

APPENDIX A

PRIMARY SNIPER WEAPONS OF THE WORLD

Several countries have developed sniper weapon systems comparable to the United States systems. These weapon systems are sold to or copied by countries throughout the world. Within the everchanging world of politics, it is impossible to predict how the future enemy may be armed. The designs and capabilities of these weapon systems are similar. However, the amount of training and experience separates the sniper the marksman. This appendix describes the characteristics and capabilities of prevalent sniper weapon systems.

A-1. AUSTRIA

The Austrian Scharfschützengewehr 69 (SSG-69) is the current sniper weapon of the Austrian Army and several foreign military forces. It is available in either 7.62-mm x 51 or the .243 Winchester calibers. The SSG-69 is a manually bolt-operated, 5-round rotary or 10-round box, magazine-fed, single-shot repeating rifle. Recognizable features are synthetic stock hammer-forged, heavy barrel with a taper; two-stage trigger, adjustable for length and weight of pull; and a machined, longitudinal rib on top of the receiver that accepts all types of mounts. The sighting system consists of the Kahles ZF69 6-power telescope iron sights are permanently affixed to the rifle for emergency use. The telescope comes equipped with an internal bullet-drop compensator graduated to 800 meters, and a reticle that consists of an inverted V with broken cross hairs. The weapon, magazine, and telescope together weigh 10.14 pounds. This weapon has a barrel length of 25.59 inches and a total length of 44.88 inches with a muzzle velocity of 2,819 feet per second. It has an accuracy of 15.75 inches at 800 meters using RWS Match rounds.

A-2. BELGIUM

The Model 30-11 sniping FN rifle is the current sniper rifle of the Belgian and other armies. This weapon is a 7.62-mm x 51, 5-round internal or 10-round detachable box, magazine-fed, manually bolt-operated rifle with a Mauser-action heavy barrel and, through the use of butt-spacer plates, an adjustable stock. Its sighting system is the FN 4-power, 28-mm telescope and aperture sights with 1/6 MOA adjustment capability. The rifle weighs 10.69 pounds and, with its 19.76-inch barrel, is a total of 43.97 inches long. The Model 30-11 has a muzzle velocity of 2,819 fps. Accessories include the biped of the MAG machine gun, butt-spacer plates, sling, and carrying case.

A-3. THE FORMER CZECHOSLOVAKIA

The current sniper weapon system is the VZ54 sniper rifle. It is a manually bolt-operated, 10-round box, magazine-fed 7.62-mm x 54 rimmed weapon and built upon bolt-action with a free-floating barrel. This weapon is similar to the M1891/30 sniping rifle (former Russian weapon)-only shorter and lighter. The rifle is 45.19 inches long and weighs 9.02 pounds with the telescope. It has a muzzle velocity of 2,659 fps with a maximum effective range of 1,000 meters.

A-4. FINLAND

Finnish weapon technology introduces a 7.62-mm x 51 sniper rifle that is equipped with an integral barrel/silencer assembly. It is a bolt-action, 5-round box, magazine-fed weapon with a nonreflective plastic stock and a standard adjustable biped. Through the use of adaptors, any telescopic or electro-optical sight may be mounted. The weapon is not equipped with metallic sights. The 7.62-mm Vaime SSR-1 (silenced sniper rifle) weighs 9.03 pounds and is 46.45 inches long.

A-5. FRANCE

French sniper weapons consist of the FR-F1 and FR-F2.

a. **FR-F1.** The FR-F1 sniping rifle, known as the Tireur d'Elite, is a manually bolt-operated, 10-round detachable box, magazine-fed, 7.62-mm x 51 or 7.5-mm x 54 weapon. The length of the stock may be adjusted with the butt-spacer plates. This weapon's sighting system consists of the Model 53 bis 4-power telescopic sight and integral metallic sights with luminous spots for night firing. It weighs 11.9 pounds, has a barrel length of 21.7 inches, and a total length of 44.8 inches. This weapon has a muzzle velocity of 2,794 fps and a maximum effective range of 800 meters.

Standard equipment features a permanently affixed biped whose legs may be folded forward into recesses in the fore-end of the weapon.

b. **FR-F2.** The FR-F2 sniping rifle is an updated version of the F1. Dimensions and operating characteristics remain unchanged; however, functional improvements have been made. A heavy-duty biped has been mounted more toward the butt-end of the rifle, adding ease of adjustment for the firer. Also, the major change is the addition of a thick, plastic thermal sleeve around and along the length of the barrel. This addition eliminates or reduces barrel mirage and heat signature. It is also chambered for 7.62-mm x 51 NATO ammunition.

A-6. GERMANY

The FRG has three weapons designed mainly for sniping the Model SP66 Mauser, WA 2000 Walther, and Heckler and Koch PSG-1.

a. **Model SP66 Mauser.** The SP66 is not only used by the Germans but also by about 12 other countries. This weapon is a heavy-barreled, manually bolt-operated weapon built upon a Mauser short-action. Its 26.8-inch barrel, completely adjustable thumbhole-type stock, and optical telescopic sight provide a good-quality target rifle. The weapon has a 3-round internal magazine fitted for 7.62-mm x 51 ammunition and a Zeiss-Diavari ZA 1.5-6-variable power x 42-mm zoom telescopic sight. The muzzle of the weapon is equipped with a flash suppressor and muzzle brake.

b. **WA 2000 Walther.** The WA 2000 is built specifically for sniping. The entire weapon is built around the 25.6-inch barrel; it is 35.6 inches long. This uniquely designed weapon is chambered for .300 Winchester Magnum, but it can be equipped to accommodate 7.62-mm x 51 NATO or 7.5-mm x 55 Swiss calibers. It is a gas-operated, 6-round box, magazine-fed weapon, and it weighs 18.3 pounds. The weapon's trigger is a single- or two-staged type, and its optics consist of a 2.5-10-variable power x 56-mm telescope. It has range settings of 100 to 600 meters and can be dismantled and mounted without loss of zero.

c. **Heckler and Koch PSG-1.** The PSG-1 is a gas-operated, 5- or 20-round, magazine-fed, semiautomatic weapon and is 47.5-inches long with a 25.6-inch barrel and has a fully adjustable, pistol-grip-style stock. Optics consist of a 6-power x 42-mm telescopic sight with six settings for range from 100 to 600 meters. The 7.62-mm x 51 PSG-1 weighs 20.7 pounds with tripod and when fully loaded. The muzzle velocity is 2,558 to 2,624 fps.

A-7. ISRAEL

The Israelis copied the basic operational characteristics and configuration of the 7.62-mm Galil assault rifle and developed a weapon to meet the demands of sniping. The 7.62-mm x 51 Galil sniping rifle is a semiautomatic, gas-operated, 20-round bolt magazine-fed weapon. Like most service rifles modified for sniper use, the weapon is equipped with a heavier barrel fitted with a flash suppressor it can be equipped with a silencer that fires subsonic ammunition. The weapon features a pistol-grip-style stock, a fully adjustable cheekpiece, a rubber recoil pad, a two-stage trigger, and an adjustable biped mounted to the rear of the fore-end of the rifle. Its sighting system consists of a side-mounted 6-power x 40-mm telescope and fixed metallic sights. The weapon is 43.89-inches long with a 20-inch barrel without a flash suppressor and weighs 17.64 pounds with a biped, sling, telescope, and loaded magazine. When firing FN Match ammunition, the weapon has a muzzle velocity of 2,672 fps; when firing M18 special ball ammunition, it has a muzzle velocity of 2,557 fps.

A-8. ITALY

The Italian sniper rifle is the Berretta rifle. This rifle is a manually bolt-operated, 5-round box, magazine-fed weapon, and fires the 7.62-mm x 51 NATO rounds. Its 45.9-inch length consists of a 23-inch heavy, free-floated barrel, a wooden thumbhole-type stock with a rubber recoil pad, and an adjustable cheekpiece. Target-quality, metallic sights consist of a hooded front sight and a fully adjustable, V-notch rearsight. The optical sight consists of a Zeiss-Diavari-Z 1.5-power x 6-mm zoom telescope. The weapon weighs 15.8 pounds with biped and 13.75 pounds without the biped. The NATO telescope mount allows almost any electro-optical or optical sight to be mounted to the weapon.

A-9. SPAIN

The 7.62-mm C-75 special forces rifle is the current sniper rifle of Spain. This weapon uses a manually operated Mauser bolt-action. It is equipped with iron sights and has telescope mounts machined into the receiver to allow for the mounting of most electro-optic or optic sights. The weapon weighs 8.14 pounds. An experienced firer can deliver effective fire out to 1,500 meters using Match ammunition.

A-10. SWITZERLAND

The Swiss use the 7.62-mm x 51 NATO SG 510-4SIG rifle with telescopic sight. The SG 510-4 is a delayed, blow-back-operated, 20-round, magazine-fed, semiautomatic or fully automatic weapon. With biped, telescope, and

empty 20-round magazine, the weapon weighs 1229 pounds. It is 39.9 inches long with a 19.8-inch barrel and a muzzle velocity of 2,591 fps.

A-11. UNITED KINGDOM

The United Kingdom has four weapons designed for use by military snipers: the L42A1, Models 82 and 85 Parker-Hale, and L96A1.

a. **L42A1.** The L42A1 is a 7.62-mm x 51 single-shot, manually bolt-operated 10-round box magazine-fed conversion of the Enfield .303, Mark 4. It is 46.49 inches long with a barrel length of 27.51 inches. It comes equipped with metallic sights and 6-power x 42-mm LIA1 telescope, and has a muzzle velocity of 2,748 fps.

b. **Model 82.** The Model 82 sniper rifle is a 7.62-mm x 51 single-shot, manually bolt-operated, 4-round internal magazine-fed rifle built upon a Mauser 98-action. It is equipped with metallic target sights or the more popular V2S 4-variable power x 10-mm telescope. It can deliver precision fire at all ranges out to 400 meters with a 99 percent chance of first-round accuracy. The weapon weighs 10.5 pounds and is 45.7 inches long. It is made of select wood stock and has a 25.9-inch, freefloated heavy barrel. An optional, adjustable biped is also available.

c. **Model 85.** The Model 85 sniper rifle is a 7.62-mm x 51 single-shot, manually bolt-operated, 10-round box magazine-fed rifle designed for extended use under adverse conditions. Its loaded weight of 30.25 pounds consists of an adjustable-for-length walnut stock with a rubber recoil pad and cold-forged, free-floated 27.5-inch heavy barrel. The popular telescope is 6-power x 44-mm with a ballistic cam graduated from 200 to 900 meters. This weapon is guaranteed first-round hit capability on targets up to 600 meters. It also provides an 85 percent first-round capability at ranges of 600 to 900 meters. Features include:

- (1) An adjustable trigger.
- (2) A silent safety catch.
- (3) A threaded muzzle for a flash suppressor.
- (4) A biped with lateral and swivel capabilities.
- (5) An integral dovetail mount that accepts a variety of telescopes and electro-optical sights.

d. The L96A1 sniper rifle is a 7.62-mm x 51 single-shot, manually bolt-operated, 10-round box magazine-fed rifle weighing 13.64 pounds. It features an aluminum frame with a high-impact plastic, thumbhole-type stock, a free-floated barrel; and a lightweight-alloy, fully adjustable biped. The rifle is equipped with metallic sights that can deliver accurate fire out to 700 meters and can use the LIA1 telescope. The reported accuracy of

this weapon is 0.75 MOA at 1,000 meters. One interesting feature of the stock design is a spring-loaded monopod concealed in the butt. Fully adjustable for elevation, the monopod serves the same purpose as the sand sock that the US Army uses.

A-12. UNITED STATES

The US Army sniper weapons are the M21 and M24 SWS. As with other countries, earlier production sniper rifles are still being used abroad to include the M1, M1A-EZ and the M21. Other sniper weapon systems used by US forces are the USMC M40A1 and special application sniper rifles such as the RAI Model 500 and the Barrett Model 82.

a. **M40A1.** The M40A1 sniping rifle is a manually bolt-operated, 5-round internal magazine-fed 7.62-mm x 51 NATO weapon. This weapon is equipped with a Unertyl lo-power fixed telescope with a roil-dot reticle pattern as found in the M24's M3A telescope. The M40A1 is 43.97 inches long with a 24-inch barrel and weighs 14.45 pounds. It fires M1 18 special ball ammunition and has a muzzle velocity of 2,547 fps and a maximum effective range of 800 meters.

b. **RAI Model 500.** The RAI Model 500 long-range rifle is a manually bolt-operated, single-shot weapon, and it is chambered for the caliber .50 Browning cartridge. Its 33-inch heavy, fluted, free-floating barrel, biped, and fully adjustable stock and cheekpiece weigh a total of 29.92 pounds. The weapon is equipped with a harmonic balancer that dampens barrel vibrations, a telescope with a ranging scope base, and a muzzle brake with flash suppressor. The USMC and USN use this weapon, which has a muzzle velocity of 2,912 fps.

c. **Barrett Model 82.** The Barrett Model 82 sniping rifle is a recoil-operated, 1 l-round detachable box, magazine-fed, semiautomatic weapon chambered for the caliber .50 Browning cartridge. Its 36.9-inch fluted barrel is equipped with a six-port muzzle brake that reduces recoil by 30 percent. It has an adjustable biped and can also be mounted on the M82 tripod or any mounting compatible with the M60 machine gun. This weapon has a pistol-grip-style stock, is 65.9 inches long, and weighs 32.9 pounds. The sighting system consists of a telescope, but no metallic sights are provided. The telescope mount may accommodate any telescope with 1-inch rings. Muzzle velocity of the Model 82 is 2,849 fps.

A-13. THE FORMER RUSSIA

The Russians have a well-designed sniper weapon called the 7.62-mm Dragunov sniper rifle (SVD). The SVD is a semiautomatic, gas-operated, 10-round box, magazine-fed, 7.62-mm x 54 (rimmed) weapon. It is equipped

with metallic sights and the PSO-1 4-power telescopic sight with a battery-powered, illuminated reticle. The PSO-1 also incorporates a metascope that can detect an infrared source. Used by the former Warsaw Pact armies, this thumbhole/pistol-grip-style stocked weapon weighs 9.64 pounds with telescope and lo-round magazine. This weapon is 48.2 inches long with a 21.5-inch barrel, a muzzle velocity of 2,722 fps, and a maximum effective range of 600 to 800 meters.

A-14. THE FORMER YUGOSLAVIA

The former Yugoslav armed forces use the M76 semiautomatic sniping rifle. The M76 is a gas-operated, 10-round detachable box, magazine-fed, optically equipped 7.92-mm weapon. Variations of the weapon may be found in calibers 7.62-mm x 54 and 7.62-mm x 51 NATO. Believed to be based upon the FAZ family of automatic weapons, it features permanently affixed metallic sights, a pistol-grip-style wood stock, and a 4-power telescopic sight much the same as the Soviet PSO-1. It is graduated in NM-meter increments from 100 to 1,000 meters and has an optical sight mount that allows the mounting of passive nightsights. The M76 is 44.7 inches long with a 21.6-inch-long barrel. It weighs 11.2 pounds with the magazine and telescope, and it has a muzzle velocity of 2261 fps. A maximum effective range for the M76 is given as 800 meters with a maximum range of 1,000 meters.