



The round post front sight with protective ears is adjustable for both elevation and windage zero. It can be drifted, but the proper armorer's tool is the better choice.

Its prime directive was to “produce and repair all military equipment necessary for the army, the police, the border troops and all state security organs, as well as the testing of new models.” During this time frame, rifles, pistols and small arms ammunition were produced at Kazanlak.

After World War II, the manufacturing base of the plant was diversified and it commenced production of agricultural equipment, diesel engines, electric motors, batteries and other products. In 1948, the State Military Factory was transferred from the Defense Ministry to the Ministry of Industry and Crafts and designated as Factory 10.

Between 1956 and 1958, Factory 10 commenced manufacture of a recoilless cannon (B10) and the AK47 assault rifle under Soviet license. The first AK47 came off the assembly line in 1958. The 1 millionth Bulgarian AK47 was assembled in 1982. Several of its derivatives are still fielded by the Bulgarian military.

In 1964, the plant was renamed again as the United Industrial Plant Friedrich Engels. Production facilities were expanded to include facilities to produce springs, CNC machinery, a computer center and the ability to manufacture propellants, primers and pyrotechnic material.



Left to right: Arsenal semiautomatic-only SA M-7 SF side-folder, SA M-7 Classic and SAS M-7 A1 down-folder AK47 types. Kokalis says these are the best AKs ever made.



The ammunition used in SGN's test and evaluation of the three Arsenal AK47s was imported by Wolf Performance Ammunition. It's reliable, accurate and cost-effective.

Between 1977 and 1989, the factory added the licensed production of the following military products: Makarov pistol and 9x18mm ammunition, PK, PKM and PKT (tank version) caliber 7.62x54R General Purpose Machine Guns, Zu23-2 23mm anti-aircraft cannon, 5.45x39mm ammunition and the AK74 series of rifles and the 122mm howitzer.

Today the company is known as the Arsenal Corporation (Dept. SGN, 58 Simeonovsko Shosse Boulevard, BL-1700, Sofia, Bulgaria). The Bulgarian defense-marketing agency, Kintex (Dept. SGN, 66 James Boucher Street, Sofia 1407, Bulgaria), offers the largest variety of AK47 and AK74 rifles and squad automatics in the world. Available calibers include 7.62x39mm, 5.45x39mm, 5.56x45mm NATO and .22 LR. The Bulgarian armed forces issue a substantial number of the variants available.

In December 1999, Arsenal, Inc. opened a facility in the U.S. (Dept. SGN, 5015 West Sahara Avenue, Suite #125, Las Vegas, Nev. 89146; phone: 1-888-539-2220; fax: 1-702-643-2088; website: www.arsenalinc.com). Many of the personnel at this facility were trained at Tula Arsenal in Russia. The quality of semiautomatic Kalashnikov-type rifles manufactured here duplicates at every level the products produced in Russia and in many instances exceeds them.

M43 Cartridge—History and Wound Ballistics

Attributed to designers Nikolai M. Elizarov and Boris V. Semin, Soviet historians contend that work on the M43 (model 1943) 7.62x39mm cartridge began in 1939, was temporarily suspended because of The Great Patriotic War and then re-commenced and finalized in 1943.

Others have stated that it was derived from the German 7.92x33mm Kurz Patrone (short cartridge) developed for the world's first assault rifle produced in significant quantities, the World War II MP43/44 (StG44/45).

This latter scenario is highly unlikely, as the Soviets would have required specimens of 7.92x33mm Kurz ammunition at least a year or two prior to their adoption of the 7.62x39mm round in 1943—well before the MP43 was fielded on the Ostern front (first reported use was December 1942).

Whatever the case, the Soviet M43 cartridge is a true intermediate-size assault rifle round. First prototypes featured cases 40.29mm in length (thus: 7.62x41mm). The case was trimmed to 38.6mm as the original projectile proved unsatisfactory and a new bullet was adopted that required a shorter case.

(It has been proposed by writer J. Hartikka that the M43 cartridge was cloned from the Genschow & Co. [GECO] 7.75x39mm cartridge of 1935, but it cannot be demonstrated that this is anything other than internet chat room speculation.)

The following countries have manufactured ammunition in this caliber: Austria, Belgium, Brazil, Bulgaria, Cuba, Czechoslovakia, East Germany, Egypt, Finland, France, Hungary, Iraq, Israel, Netherlands, North Korea, Norway, Peru, Poland, Portugal, People's Republic of China, Romania, South Africa, South Korea, Sweden, Syria, United States, USSR, West Germany, and Yugoslavia.

In addition to ball ammunition, it has been produced with hollow point, tracer, API (Armor-Piercing Incendiary), and IT (Incendiary Tracer) projectiles.

Special-purpose loads include heavy subsonic ball (for use with sound suppressors), practice blanks, short-range loads and drill rounds. Ball ammunition will be encountered in two configurations. Most prevalent is a 123-grain boattail bullet that usually consists of a copper-washed steel jacket, lead and antimony sleeve, and a mild steel core (Soviet Type PS).

Yugoslavia's M67 ball ammunition, as well as that of several other countries, uses a flat-based bullet of approximately the same weight, with a copper-alloy jacket and lead core. Muzzle

velocity of both types is between 2330 and 2400 fps.

In its boattail configuration, the 7.62x39mm bullet travels point-forward about 10 inches in soft tissue before significant yaw occurs. At that point the bullet will yaw to less than 90°, then come back down to a point-forward position, and finally yaw 180° and end its travel in a base forward position.

Bi-lobed yaw cycles of this type are commonly observed with pointed, non-deforming bullets. Total penetration in living tissue is almost 29 inches.

Abdominal shots usually exhibit no greater tissue disruption than that produced by a .38 Spl. pistol bullet since, after 10 inches of travel without yawing, the bullet has generally passed through the abdominal cavity. However, of course, this round is capable of inflicting such damage at far greater ranges than a handgun.

While I was working at the Wound Ballistics Laboratory at the Letterman Army Institute of Research in San Francisco, we tested the lead-cored, flat-base Yugoslav bullet and found it to be considerably more effective.

It commences its yaw cycle after only 3 to 4 inches of penetration. Once again, the yaw cycle is generally bi-lobed. The bullet reaches its maximum penetration of 23 to 26 inches traveling base-forward, somewhat flattened and retaining almost all of its original weight (two or three small fragments are shed in the area of maximum cavitation).

Although the flat-based 7.62x39mm bullet is shorter (.93") than the more common boattail projectile (1.040 inches), it will be expected to cause more damage to the abdomen, liver, spleen or pancreas because the bullet passes through these organs at a large yaw angle.

Remember, if we have neither mushrooming nor fragmentation, yawing is all that remains to maximize tissue disruption and enhance the bullet's performance—always provided we do not sacrifice adequate penetration.



Mikhail Kalashnikov clearly took the down-folder buttstock on the AK47 from the German MP40 submachine gun. It has been carried and used in all corners of the world.

The ammunition used in our test and evaluation of the three Arsenal AK47s was imported by Wolf Performance Ammunition (Dept. SGN, 1225 North Lance Lane, Anaheim, Calif. 92806; phone: 888-757-9653; fax: 714-632-9232; Email: info@wolfammo.com; website: www.wolfammo.com) and manufactured at Tula Cartridge Works in Russia.

Headstamped “7.62X39 WOLF”, the lacquered steel case has a red case mouth sealant and primer annulus. This ammunition is Berdan primed. Boattail projectiles in the standard weight, 122-123 grains, are available in either Full Metal Jacket (FMJ) or Hollow Point (HP) types.

In this weight, the muzzle velocity is approximately 2400 fps. Testing of 7.62x39mm HP projectiles, designed originally to meet U.S. importation regulations, indicated that most often the bullets became frangible upon contact with the tissue simulant or else exhibited no expansion at all.

A loading with a 154-grain Soft Point (SP) bullet, designed specifically for hunting, is also available. This projectile features a muzzle velocity of approximately 2100 fps. In all calibers, Wolf ammunition has proven to be reliable, accurate and competitively priced.