force
- A \$1.4 million contract to provide about 130 Galil 7.62x51mm NATO (.308 Winchester) sniper rifles and 450,000 rounds of ammunition to the SFF and Indian Army Special Forces

NORTH AMERICA

Canada

The Canadian government originally established the Long Branch Arsenal (under the auspices of Canadian Arsenals Ltd) to produce the Lee-Enfield Number 4 rifle for Canadian service in the First World War. By the end of World War II, Long Branch had produced approximately 962,000 Lee-Enfield Number 4 rifles.

First to Adopt the FAL

In January 1954, Canada became the first country to officially adopt the Fabrique Nationale 7.62x51mm NATO (.308 Winchester) FAL as its standard service rifle. That June, Canada secured production rights from Fabrique Nationale and began conversion of FAL specifications from metric to imperial measurement standards.

In May 1955, the Rifle Steering Committee, comprising Canadian, Australian, and British representatives, convened to standardize a new Commonwealth rifle.

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Canadian Arsenals Ltd served as the committee's design authority. Following the committee's approval of the Canadian FAL design, Canadian Arsenals commenced serial production of the FAL, designated C1. In October 1956, the Canadian Forces began issuing the first C1 rifles. Subsequent design changes led to the C1A1 in 1959.

The Canadians issued their FAL in three configurations:

- The C1A1 semi-automatic rifle
- The C1A1D selective-fire rifle for the Maritime Command
- The C2/C2A1 selective-fire heavy-barrel model as a light support weapon

Canadian Arsenals terminated serial production of the FAL series in June 1976.

Colt Canada Corp. In response to NATO's adoption of the 5.56x45mm (.223 Remington) round in the early 1980s, the Canadian Forces adopted the U.S. M16A2 battle carbine as their future infantry weapon, designated C7. The Canadians also adopted the shorter M16A2 carbine, featuring a 36.8-centimeter (14.5-in) barrel and telescoping buttstock assembly, as the C8. In 1984, Diemaco Inc of Kitchener, Ontario, won the contract for licensed production of 79,935 C7 and 1,565 C8 battle carbines. Diemaco commenced delivery of the weapons in 1986; regular Canadian troops received their full issue of C7 and C8 weapons by 1988.

The C7A1 is an improved version of the C7; an optical sight and mounting rail replace the carry handle/rear sight assembly. The Canadians issue the C7A1 along with the standard C7. The C10 is the training version, chambered for the low-cost 5.66x15.11mm (.22 Long Rifle) cartridge.

Diemaco's export sales of the C7 series have included 52,285 C7A1 battle carbines and C7A1 light support weapons produced under a 1994 contract with the Netherlands worth \$63.4 million. Diemaco delivered the weapons from 1995 to 1998. In June 1995, Denmark ordered 2,572 C7A1 battle carbines, with a follow-on order for 5,000 weapons in January 1996. Diemaco completed deliveries in January 1997.

From Licensee to Subsidiary

On May 20, 2005, Colt Defense LLC (West Hartford, Connecticut) announced the completion of its acquisition of Diemaco Inc, Colt's primary foreign licensee. Diemaco now operates as Colt Canada Corp, a wholly owned subsidiary of Colt Defense.

SAR Technician Rifle

In 1993, the Canadian Forces awarded Diemaco a contract to convert the Ruger M77 Mk II bolt-action rifle into a customized survival rifle for Royal Canadian Air Force (RCAF) search and rescue personnel. The Search and Rescue Technician Rifle, chambered for the 7.62x63mm (.30-06 Springfield) cartridge, carries the following features:

- An orange McMillan synthetic (reinforced fiberglass) folding stock
- A shortened barrel
- Folding sights
- A new-design trigger guard that allows the SAR technician to fire the rifle while wearing mittens

According to the contractor, the RCAF purchased 350 search and rescue technician rifles, of which at least 330 remain in active service. Colt Canada Corp produces the rifle for the RCAF on an as-needed basis.

CENTRAL & SOUTH AMERICA

Brazil

Brazilian industrialists have long been keen on developing and producing low-cost, modern military small arms for the international market. Despite the Brazilian government's apparent reluctance to initiate procurement for its own requirements, the Brazilian small arms industry has the potential to produce advanced-technology small arms of all types at competitive prices.

Emphasis on Export Sales

In the early to mid-1980s, Brazil reported an annual production rate of 477,960 civilian and military small arms, of which 155,380 were rifles and carbines. Much of this production was for sales in conjunction with the sale of Brazilian armored vehicles. However, the collapse of the prime Brazilian armored vehicle producer (Engenheiros Especializados) precipitated a corresponding decline in Brazilian small arms production and export.

Industria de Material Belico do Brazil (IMBEL). This firm has emerged as the primary supplier of military small arms to the Brazilian armed forces; about 60 percent of the firm's business is with the Brazilian Army.

FAL/SAL

IMBEL's license-produced 7.62x51mm NATO (.308 Winchester) FAL rifle has long been the standard shoulder arm of the Brazilian Army. IMBEL produces both selective-fire and semi-automatic (the SAL) versions of the FAL. Total production of FAL/SAL rifles to date exceeds 216,000 weapons. Production

Military Rifles (International)

continues on an as-needed basis. In 1999, Venezuela awarded IMBEL a contract worth \$20 million to modernize its FAL rifle inventory; IMBEL completed the work in 2001.

MD2/MD3

In the late 1980s, IMBEL teamed with Laboratorio de Pesquisa de Armamento Automatico to develop a 5.56x45mm NATO (.223 Remington) battle carbine in response to a Brazilian Army requirement for a weapon to replace the FAL. From an initial concept by Olympio Vieira de Mello, IMBEL worked from the base technology of its license-produced FAL rifle.

The resulting weapons, designated Fusil M97 MD2 (folding stock) and MD3 (fixed stock), are scaled-down versions of the original 7.62mm FAL; the FAL/SAL and M97 weapons share a significant number of common parts. The MD2A1 is a training variant, chambered for the 5.66x15.11Rmm (.22 Long Rifle) cartridge. IMBEL is engaged in serial production of the MD2 and MD3 for domestic requirements.

Model L/LC

IMBEL is also developing product-improved models of the 5.56x45mm NATO (.223 Remington) MD2 and MD3. The improved Model L (rifle) and Model LC (carbine) are lighter weapons, reflecting the contractor's employment of improved manufacturing processes and materials. Models L and LC are undergoing final development for possible procurement by the Brazilian Army.

Analysis. In general, small arms design and development by countries beyond the United States and Europe have tended to follow a rather simple linear progression. Importation of U.S. or European weapons leads to licensed production of those weapons, which in turn serves to establish the technical capability (manufacturing infrastructure and skilled personnel) for indigenous development and production.

Following NATO Trends

Given the dynamics of this progression, it comes as no surprise that the international small arms producers are careful to identify, and then follow, the prevalent trends in U.S. and European small arms development. Witness the widespread adoption of NATO-standard ammunition in new designs worldwide.

However, the establishment of an indigenous capability does not ensure the success of an indigenous small arms program, as is clearly demonstrated by the INSAS program. While indigenous production capability has freed many players in the international small arms market from total dependence on outside sources, the fact remains that licensed production and outright purchase of U.S., European, or Russian-made small arms will remain a necessity for many international small arms players.

Emerging Players

Despite the domination of U.S. and European firms over the international small arms market, some non-U.S. and non-European players are capable of making a real impact on the market. Israel Weapon Industries Ltd is positioned to make significant inroads into the international market with its innovative Tavor and MAGCAL designs. Similarly, Singapore Technologies Kinetics, with its SR 88A and SAR 21 designs, has the potential to capture a significant share of its regional Southeast Asian market.

To a somewhat lesser extent, weapons such as the Denel CR21 and Thales Australia F88 Austeyr clearly have the potential to make their presence felt on the international market. The People's Republic of China possesses a massive production capacity. However, despite NORINCO's aggressive marketing strategy, its small arms have yet to capture a significant share of the international market.

Different Priorities

The international small arms players, for the most part, differ from their U.S. and European counterparts in one significant respect: in the international small arms market, we do not witness the veritable free-for-all that currently characterizes the European small arms market. For most of the non-U.S. and non-European players, supplying their host governments is their first priority, with export sales being only a secondary objective.

As long as this production and marketing mindset continues, the various smaller international players will be, to a certain extent, insulated from the Darwinian "survival of the fittest" mentality of the European market. As we have seen in the cases of IWI and Singapore Technologies Kinetics, this insulation can give some players a chance to grow into serious players in the international market.

Military Rifles (International)



IMI 5.56x45mm NATO (.223 Remington) Tavor TAR-21 Battle Carbine

Source: Israel Weapon Industries Ltd

Funding

The various contractors, some of which are government-owned enterprises or state-owned arsenals, fund the development of military shoulder weapons on an international basis.

Contracts/Orders & Options

Contract information is generally not available.

Timetable

As several organizations are integrating advanced materials technology with their weapons designs, we expect a number of completely new designs to emerge on the international market in the mid- to long-term timeframe. Further, a number of states will be embarking on new small arms procurement programs within the next 10 years.

Worldwide Distribution/Inventories

Export Potential. Most non-U.S. and non-European small arms manufacturers produce their weapons primarily for domestic procurement. While European military rifle and battle carbine designs continue to dominate the international market, firms such as Israel Weapon Industries and Singapore Technologies Kinetics are emerging as major players in their own right.

Countries. Because most contracts go unreported and much of the production is of types already in widespread use worldwide, it is virtually impossible to determine the precise distribution of the military rifles discussed in this report.

Illegal Arms Trade. The People's Republic of China and, to a somewhat lesser extent, the Democratic People's Republic of Korea continue to be major sources of illicit weapons throughout East Asia. Cambodia, Hong Kong, Myanmar, the Republic of China (Taiwan), and Thailand serve as major conduits for the transfer of illegal arms throughout the region. In South Central Asia, Pakistan remains a virtual arms bazaar for those trafficking illicit arms; Myanmar continues to act as the prime conduit for Pakistani arms.

Legality and morality aside, the growth of the illegal arms trade has a very real impact on the international small arms market, as legitimate small arms producers must compete with the cheaper, more readily available small arms of illegal arms traffickers.

Military Rifles (International)

Forecast Rationale

For the various non-U.S. and non-European military rifle and carbine manufacturers, the general emphasis on domestic production will protect most of the growing segment of minor international players from the sort of multinational consolidation that increasingly characterizes the European market.

In Europe's Shadow

In the meantime, European small arms designs continue to drive the international market. Established European players, such as FN Herstal, Heckler & Koch, and IZHMASH, represent the cutting edge of military rifle and carbine development. Non-U.S. and non-European manufacturers continue to follow the lead of these established players.

INSAS a Tough Lesson for India

The small arms situation in India clearly illustrates the problem of living in the shadow of European players.

In the aftermath of the Indian Small Arms System (INSAS) debacle, the Indian Army is conducting trials on several foreign small arms for importation and licensed production.

Though Indian Army small arms requirements demand technology-transfer agreements for local production, the fact remains that India has apparently given up on indigenous small arms designs.

Dynamic Market

European military rifle and battle carbine designs continue to dominate the international market, but firms such as Israel Weapon Industries (IWI) and Singapore Technologies Kinetics are emerging as major players in their own right.

We expect the combined output of non-U.S. and non-European manufacturers will average 97,000 weapons per year.

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