Hungarian FEGARMY FEG PA-63
9x18mm Mak, Semi-Automatic Pistol
Extensive User's Instruction, Safety Guide and Manual

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General Safety Guidelines

IMPORTANT:

Firearms can be very dangerous if misused. When purchasing a firearm, you assume a great responsibility for its use, storage and transportation. Even though you may be familiar or have had experience with other firearms; each firearm is different. In order to understand the basics of the PA-63 pistol, this manual should be read in its entirety. Enrollment in a firearms safety course approved by the National Rifle Association (NRA) (link) is encouraged if you are unfamiliar with firearms. Failure to heed the warnings in this booklet may result in serious injury to you or others, as well as damage to the firearm or other property. Listed below are some guidelines which should be strictly observed.

1. Handle all firearms as if they are loaded.
2. Be thoroughly familiar with the firearms before firing.
3. Keep the muzzle pointed in a safe direction away from people and animals, so if accidental discharge should occur only minor property damage would result.
4. Keep your finger off the trigger until you are on target and have decided to fire.
5. Be sure of your target and what is beyond it, including the backstop. Make certain shots fired present no safety hazard for yourself or others.
6. Never allow anyone to use your firearm that is not completely familiar with its operation.
7. Whenever the firearm is not actually in use, make certain it is unloaded.
8. Secure all firearms and ammunition from access by unauthorized persons, including children.
9. Always use eye and hearing protection when shooting any firearm or when near firearms being fired.
10. In the event of a misfire or hang-fire (cartridge which does not immediately fire), keep the muzzle pointed in a safe direction. Wait approximately 30 seconds before opening the action. Discard the faulty cartridge and inspect the bolt, chamber, and bore for damage or obstruction before firing is resumed.
11. In the event of a failure-to-eject “stove-pipe” or failure-to-feed or double-feed, remove the magazine, firmly hold the firearm’s grip or frame, pull and hold or lock the slide fully rearward, and remove all cartridges and casings. Inspect the bolt, chamber, and bore for damage or obstruction before firing is resumed.
12. Clean the area after a shooting session. Do not leave spent casings, empty cartridge boxes, bullet ridden targets or the like behind. These too could cause injury to a person or damage to property.
13. Clean and oil your firearm(s) and related equipment or accessories after each shooting session. More information about maintenance is on pages entitled “**Maintenance**”, or see the “**Table of Contents**.”

Firearm Warnings

This Firearm is Used

While the Hungarian FEG PA-63 pistols and its variants are, as a general rule reliable, well-constructed quality weapons, they are nonetheless pre-owned, used and out of production firearms. Initial manufacture began in the 1960s, and any pistol purchased today must be viewed as not having been examined by a qualified professional for some time. As with any firearm, certain precautions must be exercised before putting the pistol back into service.

1. Thoroughly clean the firearm and have it inspected by a reputable gunsmith before firing.

2. Make certain there are no obstructions in the bore.

3. Be completely familiar with the proper operation of your firearms, especially the safety features.

4. Use only clean ammunition of the correct type, caliber and loading. For instance, newly manufactured 9mm by 18mm Makarov (9x18mm Mak), 95 grain FMJ ammunition cartridges from a major vendor and brand are a good choice. Do not use hand loaded or re-loaded ammunition. Do not use 9mm Luger (parabellum) ammunition – this can cause serious damage to the firearm and injury to you and/or others.

5. Do not fire any previously owned weapon without first having it examined by a competent professional.

Firearms are not all alike

Many makes and models of firearms might LOOK nearly the same. However, they differ widely and significantly in design, operation, and the location and function of various controls. The proper cartridge loading can also differ. Study this manual thoroughly. Educate yourself on the characteristics and operation of your particular firearm before attempting to handle it. Do not permit others to handle it, unless they also have done so. You should have an instruction manual for every firearm you own. If you do not, try to contact the manufacturer or affiliated distributor and obtain a proper manual when possible. Most manufacturers may send you one free or at a small cost. If for any reason a manual is not available, visit your public library and search online the Internet. Many books have been published which contain detailed information on obsolete or discontinued firearms. Your knowledge can prevent malfunctions and injuries.

Forward and Historical Background

Forward

Political and economic forces brought the once powerful United Soviet Socialist Republic to a dramatic, if not dignified, end. However, in wake of the USSR's passage, some remarkable things did happen to the world of firearms. Many firearms once only known to serious collectors, or fortunate war veterans, are now not uncommon at gun shops and gun shows throughout the United States. Aficionados should enjoy this relative abundance while it lasts. The forces of anti-gun politics and limited numbers will bring an end to ready and inexpensive availability all too soon. •

Historical Background

FÉG (Fegyver- és Gépgyár, "Arms and Machine Factory") refers to the Hungarian company Fegyver- és Gépgyártó Részvénytársaság ("Arms and Machine Manufacturing Company"), which was ounded on February 24, 1891 in Budapest. The company came under the ownership of MPF Industry Group in 2010, after the acquisition, FÉG is one of the biggest exporters of HVAC products to the international markets in the East-Central European heating device industry.

1891-2004 Era

The company was an important arms manufacturer in the country, but it also produced gas equipment, water heaters, lamps and miscellaneous metal-ware. Throughout its history it was renamed several times for various reasons; to Fémáru, Fegyver- és Gépgyár ("Metal-ware, Arms and Machine Factory") in 1935, to Lámpagyár ("Lamp Factory") in 1946, to Fegyver- és Gázkészülékgyár ("Arms and Gas Equipment Factory") in 1965. Decades later, in post-communist times it was renamed as FÉGARMY Fegyvergyártó Kft. ("FÉGARMY Arms Factory Ltd."). Through its history it always fulfilled a crucial role in supplying the Honvédség (military) with small arms, this company also manufactured and exported a variety of semi-automatic pistols and rifles, including the P9M and the PJK-9HP models (copies of the famous Browning Hi-Power) and the FÉG PA-63 (a Walther PP/PPK clone in 9x18mm Makarov), but currently only self-loading pistols (P9L, P9M, P9R, etc.) and break-barrel air rifles (LG 427, LG 527). In Hungary the company is also famous for its starting pistols, for example the GRP-9, as well as manufacturing most of the propane water boilers and heaters found in Hungarian panel houses.

2004 and Afterwards

After 2004 many of its traditional export markets were put under embargo and this caused the company to stop its activity connected to the defense industry. At the end of 2010, FÉG almost went to bankruptcy when HUF 1.7 billion of funds where disappeared from the company. Fortunately, MPF Industry Group made an important investment to rescue the company, and restarted the production. Since MPF Industry Group's reorganization, FÉG is one of the biggest East-Central European HVAC manufacturers. •

Historical Background

Summarized History of the Hungarian Weapon Factory, FÉG

1886: The Hungarian Government decided to build a Military Weapon Factory at 158 Soroksári U, Budapest. It opened on Feb. 24, 1891.

1891-1919: Fegyver- és Gépgyár Részvénytársaság, Budapest ('F.G.GY.') - [Weapon and Machinery Factory Company, Budapest]

1919-1946: Fémáru, Fegyver- és Gépgyár Részvénytársaság, Budapest - [Metal Products, Weapon and Machinery Factory Company, Budapest]

1946 March 6 - 1959: Lámpagyár (Lampart Muvek), Budapest - [Lamp Factory (Lampart), Budapest]

1958: The 1st known use of the FÉG abbreviation can be found on commercial pistols

1948-1975: Fémáru és Szerszámgépgyár NV - [Metal Products and Tool Machinery Factory Company] (Used on guns from 1948)

1975-2003: Fegyver- és Gázkészulékgyár ('FÉG'), Budapest - [Weapon and Gas Appliance Factory, Budapest] (From 1965, by other sources)

2003-2005: FÉGArmy Fegyvergyártó Kft ('FÉG'), Budapest - [FÉGArmy Weapon Manufacturing Company, Budapest]

2005: FÉGArmy declared bankruptcy due to new firearm exportation ban laws. See photo below.

Historical Background: Pistols

József Kameniczky (1923-1997)

József Kameniczky and fellow engineers at FEG from the 1940s to the 1970s are accredited for designing or improving several of the simple blowback pistols of FEG including the Walam 48, RK-59, R-61, PA-63 and their variants.

Police Pistol 48.M (Walam 48)

In 1946 the Belügyminisztérium (Ministry of the Interior) requested a Walther PP type service pistol for the Hungarian Police to replace their aging WW1-era Frommer Stop Pistols. One of the pre-WW2 Fémáru design engineers, Lajos Előd̈y was called back to manage the project. The resulting design was a copy of the Walther PP with slight modifications. Most Walther PP parts were interchangeable with the 48.M. Post-war PP mags also fit the 48.M. The pistol was adopted by the police in 1948, hence the 48.M designation. The original Police Contract was 22000 pistols, from that number about 11,500 went to the National Police, 10,000 went to the Vám- és Pénzügyőrség (Border and Bank Guards) and 450 hard-chromed pistols went to the high ranking police officials.

After the 7.65mm police contract was fullfilled in 1950, the pistol was offered for other units and for export. During the 1956 Revolution a small number of 48.M's were supplied to party officials for self-defense. The slides of these pistols were stamped 'POLGÁRI' [civilian]. The manufacturer's imprint on the slide: 'FÉMÁRU ÉS SZERSZÁMGÉPGYÁR N.V. BUDAPEST 48.M. KAL. 7.65mm.' The pistol featured a distinctive finger rest at the bottom of the magazine. The grips were red-brown bakelite with crests. Early manufactured grips had the 'Hungarian Police Crest', the later versions had the Rakosi Crest. A few pistols were reported with a post-1956 'Kadar Crest', probably replacements. The pistol was in police service until 1959, when it was gradually replaced with other Femeru pistols chambered for the Warsaw Pact 9x18mm Makarov cartridge – pistol models RK-59, R-61 and PA-63.

Note: This pistol called the Rendõr (Police) Model 48, or 48.R or 48.M, or Walam 48 which can lead to confusion with the Hungarian Army Model 48 (the copy of the Soviet [Russian] Tokarev TT-33). The Hungarian Army never adopted the 7.65mm Police 48.M pistol. •

Introduction of the PA-63 Pistol

Upon the success of the light weight R-61 Police Pistol, designed and issued in 1961, the Hungarian People's Army requested a new aluminum alloy framed 9x18mm Makarov chambered pistol to replace their 48.M (Tokarev TT-33) Army Pistols. They also asked for and received a 7-round magazine and a longer, 100mm (3.9 inch) barrel. The PA-63 was the official sidearm for the Hungarian Army from 1963 until 1996, chambered for the 9x18mm Makarov cartridge. It was manufactured with a bright-finish titanium-aluminum alloy frame (later with blued frame), and a steel slide. Early grips had no thumb-rest. Some police and commercial pistols have two-tone finish. This pistol was replaced by the 9x19mm FÉG P9RC as the Hungarian Army's '96.M' service pistol in 1996. •

Features, Variants, Implications and Thoughts

Redesign of the Walther PP Pistols:

- Safety: Both FÉG and PP have hammer drop safeties, but the FÉG has a passive firing pin safety while the PP does not.
- Firing pin: The rear of the firing pin of the FÉG is below the line of the hammer face when the hammer is un-cocked, and rises up in line with the hammer face when cocked. The PP firing pin does not move up or down, and it is always in line with the hammer face.
- Hammer: The PP has a passive hammer block, while the FÉG does not. The FÉG and PP have different hammer face profiles. The hammer profile of the FÉG is relatively narrow (similar to that of the Mauser HSc) and interacts with the position of the firing pin to provide the same type of "hammer off the firing pin while uncocked" as does the hammer block on the PP.
- Magazines: FÉG and Walther magazines do not interchange. Post-1945 Walther PP pistols use a little tab on the left side of the magazine follower to activate the slide hold-open. This follower tab requires a matching raceway in the left magazine wall which shows on the outside of the magazine as a small rib. FÉG uses a different approach to hold the slide open on an empty magazine, so FÉG magazines do not have this rib. Pre-1945 Walther PP magazines and post-1945 Manhurin PP magazines do not have this magazine rib, and will fit the magazine well of a FÉG pistol, but they will not latch into place as the latch cut in FÉG and Walther magazines are in slightly different places. •

Basic Features: PA-63 Pistol

The pistol is a clone of the Walther PPK with an aluminum-titanium alloy frame and a steel slide. It was manufactured by Fémáru és Szerszámgépgyár NV, Budapest, Hungary from 1963 to 1975 and also manufactured by Fegyver és Gázkészülékgyár ('FÉG'), Budapest, Hungary from 1975 to 1990. The caliber is 9x18mm Makarov, and the overall length is 171mm [6.7 inch] long, and has a 100mm [3.9 inch] long barrel. The magazine-capacity is 7-rd rounds. Its unloaded weight is 540 grams [19 ounces[, and loaded weight is 600g [21.1 ounces].

Variants

There is an initial version, plus several variants, all chambered in 9x18mm Mak. The initial version has all blued metal, and smooth black grips. Some pistols' grips have a thumb-rest ridge on the left grip and others do not.

Typical PA-63 markings are on the left side of the frame, between the trigger and the grip panel. The serial numbers are usually 2 letters and 4 numbers. The circled 'M' and the heart-shape circled 'I' are inspection marks. The small Hungarian crest, with the two-digit date, is the acceptance mark. The '7's are a bit weird often look like '1's. Acceptance dates as early as 1947 have been observed on the PA-63's, obviously a few older guns were rebuilt into PA-63's. Note to the collectors: Pistols with dates over 50 years old qualify for C&R (Curio & Relic) FFL. •

Features, Variants, Implications and Thoughts (2)

Variants

Variant 1 was imported by Century Arms, VT, USA, cca 1995-2000. Slide legend: 'Cal. 9mm Made in Hungary'. The thumb-rest ridge on the left grip was an upgrade. There are standard Hungarian FEG inspection-marks, and standard Hungarian FEG serial numbering.


Variant 2 was imported by PW Arms, Redmond, WA, USA, cca 2000-05. There are standard Hungarian FEG inspection marks and standard Hungarian FEG serial numbering.


Variant 3 was imported by KBI Inc, Harrisburg, PA, USA, cca 1990-2000. Standard Hungarian inspection marks, but standard Hungarian serial numbering was abandoned and a 6-digit number with a single letter prefix was used. Electro-penciled engraved legend "FÉG" believed to be added by KBI.

The Military standard PA-63 version sports a two-tone polished aluminum frame with black slide, grips, trigger and hammer assembly. While unusual for military issue in that a reflective polish was used, it was chosen due to its relative cheapness as well as quicker build-time.

Variant 4 was a more "modernized" version of the PA-63 with an ergonomically shaped grip design, and it was marketed cca. 2005. These were available from US importer, Century Arms International (CAI).

Other Variants and Similar Models

The AP-MBP, AP9, AP9S, HEGE AP66, SAPS, SMC-380, PMK-380 and PPH-380 are various pistol models that are very similar to the PA-63. They were manufactured during different time periods and chambered in different calibers and were based on and influenced by the Walther PP, Walther PPK, FEG PA-63, FEG RK-59 and FEG R61 pistols. See the page entitled "**Appendix**" in this document for more information.

Features, Variants, Implications and Thoughts (3)

Comprimises of the PA-63

The PA-63 design reflects a compromise between police and military needs. The safety/decocking lever, located on the rear of the slide, must be pushed forward to disengage the safety. Aficionados of the John Browning-designed Model 1911 or the Makarov PM may find this design unfamiliar, although those with experience using more modern designs such as the Walther PPK or Beretta M9 pistols will find the safety/decocking lever to be located in a similar position. The 7-round magazine capacity (effectively 7+1 in practise) is much lower than many newer service pistol designs. Due to its lighter-weight alloy construction, the PA-63 handgun produces more noticeable recoil than the similarly sized, all steel Makarov PM, and some shooters may note an increased tendency toward muzzle flip with each shot. This tendency can be reduced by replacing the stock recoil spring with a stronger one, readily available as an aftermarket item. Many of the objections raised to the PA-63 have to do with its perception as a military service pistol in the tradition of the American M1911A1, the Russian Tokarev, the German Walther P-38 and P-08 Luger, or the Browning High-Power. As its design can be traced back to a German pocket pistol intended for concealed carry in a pocket or under a coat rather than in a holster on the battlefield, these objections are perhaps understandable. After the fall of communism in 1990, the Hungarian army and police units initiated a program to replace the PA-63 with pistols using the NATO standard 9×19mm Parabellum cartridge, first the imported Jericho 941, followed by the domestically produced P9RC, but the PA-63 is still in service in Hungarian law enforcement. It has been largely phased out in Hungary, but due to the large number produced, they are a popular and affordable surplus firearm since they have begun to be imported to the West, namely to the United States. •

“Makarov” Label

PA-63 pistols sold in the United States are often advertised as "PA-63 Makarov." This can lead some consumers to believe they are purchasing a Makarov PM pistol (designed in Russia, not Hungary) instead of a different pistol chambered for the same 9×18mm Makarov caliber. Though both pistols share lineage from the Walther PP/PPK, similar operating principles and use the same ammunition, the Makarov PM is a different design featuring all-steel construction and different lockwork. There are *no* parts in common between the FÉG PA-63 and the Makarov PM. Also note that a true and proper PA-63 is chambered *only* for 9x18mm Mak ammunition. This ammuntion is significantly different than 380 ACP (Kurtz, 9 short) and 9mm Luger (Parabellum), therefore 9x18mm Mak ammunition is unique. See the pages entitled “**Specifications**” and “**9x18mm Makarov Ammunition**” in this document for more information. •

Features, Variants, Implications and Thoughts (4)

PA-63 9x18 Makarov Review, by CL203 of the lee1812 blog

The 9x18 Makarov is a good reliable gun for a shooter on a budget who's main concern is self defense. The Makarov is a relatively inexpensive fire arm, I paid about 175 USD for mine about a year ago and in the time that I owned it I never had a single problem when it came to feeding ammunition, jams or break downs of any sort. The particular model I had was the PA-63 of Hungarian make. It is very similar in looks and design to the Walther PPK featuring a drop safety and and double/ single action trigger pull and is a very small framed pistol ideal for concealment. It also features relatively easy break down and cleaning, there is only the slide, one recoil spring and the barrel is attached to the frame. The praises of the model being said, there are a few drawbacks to this model the first being [its somewhat small] size. I have relatively large hands and it was impossible for me to get a comfortable grip on the gun and avoid having the the top of my hand sliced open by the slide. The second draw back was magazine capacity and availability. This Model could only carry seven rounds in the magazine and extra magazines are particularly hard to find for the PA-63 so if you are interested in having a lot of extra rounds ready expect to pay around 60 USD per magazine. The magazines also did not have a very forceful release instead of dropping completely free of the gun they require your spare hand to remove, the extra time you have to take for this could mean life or death in a tight situation. Another draw back is availability of defensive ammunition, while it is findable on the internet I would avoid buying the Silver Bear brand JHP and don't expect the local gun store to have any defensive ammo in stock. Lastly is the fact that like all makarovs it functions on the Blowback Breach principal, this conjoined with the fact that it is a small light gun makes it very brutal on the shooters hand so practicing is likely to be a painful endevor. All in all I would recomend the PA-63 to an experianced shooter with small hands that is looking for a small easily concealable pistol and is looking for something stronger than a .25 or.380. • *Side Note:* As of 2015, the Prvi Partizan, Hornady and Buffalo-Bore brands are readily selling 9x18mm Mak JHP defensive ammunition online. The Corbon and Underwood brands are also occasionally available via their own websites. •

A Down and Dirty Quick Review of the FEG PA63, The Poor Man's Short Sword, by Jesse Mathewson of the Individuals Talking Back blog

Carrying a backup weapon to supplement your primary carry and training in the use of all weapons carried allows an individual to be better prepared. The old saying is expect the unexpected. My iteration of that saying is simple, train in the basics until they become second nature. By doing this you are better able to adapt to the unexpected and triumph regardless the scenario. One of the backup weapons I have chosen is the FEG pa63, used by some militaries in Europe the 9×18 caliber is considered anemic by those who believe only something beginning with 4 and ending with 5 can possibly work. Given that most individuals who have real experience behind a gun rely on accuracy over size squashes the false idea that this is an anemic round. It is a handgun round fired from an extremely accurate, superbly reliable, relatively inexpensive firearm. Until you get into cannon shells there is no real stopping power in firearms. And since I am unaware of an easily carried 20mm handgun or carbine I will rely on my ability to accurately and reliably put rounds where I desire them to go for defense of self and loved ones. This particular firearm can be had for between 150 and 300 usd normally. Its performance should place it in a much higher category except for the easily remedied issues people tend to have with it. Built from an aluminum titanium mix the frame is exceedingly light, this allows for increased recoil. Taking a file to the back edges of the slide terminates any chance of damage to the web of the hand when firing. •

Features, Variants, Implications and Thoughts (5)

A Down and Dirty Quick Review of the FEG PA63… (continued)

In double action it is a bear as it is made, however, this can be reduced by placing a lighter spring purchased from Wolff springs into it. Also the recoil can be reduced by replacing the recoil spring with a substantially increased weight one. While this will increase the strength needed to rack the slide, and if you do that properly it shouldn't matter anyhow. A simple dab of white or red paint on the front sight will allow for better sight acquisition though, without it you can easily point shoot at up to 15 yards effectively. There is a great show and tell regarding the quick fixes to make this a sweet shooter as well as accurate, reliable and functional. It can be found by following this link on improving the FEG pa63.

Some individuals have replaced the sights and I could likely do this, however, it is a backup not a primary. As a result I am not as interested in the sights as I am in the reliability and inherent accuracy. This is where solid training comes into play. Learn where your natural point of aim is in the various positions you may find yourself and acclimate yourself to the handguns you use. If you do this correctly you will easily be able to put rounds on target where you want them regardless of how well you see the sights. I have watched master class shooters lose a front sight and still win competitive shoots. Fingers should not be in front of the guard.

Regardless I would highly recommend the FEG pa63 as a concealed weapon for anyone with the springs and filed back corners of the frame being accomplished. I do not hesitate to stick it in my belt or pocket and will continue to do so as long as I can stand. Given the relatively inexpensive nature of this firearm I would also recommend purchasing two or even three. You never know when you may need to arm a friend, and these basically shoot themselves.

For women or men who desire safeties they have an external safety and de-cocker. If you are not sure of your abilities with a firearm leave it on and practice with the firearm safely cleared until you are confident in your abilities to draw, release the safety and proceed with placing rounds where they belong. Always of course utilize the proper double hand grip, DO NOT tea cup this firearm, it will only hurt your accuracy. I placed grip tape on the handles and front of the grip as well as taking a file to the back strap which has made the firearm much more easily gripped with sweaty or even bloody hands. Of course the grip itself is sized well to fit even smaller hands with my wife mentioning more than once her appreciation for fit.

Purchase spare magazines and use full metal jacket ammunition. Sure you will lose the potential for expansion but you gain penetration and with accurate placement will still cause blood loss necessary to put a target down. It operates on a blowback principle which allows for superb reliability, but increased recoil. This is easily fixed as mentioned above. Proper grip: All fingers under trigger guard wrapped firmly around strong hand.

The round itself is slightly more powerful than a .380 but less so then a 9×19 luger. It will easily penetrate several layers of clothing and flesh and bone at any of the real distances you may find yourself in. At 3-25 yards I am able to place all shots within a 3 inch circle and can do so with speed and accuracy. While it only carries 7 rounds, this makes it more desirable for those who currently reside in communist states or countries such as New York or California.

If you do end up purchasing a couple and need additional assistance locating ammunition or parts let me know or google it. This has been an abbreviated review of the FEG pa63 handgun, a handgun that was meant to mimic the vaunted Walther PPK an overpriced version of this wonderful little handgun. The only real drawbacks I have had to deal with is the lack of a flashlight rail, however, I am working on that and while I have and continue to train with the various holds with a flashlight I hope to someday come up with something that will work decently for this piece. •

Features, Variants, Implications and Thoughts (6)

Review of the PA-63, by the Editor of the Guns.com blog

A Simple Fix for a Decent Hungarian

If you've got one of these inexpensive Hungarian pistols, this may be of interest to you, especially if you've been experiencing problems with jams.

A customer recently brought in a FEG PA63 for repair. He had just gotten it and wasn't quite sure what he wanted to do with it. He said he was thinking about making it a carry gun. At first, I could see that. It was a little gun with a black and silver Oakland Raiders look going on, and its obvious PPK heritage brings James Bond to mind, too. It makes me think about wearing a suit and tie – and a shoulder holster. The little gun gets a thumbs-up for cool looks. But then the man took me out of my fantasy. He shook his head, threw his hands up, and said to me, "It stovepipes every third round." "Oh," I said.

A stovepipe is when a fired, extracted case gets caught in the ejection port as the slide closes - looking like a stovepipe sticking up out of the gun. I said, "Alright, let me take a look."

The first place to look for the culprit is the magazines, but his were good. So I field stripped the pistol, examined the extractor and made sure it engaged a cartridge case properly. The extractor spring tension was good. Next, I checked the ejector, but all the edges were straight and flat. Then I recalled that when I field stripped it the recoil spring slid off of the barrel when it should have stayed on. I looked closer and noticed one end of the coil spring had a smaller opening than the other. The smaller end fit snugly on the barrel to hold the spring in place while the larger end did not. Someone had reassembled this pistol by sliding the larger end over the barrel – installing the spring backwards. "Could that cause the stovepipes?" I wondered. I reassembled the pistol several times, trying the spring installed both ways, and I noticed that when the spring was on backwards that it stacked just a little bit harder at the end of the slide stroke. "This could be it," I thought, "Was the spring just incorrectly installed?" So I went to the range and found out why plus some other interesting things.

The Prescott National Forest

I headed just outside of town, at the very edge of Arizona's Prescott National Forest, to the Prescott Sportsmen's Club range. It's a beautiful place where deer, quail and javelina (peccary) routinely wander through. It faces north and has separate pistol, rifle and rim-fire ranges with room for about a dozen shooters each. The customer supplied three boxes of Russian ammo to troubleshoot the pistol's problem. I was eager to solve the problem, not to mention getting some shooting done. Don't you just love free ammo?

Let the Test Begin

Turns out I was right. All it needed was some rearranging of certain internal components and it functioned fine. However, its performance was a different story. The pistol is very lightweight due to its alloy frame. With reduced weight, the perceived recoil is increased. Even with its small cartridge the muzzle flip on the PA63 is quite pronounced. It tends to slap sharply backwards. It was totally controllable for me, but it may bother others. My advice, swap out the issue 13-pound recoil spring for an aftermarket 15-pound Wolff spring. The heavier spring would also ostensibly allow you to shoot "hotter" supposed self-defense loads in the pistol, but remember that alloy frame? Shooting that stuff is bound to cause trouble sooner or later, starting with feeding and ejection problems, and working up into, potentially, a catastrophic failure. If you want a good self-defense handgun and cartridge - this isn't it.

Features, Variants, Implications and Thoughts (7)

Review of the PA-63, by the Editor of the Guns.com blog (continued)

Ergonomics

I have medium size hands, and if the PA63s grip were a couple of microns shorter, and if the magazines didn't have forward swells on the floorplates, the pistol wouldn't fit my hand. But it isn't, they do and it does. The back of the grip has well-designed ergonomics without sharp edges and, combined with the thumb rest on the left grip panel, it settles naturally in my hand.

Controls

Here's another reason why this isn't a self-defense choice, at least for me: I can't reach the mag release with my right thumb unless I shift the pistol out of shooting position in my hand. Also, the magazines don't drop clear after release, they stay in the mag well, complicating and slowing a tactical reload.

This is a blowback operated pistol, meaning the slide doesn't lock closed. The recoil spring actually holds the action closed and Newton's Third Law pushes the slide rearward as the bullet moves down the bore, compressing the spring, which then throws the slide forward again.

The hammer spring is a pretty hefty number, too, so when the hammer is down the combination of the two springs require the shooter to put some effort into retracting the slide to inspect the chamber. The slide serrations aren't just cosmetic, they are a help in this operation.

Seven cute little 9x18s go into each mag, but be careful; the mag edges are a bit sharp. The magazines slide easily into the mag well, lock in with a satisfying click, but remember, there's no slide release, so users must pull back on the slide to re-chamber a round.

The slide mounted safety is also a de-cocker. Some folks like them, some folks don't. If you chamber a round, de-cock, forget to put the de-cocker back in the fire position and you're only plinking, it can be irritating. If you do that in a self-defense mode, it could be fatal. (Dang – is my 1911 bias showing?)

Trigger

The trigger is Double-Action/Single-Action. De-cocking lowers the hammer on a chambered round. Now your first trigger pull is really long and weighs about 137,000 pounds – that might be a little exaggerated, but seriously it's a stout pull. However, the SA trigger pull weighs a sweet 4 to 5 pounds, and you can actually press the trigger like you're supposed to and hopefully shoot more accurately.

Two-Second Stripper

If I had four or five of these pistols it would be fun to sit around with friends and see who can field-strip it in less than two seconds. It breaks down into three pieces: frame and barrel, spring, and slide. There's no buttons, no screws, no bushings.

Fun Gun

The PA63 is a decent enough pistol, certainly worth its price tag of under-$200 that my customer paid for it. It's small, lightweight and easy to carry, but the power of its 9x18mm cartridge is a bit well, not powerful, falling between the 9mm Luger and the .380 ACP. There are better choices for self-defense, and I'll bet the Hungarian police who still have to rely in the 9x18 wish they had them. As the pistol is not really suitable for fine target work or for hunting, I put it in the "fun gun" class. •

Features, Variants, Implications and Thoughts (8)

Improving the FEG PA63 9x18 Makarov, by Roy Seifert of the Kitchen Table Gunsmith website

Disclaimer: This article is for entertainment only and is not to be used in lieu of a qualified gunsmith. Please defer all firearms work to a qualified gunsmith. Any ammo-loads mentioned in this article are my loads for my guns and have been carefully worked up using established guidelines and special tools. The author assumes no responsibility or liability for use of these loads, or use or misuse of this article. Please note that I am not a professional gunsmith, just a shooting enthusiast and hobbyist, as well as a tinkerer. This article explains work that I performed to my guns without the assistance of a qualified gunsmith. Some procedures described in this article require special tools and cannot and should not be performed without those tools.
Warning: Disassembling and tinkering with your firearm may void the warranty (or worse). I claim no responsibility for use or misuse of this article. Again, this article is for entertainment purposes only!

Introduction

I have a concealed carry permit (CCP) for the state of North Carolina, but summers here get pretty hot and humid which precludes wearing jackets, vests, or any other long garments to cover a holster. A convenient method for summer-time carry is a specially designed fanny pack. They're easy to use; I can carry my wallet, keys, spare magazines, and a gun, and are so common that they're virtually invisible. However, they are not designed for full-sized guns; therefore I needed to find a small, lightweight pistol suitable for carrying in a fanny pack. I had been reading an abundance of positive information about the European Makarovs being imported into this country. The 9x18 Makarov guns themselves are fairly inexpensive ($100 - $250) depending on where you buy. 9x18 Makarov ammo is like a .380 Auto on steroids, so I decided to search for a Makarov. While visiting a local gun store with a friend I found a Hungarian FEG PA-63 in 9x18 Makarov caliber. This gun is almost an exact copy of a Walther PP (larger than a PPK or PPKS) and looked like it would fit my needs well. The Military standard PA-63 version sports a two-tone polished aluminum frame with black slide, grips, trigger and hammer assembly. To me it's an attractive little pistol. Although the reflective frame was unusual for military use, it was chosen due to its relative cheapness as well as quicker build-time. Problems related to the durability of the aluminum frame were resolved prior to the development of the PA-63 in 1961 with the production of the FEG R-61 Police Pistol. The addition of 0.1% titanium to the aluminum alloy solved premature alloy frame wear problems inherent in the earlier FEG aluminum framed pistols. This development was then applied to all aluminum framed FEG guns including the PA-63.

Initial Disassembly and Inspection

The first thing I do with a new gun is to completely disassemble it. I followed the disassembly instructions for a Walther PP, which worked very well. I cleaned and oiled everything and did some preliminary inspection, not only for fit, function and wear, but also for areas that could use some improvement. This particular gun looked like it had not been fired very much. During my initial inspection it looked like someone had clipped a few coils off the hammer spring. One end of the spring was flattened and compressed like it comes from the factory. The other end was unevenly flattened, but not compressed; a sure sign that someone had been working on it.

Features, Variants, Implications and Thoughts (9)

Improving the FEG PA63 9x18 Makarov (continued)

Magazine Well

The magazine well was perfectly straight and made inserting a magazine an exacting chore. True this is not an IPSC or competition gun, but since I plan to carry it for personal defense I wanted to improve the ability to insert a magazine. I put the frame in the machinist vice with the magazine well up and leveled. I used the cone cutter from my high-speed rotary tool to bevel the inside of the magazine well. Aluminum is very nice to work with, but I was careful not to cut too deeply. After I did the rough-cut on the mill I polished the bevel with 320-grit wet/dry paper on a Popsicle stick.

Not all 9mm's Are Alike

There are three common types of 9mm ammuniotion available for consumers. <u>They cannot, nor should not be used interchangeably.</u> They are:

- 9x19 also called 9mm Parabellum, or 9mm Luger developed in Germany. This is the most widely known and popular of the 9mm cartridges, and is the most widely used cartridge used by military and police. It is also the most powerful of the three. Most modern firearms manufacturers have at least one handgun model chambered for this cartridge. The bullet diameter is .356.
- 9x18 Makarov – This cartridge was designed by Nikolai Makarov after WWII for eastern bloc countries as an alternative to the 9mm Parabellum. It was the largest cartridge that could be used in a direct blowback pistol. The bullet diameter is .363 - .365 so standard 9mm bullets cannot be used. It is more powerful than a .380 auto, but less powerful than a 9mm Parabellum.
- 9x17, sometimes called 9mm short, 9mm Kurz, or better known as the .380 auto was designed by John M. Browning and was introduced in 1908 by Colt. This is often considered the minimum caliber for self-defense and is commonly used in what are sometimes referred to as "pocket pistols." The Walther PPK made famous by James Bond is commonly chambered in .380 auto. The bullet diameter is also .356.

At a local gun show I purchased 500 rounds of Brown Bear 9x18 Makarov jacketed hollow-point ammo manufactured in Russia . This ammo is loaded a little hotter than standard Makarov ammo and I intended to use this ammo for defense. My first trip to the range exposed some problems with the PA-63 and the Brown Bear ammo:

- The gun kicked like a mule! The felt recoil was pretty serious. This was due in part to the lighter aluminum alloy frame and the heavier load.
- The double-action trigger pull was very heavy and stiff. This makes that first shot very inaccurate. A friend once offered to sell me a real Walther PPK but I decided not to purchase it because of the very stiff trigger.
- The sharp edges on the rear of the slide cut the web of my thumb after only five rounds. Ouch!
- The sights were very difficult to pick up and use.
- The bullets of the Brown Bear ammo were not all seated to the same depth which caused feeding problems!

All of these problems can be fixed; can you say "project gun?"

Features, Variants, Implications and Thoughts (10)

Improving the FEG PA63 9x18 Makarov (continued)

Ammunition

First I addressed the bullet seating problem. With my calipers and a box of ammo I found most of the rounds were seated to the same depth. A few rounds were seated out too far which caused the feeding problems. I purchased a set of Lee 9x18 Makarov reloading dies and set the seating die to the shortest round. I ran all of the remaining 500 rounds through this seating die to ensure they were all at the same overall length. This took care of the feeding problems, and should result in better accuracy since consistent bullet seating gives more consistent ignition.

Parts

There are a couple of resources for parts for this little pistol. Springs are available from MidwayUSA or Brownells online. I purchased Makarov recoil springs and Walther PP hammer springs. Wolff makes a recoil spring set for the Makarov with 15#, 17# (factory), 19# and 21# springs. They also make a hammer spring set for the Walther PP with 16#, 17#, 18#, and 19# low power springs. Gun Parts Corp does not have specific parts for the FEG PA63, however, they do carry parts for the Kassnar PMK-.380 which appears to be the same pistol. Reports indicate that most of the parts will work in the PA63. I purchased a spare firing pin, firing pin spring, and ejector/slide lock for my spares kit.

Double-Action Trigger Pull

Trigger pull can often be improved simply by replacing springs. As mentioned before MidwayUSA sells a Walther PP hammer spring pack made by Wolff. It comes with four springs; 16#, 17#, 18#, and 19# weights. When installing lighter springs, I always test reliability of ignition with an empty case primed with a CCI primer. CCI primers are somewhat harder than other primers; if the gun will ignite a CCI primer every time, it will pretty much ignite any other type of primer. I had to disassemble the frame to replace the hammer spring. I followed the NRA takedown guide for the Walther PP. I found the 16# spring wouldn't even dent the primer at all, even with multiple strikes! The 17# spring took 4 or 5 strikes to fire the primer. The 18# spring was erratic; it sometimes took 1, sometimes 2 strikes to fire the primer, but the 19# spring fired the primer every time. So, I left the 19# hammer spring installed, and found the double-action trigger pull was significantly lighter. Unfortunately, my trigger pull gauge doesn't go high enough to measure the pull weight, so this was strictly subjective on my part. However, at a recent range session, a guy in the bay next to me also had a PA-63 in .380 auto, and after trying my pistol, he wanted to know what I did to lighten the trigger pull!

Felt Recoil

This gun has a basic blowback action exactly like the original Walther. Although the 9x18 Makarov is weaker than the 9mm, the pressure is still pretty high for a straight blowback action. To improve reliability, reduce wear and tear on the gun, and reduce felt recoil, I installed a heavier, Wolff 21# Makarov recoil spring (designed for a PA-63) also available from MidwayUSA online. Installing the spring was a simple matter of removing the slide, sliding the original recoil spring off of the barrel, sliding the new spring onto the barrel, and reinstalling the slide. Using the Brown Bear ammo, the gun cycled and fed reliably and felt recoil is somewhat reduced. It required a little more muscle to pull back the slide and charge the first round, but this was an acceptable trade-off to controllable, comfortable shooting.

Features, Variants, Implications and Thoughts (11)

Improving the FEG PA63 9x18 Makarov (continued)

Rounding the Rear Sharp Edges of the Slide

The bottom rear corners of the slide where the vertical back edge meets the bottom rails were left very sharp. Because this gun doesn't have much of a beavertail, recoil would cause the gun to flip up, causing the rear of the gun to depress deeper into the web of my hand so when the slide came back these sharp corners would cut open my hand. I removed the slide from the gun and placed it upside down in a padded vise. Using a high-speed rotary tool with a fine sanding drum I carefully rounded the two sharp corners at the bottom rear of the slide. I then used a Craytex bit to polish the newly rounded edges, then cold-blued the exposed metal. After running 50 rounds through the gun my hand survived with no cuts, scratches, or gouges.

Better Sights

Up to this point, the modifications have been just replacing parts, and performing some minor contouring to reduce the sharp edges. Now it's time to do some real milling. I purchased a set of white-dot fixed sights from Makarov.com (now defunct website). Unfortunately, they no longer sell parts, but similar sights can be purchased directly from Novak Sights. Novak sells fixed sights that fit a Colt Mustang or .380 auto pistols which work great on the PA-63. They also sell a number of front sights with different heights; the height I purchased was .180.

Installing Front Sight

The dovetail of the front sight was 65 degrees x .330 x .05. Using my dovetail calculator I determined that I should use a 0.25 square end bit to mill the pilot slot. I removed the slide from the frame, put painters tape on the sides, and squared it in the machinist's vise on my mill. Using a dial indicator I positioned the center of the bit 0.325" back from the front edge of the slide and 0.05" down from the top and made a pass through the slide. The original front sight was cast into the slide, so I just milled it off. This cut the pilot slot for the dovetail cutter. This pilot slot prevents the dovetail cutter from loading up and possibly breaking. After cutting the pilot slot, I removed the square end bit and installed a 65 degree x .330 high speed steel dovetail cutter available from Brownells online. I positioned the quill of the mill so the bottom of the cutter was resting on the bottom of the pilot slot. I set the RPM to 540, and using a lot of cutting oil, and moving the cross slide very slowly, I cut the dovetail. I removed the slide from the machinist's vise and put it in my bench vise. I used a 65 degree dovetail file to carefully open up the dovetail just until the front sight would start in the slot. I cleaned the bottom of the sight and the dovetail slot with acetone, and then applied a drop of Loctite 609. I used a nylon-tipped punch to drift the sight into the dovetail until it was centered. The sight came with a roll pin to anchor it in place, but since the sight fit tightly in the dovetail, and I used the Loctite 609, the sight was not going to move so I didn't use the roll pin.

Features, Variants, Implications and Thoughts (12)

Improving the FEG PA63 9x18 Makarov (continued)

Installing Rear Sight

The dovetail for the fixed rear sight was 65 degrees x .300 and fit in a Novak-style cut. I again squared the slide in the machinist's vise. I used a .25" square end bit to mill the rear of the slide down to the bottom of the original sight dovetail. Although the original rear sight was supposed to be drift-adjustable for windage, I couldn't get it to move, so I just milled it off. I moved the center of the bit 0.70" in from the rear edge of the slide, and down to a depth of 0.075" below the flat I just milled. I again made one pass through the slide; this cut the pilot slot for the dovetail cutter. Again, after cutting the pilot slot, I removed the square end bit and installed a 65 degree x .300 high speed steel dovetail cutter available from Brownells and cut the rear dovetail as before. I then used the 65-degree dovetail file to final-fit the rear sight. I took the gun to the range and discovered that it was shooting left, but elevation was right on. I drifted the rear sight a bit to the right and tightened the set screw, now it shoots to point of aim.

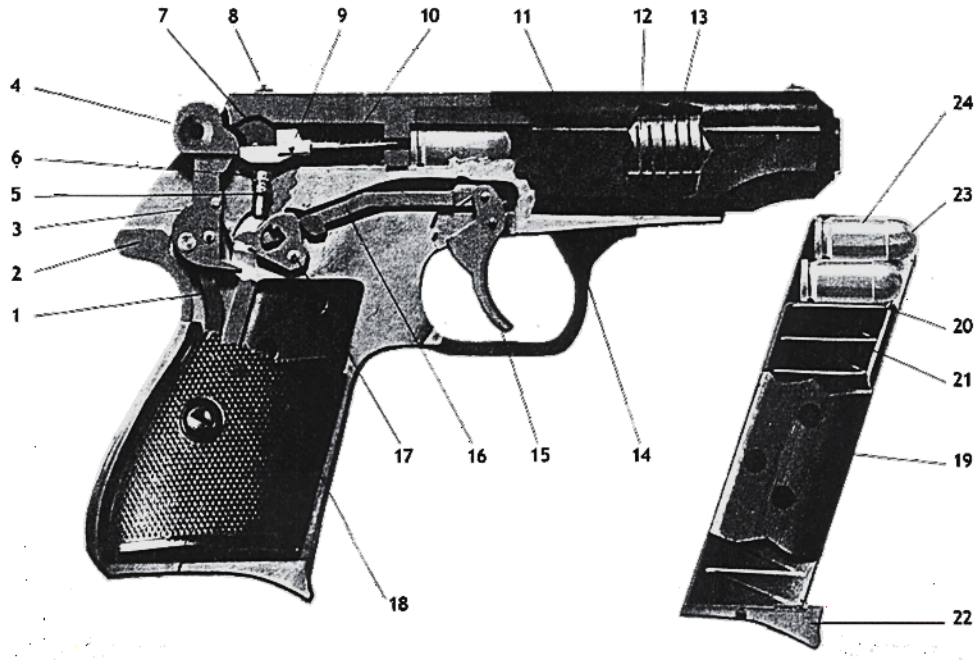
Summary

This little gun is now a pleasure to shoot. The sights are easy to pick up, trigger pull is smooth and much lighter, recoil is less noticeable, and it doesn't cut my hand during recoil. Because of the fixed barrel, this gun is also fairly accurate, and even with fixed sights, shoots to point of aim with the Brown Bear ammo. Someday, if I can find a set of adjustable sights I may install them, but since the gun is hitting to point of aim, I may just leave everything as is. •

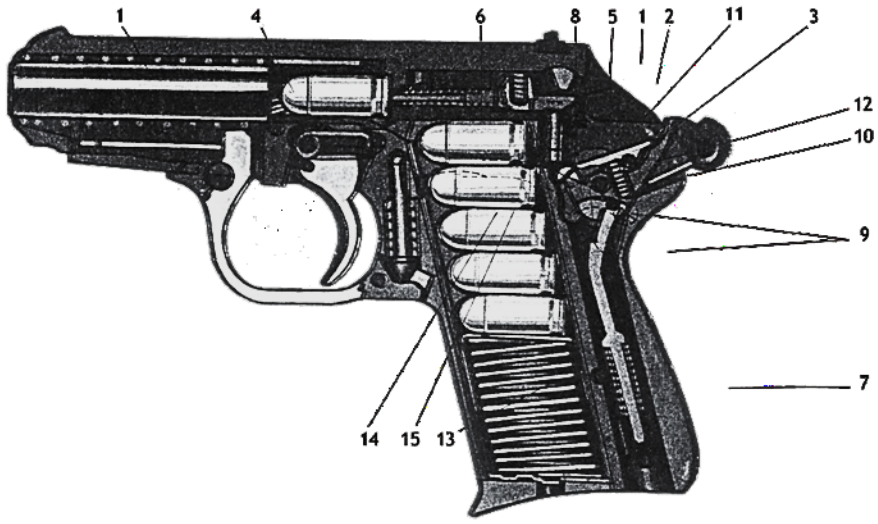
Specifications

Type	Semi-automatic pistol
Place of origin	Hungary
In service	1963-present
Used by	Hungarian Police
Designer	Fegyver és Gépgyár (FÉG)
Designed	Late 1950s
Manufacturer	FÉG
Produced	1963-1990
Variants	FÉG AP7.65, FÉG PMK-380, FÉG AP9, FÉG PPH, …
Weight	595 g (21.0 oz)
Weight when fully loaded	665 g (23.4 oz)
Overall Length	175 mm (6.9 in)
Barrel length	100 mm (3.9 in)
Height	116 mm (4.6 in)
Barrel Rifling	1 in 9.45 inch
Cartridge	9×18mm Makarov, or other depending on variant
Mechanical Action	Straight Blowback
Trigger	Single and Double Action
Muzzle velocity	900 ft/s to 1384 ft/s (274 m/s to 421 m/s)
Effective firing range	50 m (164 ft)
Feed system	7-round detachable box magazine
Sights	Fixed, blade front, notch rear
Slide composition	Steel
Frame composition	Aluminum-Titanium Alloy
Barrel	Fixed
Grips	Black Plastic/Polymer

Full Assembly Components' Chart

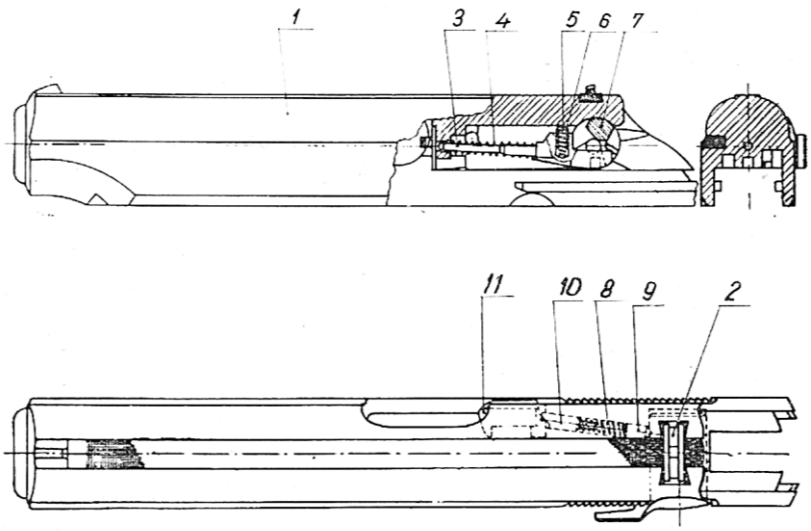


1. Hammer sear
2. Receiver
3. Hammer strut
4. Hammer
5. Trigger bar
6. Trigger bar spring
7. Safety lever
8. Notch
9. Firing pin
10. Firing pin spring
11. Slide
12. Barrel
13. Recoil spring
14. Trigger guard
15. Trigger
16. Trigger sear
17. Sear
18. Pistol grip
19. Magazine body
20. Magazine follower
21. Magazine spring
22. Magazine bottom plate
23. Bullet
24. Cartridge case



1. Foresight and notch
2. Groove of the notch
3. Uncocking sear
4. Recoil spring
5. Groove of the firing pin
6. Head of the firing pin
7. Sear spring
8. Firing spring
9. Trigger sear and hammer surfaces
10. Hammer strut
11. Safety lever
12. Pivot of the hammer strut
13. Follower spring
14. Magazine catch
15. Port of pistol grip

Slide Assembly Chart



1. Slide
2. Rear Sight (Notched)
3. Firing Pin Spring
4. Firing Pin
5. Trigger Bar Spring
6. Trigger Bar
7. Safety Lever
8. Extractor Sear Spring
9. **?**
10. Extractor Sear
11. Extractor

Components Large Diagram

1. Slide
2. Recoil Spring
3. Barrel
4. Trigger Well (disassembly catch)
5. Grip Screw
6. Grip, Left
7. Grip, Right
8. Safety Lever
9. Ejector
10. Hammer
11. Trigger
12. Frame (Lower Receiver)
13. Magazine
14. Magazine Floor Plate

Pistol Operation

Firing the Pistol

Safety Note: Before operating your FEG PA-63 pistol, read and observe all safety instructions in this manual. Always exercise great care and proper safety procedures when handling this firearm and any other firearm.

1. Load the magazine until full. * Use only “9x18mm Mak” ammunition cartridges. See the page titled “9x18mm Makarov Ammunition” in this document for specifications and examples of acceptable ammunition. Do not attempt to load or fire other types of ammunition because they will NOT work and may cause severe injury to you or others and/or damage to your firearm.

2. With the slide forward and the safety disengaged, insert the loaded magazine into the magazine well completely, verifying the magazine catch is fully engaged.

3. Point the muzzle in a safe direction.

4. Grasp the slide at the milled grooves and pull the slide completely to the rear.

5. Release the slide, allowing it to move forward, chambering a round. Verify the slide is fully forward.

6. The pistol is ready to fire (do NOT pull the trigger yet).

Note: If the pistol is not to be fired immediately, refer to pages titled “Pistol Operation: Carrying the pistol with a live round in the chamber.”

7. Aligning the front and rear sights in a normal sight picture on the desired target, slowly squeeze the trigger to fire one round in the weapon.

8. When the last round has been fired, the slide will be held open by the slide stop lever.

9. To close the slide, remove the magazine. Verify the chamber is clear, then firmly grasp the slide by the milled grooves and pull back slightly. The slide stop will disengage.

10. Ease the slide forward

Pistol Operation

Carrying the PA-63 pistol with a live round in the chamber:

Safety Note: The pistol must be clean and in proper working order without malfunction or operational blockage in the moving parts of the pistol before carrying the pistol with a live round in its chamber.

Follow steps 1 through 5 in the previous page, and then continue to do the following steps:

6. Keeping all fingers away from the trigger, point the pistol in a safe direction, and engage the safety downward, dropping the hammer, and blocking the firing pin from impact by the hammer.

7. The pistol may be placed in a properly designed holster for carry.

8. If a cartridge is in the chamber, the ejector (found on the right side of the slide) will protrude out of the slide and to the right just a little bit. Note: A misfire or malfunction may not make this indicator show itself.

Safety Note: This indication DOES NOT substitute the practice of visually verifying that the chamber is loaded or not loaded.

Pistol Operation

Unloading the PA-63 Pistol, having a live round in the chamber:

Safety Note: While unloading or inspecting the pistol, keep all fingers away from the trigger.

1. Place the safety lever in the ON position by rotating the safety lever upward. The safety lever will cover the red dot which is on the left side of the slide. Remember: red is dead!

2. Remove the magazine by pressing the magazine-release lever on the bottom of the hand grip.

3. Grasp the slide by the milled grooves and quickly pull the slide completely rearward in one smooth motion.

4. The loaded cartridge should be ejected clear of the pistol.

5. Visually verify the chamber is empty and the cartridge has been ejected clear of the pistol.

6. Ease the slide forward to a closed position.

7. Reinsert the magazine

Pistol Operation

Malfunctions and Stoppages

Always keep your pistol clean and properly lubricated. The majority of malfunctions experienced when firing the pistol will be the result of faulty ammunition, weak or damaged recoil spring (inside the pistol), and/or a damaged or defective magazine. If the bullet can be removed with a cleaning rod, clean any unburned powder grains from the bore, chamber, and mechanism before resuming shooting. If the bullet cannot be dislodged by tapping it with a cleaning rod, take the firearm to a gunsmith. Dirt, corrosion, or other foreign matter on a cartridge can impede complete chambering and may cause the cartridge case to burst upon firing. The same is true of cartridges which are damaged or deformed or of the wrong size. Note: using ammunition with lacquer coated cases (such as "Brown Bear") may result in malfunctions due to the possibility of the lacquer melting in or around the pistol's chamber.

Warning: Concerning ammunition marked "+P" or "+P+" or high-pressure: Recently there have been many developments by ammunition manufacturers and re-loaders, but not all of them are good. It seems some ammunition manufacturers and re-loaders are in a horsepower race to see who can develop the most case pressure and muzzle velocity with little regard for practicality or safety. Some of these loads exceed common sense, are likely dangerous and can virtually tear metal apart. Such ammunition generates pressures significantly in excess of the pressures associated with standard ammunition. Such pressures may affect the useful life of the firearm or exceed the margin of safety built into many firearms. There is little legitimate documentation on whether +P ammunition should be fired in the pistol, or how well the pistol handles this ammunition. Unless you really need +P ammunition, do not use it.

To prevent operation problems, exercise the following precautions:

1) Carefully inspect the pistol and magazine prior to operation to assure proper condition, cleanliness and lubrication.

2) Use only clean new ammunition of the correct type, caliber and loading. Do not use hand loaded or reloaded ammunition.

3) Should any parts experience noticeable wear or break, have them repaired or replaced promptly. Should problems occur, the following table will assist in diagnosing and correcting the disorder.

Maintenance

Pistol Disassembly (field strip, takedown)

fig. 1

First, point the muzzle in a safe direction and engage the safety to its “SAFE/ON” position. Remove the magazine and look to ensure that there is no cartridge left in the chamber and extract the cartridge if there is (fig. 1). Careful NOT to engage the hammer onto a live cartridge.

fig. 2

While holding the pistol by the grips in the right hand, place the index finger on the right side of the trigger guard. With the left hand, pull the first end of the trigger guard downward out of the frame and apply side pressure to this part with the index finger of the right hand to retain it outside of the receiver (fig 2).

fig. 3

Holding the pistol with the right hand, grasp the grooved surfaces at the rear of the slide with the left hand and pull the slide fully to the rear. Lift the rear end of the slide assembly out of the receiver rails (fig 3).

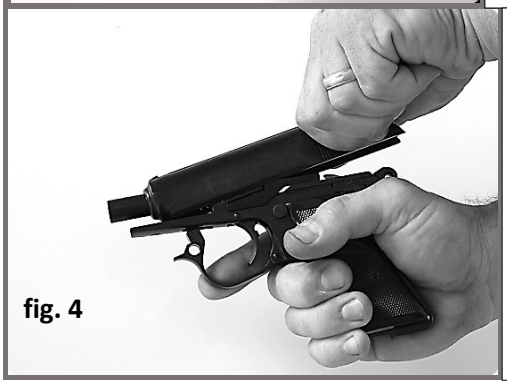


fig. 4

The slide assembly may then be drawn rearward and removed from the barrel (fig. 4). The recoil spring may be removed by pulling it off the front of the barrel. No further disassembly is required or recommended for cleaning purposes. Further dismantling is a job for qualified gunsmiths and armorers only.

Maintenance

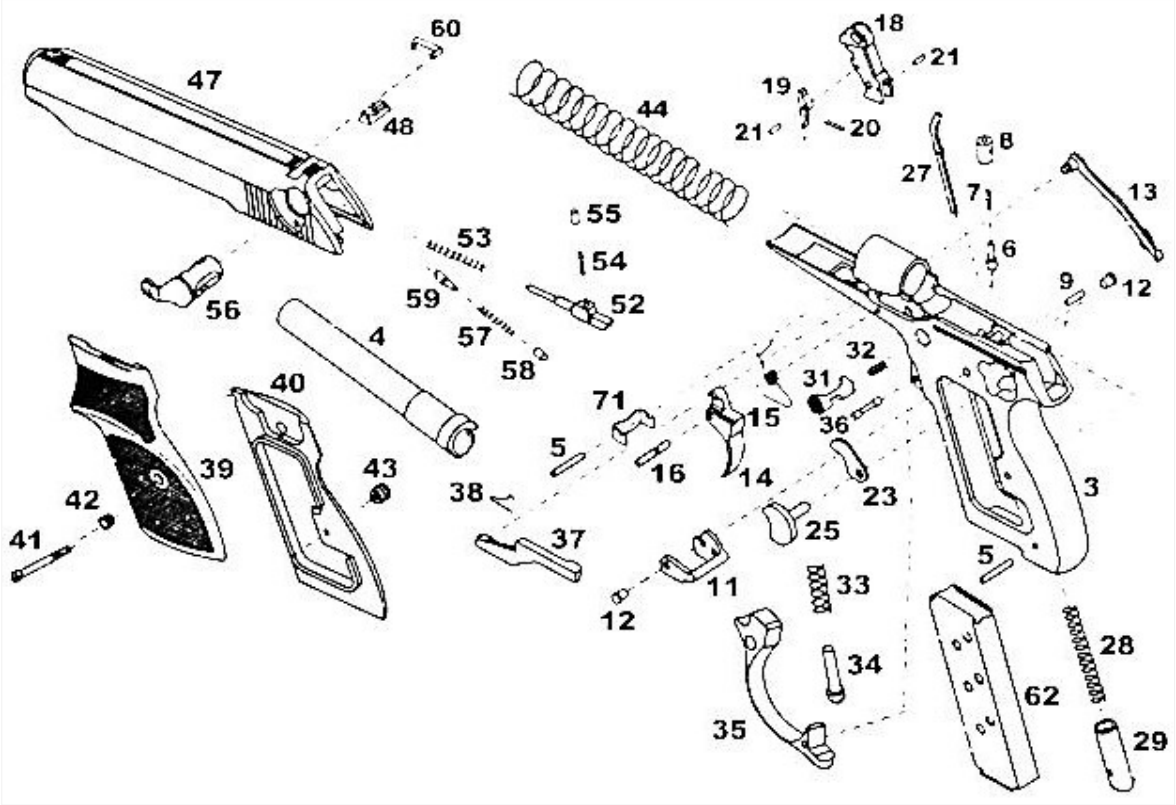
Cleaning and Oiling

To ensure proper operation of the firearm, it is necessary to keep the firearm's internal components clean and lubricated. Clean the pistol after every shooting session. After completing the disassembly procedure, the firearm is now ready for cleaning. Normal cleaning is easily accomplished by using common gun cleaning pads (usually made of cotton), a toothbrush or similar small brush and cleaning fluids such as gun oil or CLP, either liquid or aerosol, to remove any dirt and gun powder residue. Do not use any water-based household cleaning products such as detergents; they can cause corrosion. Do not use solvents or acid based cleaners; these can cause permanent damage to part of all of the firearm. Swab the bore with cleaning solvent, followed by clean dry patches until the patches emerge clean. Remove the slide from the frame and apply a light coat of gun oil to all internal surfaces, excluding the firing pin hole. This allows a smoother operation while protecting the firearm from corrosion. Clean the gun powder residue from the top of the receiver area and apply a light coat of oil to the top of the receiver, hammer area and bottom of the slide assembly. Also, apply a light coat of oil to the inside of the feed lip area of the magazine, allowing oil to coat the inside of the magazine body. Any further disassembly is not necessary under normal usage. The magazine can also be disassembled for thorough cleaning but this is usually not needed or recommended. Reassemble the pistol, insert the magazine (empty) and place the hammer fully forward by engaging the safety. Place the pistol in storage in a clean, dry place away from moisture, detergents and chemicals.

Parts Diagram and List, Exploded View

Work in progress. Need assistance to name parts that are not named, and correct misnamed parts.

Please send me email at petesimon(at)yahoo.com or reply to my message-post in a forum. Thanks.



1. (none)	22.	43. grips' screw nut
2. (none)	23.	44. recoil (main) spring
3. frame	24.	45.
4. barrel	25.	46.
5. hammer spring retainer pin	26.	47.
6.	27. hammer strut (sear)	48. rear sight
7.	28. hammer spring	49.
8.	29. hammer spring retainer	50.
9.	30.	51.
10.	31.	52. firing pin
11.	32.	53. firing pin spring
12.	33.	54.
13. sear bar	34. trigger guard pin	55.
14. trigger	35. trigger guard	56. safety lever (switch)
15. trigger spring	36. trigger guard spring	57. extractor spring
16. trigger retaining pin	37. slide-stop lever	58. extractor spring retainer
17.	38. slide-stop spring	59. extractor plunger
18. hammer	39. left grip	60. extractor
19.	40. right grip	62. magazine (7 rds)
20.	41. grips' screw	
21. hammer pivot pin	42. grips' screw washer (bushing)	

Alternate, Photographic Parts Diagram and List

Work in progress. Need assistance to name parts that are not named, and correct misnamed parts.

Please send me email at petesimon(at)yahoo.com or reply to my message-post in a forum. Thanks.

1. frame
2. slide
3. recoil (main) spring
4. barrel
5. extractor plunger
6. extractor
7. firing pin
7A. firing pin spring
8. firing pin retractor spring
9. firing pin retractor
10.
11.
12. magazine (7 rds)
13. maintenance tool/rod
14. hammer spring retainer pin
15. hammer spring retainer
16. grips
17. grips' screw
18. hammer spring
19. hammer sear
20. hammer
21.
22.
23.
24.
25. sear bar
26.
27. trigger guard spring
28. trigger spring
29.
30. trigger
31. trigger guard
31A. trigger guard retaining pin
32.
33.
34. safety engagement
35.
36.
37.
38. safety lever (switch)
39. slide-stop spring
40. slide-stop lever

9x18mm Makarov Ammunition

Introduction

The 9×18mm Makarov cartridge, not to be confused with a Makarov PM (pistol) is designated 9mm Makarov by the C.I.P. (French: Commission Internationale Permanente) and often called 9×18mm PM is a Russian pistol and submachine gun cartridge. During the latter half of the 20th Century it was a standard military pistol cartridge of the Soviet Union and the Eastern Bloc, analogous to the 9×19mm Parabellum in NATO and Western military use.

History

During the Second World War and the early Cold War, the 7.62×25mm Tokarev was the standard automatic pistol round for the Soviet Union and its satellites in Eastern Europe. This ammunition is still in use by many of these countries today. During the war the Red Army had found a few shortcomings of its 7.62mm TT-33 pistol, one of which was a tendency to inadvertently drop its magazine while in operation. The army wanted something that was lighter, with a heel release instead of a button and different ammunition. A direct blowback design was chosen for the pistol's operation, since it would be quick and cheap to manufacture, as well as accurate, due to the fixed-barrel design allowed by direct blowback operation. The 9×18mm Makarov round was designed by B.V. Semin in 1946. It was intended to be a relatively powerful round with modest bolt thrust that could function safely in a simple or direct blowback pistol. It was based on the 9×18mm Ultra cartridge which was developed in 1936 by Gustav Genschow & Co. for the German Luftwaffe, as a more powerful alternative to the 9×17mm used in the Walther PP, also a simple blowback design pistol. Nikolay Fyodorovich Makarov went on to design the Makarov PM pistol based on the 9×18mm Makarov round in 1948. The Soviet military required that their ammunition should be incompatible with NATO firearms, so that in the event of armed conflict a foreign power would be unable to use captured Soviet ammunition supplies. Note that 9×18mm Makarov ammunition uses a larger diameter bullet than other common 9 mm rounds, measuring 9.27 mm (0.365 in), compared with 9.017 mm (0.355 in) for 9mm Parabellum. After its introduction in 1951, the 9×18mm Makarov round spread throughout the militaries of Eastern Bloc nations.

Dimensions

The 9×18mm Makarov has 0.83 ml (12.8 grains H2O) cartridge case capacity. All sizes in millimeters (mm). The common rifling twist rate for this cartridge is 1 in 240 mm (9.45 in), 4 grooves, ø lands = 9.00 mm, ø grooves = 9.27 mm, land width = 4.50 mm and the primer type is small pistol. According to the official C.I.P. (Commission Internationale Permanente Pour L'Epreuve Des Armes A Feu Portatives) rulings the 9×18mm Makarov case can handle up to 160.00 MPa (23,206 psi) piezo pressure. In C.I.P. regulated countries every pistol cartridge combo has to be proofed at 130% of this maximum C.I.P. pressure to certify for sale to consumers. The 9×18mm Makarov is ballistically inferior to the 9×19mm Parabellum cartridge. While there are no official SAAMI pressure specs for the 9×18mm Makarov cartridge, tests indicate that surplus ammunition develop pressures in the mid 20,000 psi, significantly less than the 35,000 psi or more generated by 9mm Parabellum loads.[3] As such it is designed to be used in low-powered blowback semiautomatics, much like the .380 ACP cartridge, rather than locked-breech designs encountered, but not always required, for higher pressure cartridges like the 9×19mm Parabellum.

9x18mm Makarov Ammunition

21st century Russian service loads

The 9×18mm Makarov rounds in use with the Armed Forces of the Russian Federation are designed for pistols and submachine guns. In 2003, there are several variants of 9×18mm Makarov produced for various purposes. All use clad metal as case material. The 57-N-181S cartridge is loaded with a steel-core bullet and is designed to kill personnel at a range of up to 50 m (55 yd). The bullet has a clad metal envelope totally covering the core. The bullet's nose is spherical with no distinguishing color of the tip. It can penetrate a 1.3 mm thick St3 steel plate or 5 mm ordinary steel plate at 20 m (22 yd). The RG028 cartridge is loaded with an enhanced penetration bullet and is designed to kill personnel wearing body armor. The bullet has a core of hardened steel. The SP-7 cartridge is loaded with an enhanced stopping effect bullet and is designed to defeat live targets. The bullet has a black tip. The SP-8 cartridge is loaded with a low-penetration bullet and is designed to engage personnel.

Cartridge designation[5]	**57-N-181S**	**RG028**	**SP-7**	**SP-8**
Cartridge weight	10 g (154 gr)	11 g (170 gr)	8 g (123 gr)	8.5 g (131 gr)
Bullet weight	6 g (92.6 gr)	6 g (92.6 gr)	6 g (92.6 gr)	5 g (77.2 gr)
Muzzle velocity	298 m/s (978 ft/s)	325 m/s (1,066 ft/s)	420 m/s (1,378 ft/s)	250 m/s (820 ft/s)
Muzzle energy	251 J (185 ft·lbf)	317 J (234 ft·lbf)	417 J (308 ft·lbf)	156 J (115 ft·lbf)
Accuracy of fire at 25 m (27 yd) (R_{50})	32 mm (1.3 in)	32 mm (1.3 in)	-	32 mm (1.3 in)

Specifications of common loads	
Case type	Rimless, tapered
Bullet diameter	9.27 mm (0.365 in)
Neck diameter	9.91 mm (0.390 in)
Base diameter	9.95 mm (0.392 in)
Rim diameter	9.95 mm (0.392 in)
Rim thickness	1.25 mm (0.049 in)
Case length	18.10 mm (0.713 in)
Overall length	25.00 mm (0.984 in)
Case capacity	0.83 cm^3 (12.8 gr H_2O)
Rifling twist	240.00 (1 in 9.45 in)
Primer type	Berdan or Boxer
Maximum pressure	160.00 MPa (23,206 psi)

9x18mm Makarov Ammunition

***The 9×18 Makarov Ammunition for Self Defense Guide,* by Richard Johnson of the GunsHolstersAndGear blog website**

If you are looking for 9×18 Makarov ammunition for self-defense, you may have had a hard time finding a load that meets your needs. Unlike the .380 ACP or the 9mm Parabellum (aka Luger or 9×19), the Makarov round does not enjoy a wide range of commercially loaded hollow point ammo.

That does not mean there are no good choices for Makarov self-defense ammo – just fewer choices when compared to more popular cartridges. As an owner of an East German Makarov pistol, I enjoy shooting and studying these pistols. Finding good self-defense ammo for them has been difficult, but there are several good loads worthy of consideration. The following is a list of personal protection loads that are currently available. There are a few things to keep in mind about the 9×18 Makarov cartridge when talking about ammo for personal protection. Many of the pistols chambered for the 9×18 Makarov cartridge are surplus guns, are of unknown quality and are simple blowback designs. Some guns may be well made and cared for, while others may have been poorly made and never maintained. So, many manufacturers are careful not to load 9mm Makarov ammo too hot.

9x18 Makarov Ammunition

This Glaser Blue is one example of 9×18 Makarov self-defense ammunition being made today.

When dealing with lower velocity rounds, such as the Makarov cartridge, reliable expansion can be a problem. All other things being equal, a hollow-point will be more likely to expand the faster it is driven. Many Makarov loads are rated at about 1000 fps, which is a marginal velocity for ensuring expansion with a relatively narrow bullet diameter. Bullet design can go a long way to improving expansion of a bullet at lower velocity, but considering the Makarov cartridge makes up a relatively small portion of the self-defense market, most top end bullet designs never make their way to the 9×18. Since some consider bullet expansion an iffy proposition in the 9×18 Makarov ammunition, many people will prefer to carry a FMJ, or ball, round. These non-expanding bullets are normally around 95 grains and have velocities of about 1000 – 1050 fps. They will not expand and produce a wide wound cavity, but they are more likely to penetrate deeply. Except for one, all of the following loads use hollow point bullets. Some attempt to overcome the expansion problem with higher speeds, while at least one load uses a premium bullet design. It is up to you to determine what will work best for your needs.

Barnaul

In the Silver Bear line, Barnaul offers a 94 grain JHP for the 9×18 Makarov. This self-defense ammo is in a steel case that is plated with zinc, which gives it the appearance of being nickel-plated brass. The load is rated at 1014 fps. My experiences with Barnaul in the past have been mostly positive. The ammunition tends to be cheaper than many of the alternatives in a caliber. The Silver Bear would not be my first choice for 9×18 Makarov self-defense ammo, but it would probably work.

9x18mm Makarov Ammunition

The 9×18 Makarov Ammunition for Self Defense Guide **(continued)**

Buffalo Bore

Buffalo Bore loads two different 9×18 Makarov ammo loads: one is a 95 grain JHP that is rated at 1125 fps, and the other is a 115 grain hard cast flat point. The bullet used in the JHP load appears to be the XTP bullet from Hornady. As one of the only hollow point bullet components widely available for the 9×18 Makarov caliber, several manufacturers use (or have used) the bullet to make self-defense ammo.
The second load is not a hollow point, but is marketed as a self-defense load. It is unusual in this caliber for two main reasons: the bullet's weight and the bullet's construction. The bullet weighs 115 grains, which is heavy for Makarov loads. Most 9×18 bullets are 90 to 95 grains in weight. The bullets are also hard cast flat-points, perhaps the only ones being loaded for 9×18 Makarov ammunition. For the reasons mentioned in the introduction, some people might want to choose a deep penetrating, non-expanding bullet for self-defense. For that precise reason, the hard cast load makes sense. The heavier weight will allow for more reliable, deeper penetration – especially when dealing with heavy clothing. It would not be my first choice for personal protection, but it does make a lot of sense for some people. The Ammo Test channel on YouTube ran several 9×18 Makarov ammo loads across a chronograph, one of which was the Buffalo Bore JHP load. As you can see in the video below, the Buffalo Bore averaged 1234 fps on four shots from a CZ 82 pistol. This is well above the 1125 fps published by Buffalo Bore. The company's own testing with a CZ 82 showed a velocity of 1192 fps. The hard cast load is rated by Buffalo Bore at 1000 fps. I could not find any independent testing, but Buffalo Bore states they obtained 1057 with this load in a CZ 82. In an East German Makarov pistol, Buffalo Bore got 1014 fps.

Corbon

Corbon offers three loads for the 9×18 Makarov that are suitable for self-defense: a 70 grain Pow'RBall, a 75 grain Glaser Blue and a 75 grain Glaser Silver. Corbon previously offered a standard JHP load (using the Hornady XTP bullet if I recall correctly,) but it is no longer offered. The Pow'RBall load uses a polymer ball in a wide hollow-point cavity to provide for reliable expansion. Combined with a published velocity of 1250 fps, this lightweight load is said to provide impressive expansion. The downside to this load is that it is a special order only item. That means you have to contact Corbon and get a price for them to start up an assembly line. Both 9×18 Makarov loads use a 75 grain projectile and are rated at 1150 fps. The difference in the two self-defense loads is in the projectile composition. Both rounds use a compressed core of bird shot that is designed to immediately burst forward into a target on impact. Think of a small, point-blank shotgun blast. Glaser Blue uses #12 shot, while the Silver version uses #6 shot. Silver will penetrate more deeply that blue.

Hornady

Two different loads are offered by Hornady Manufacturing for the 9mm Makarov. One uses the same 95 grain XTP bullet that several other manufacturers use in their ammunition offerings. The second is a newer addition to the company's Critical Defense line of ammo. The XTP load is rated at 1000 fps, which is much milder than some of the other companies using the same bullet in their loads. Keep in mind, however, that many pistols chambered for the 9×18 Makarov ammo are surplus guns that may not hold up to the higher chamber pressures found in other loads. If you have any doubt about the ability of your pistol to handle the hotter loads, go for a mild load like this one. The 9×18 Makarov Critical Defense load was introduced in late 2010, and has become a popular choice with many people carrying Makarov and CZ 82 handguns. It uses very popular Hornady FTX bullet, which is a polymer tipped hollow-point.

***The 9×18 Makarov Ammunition for Self Defense Guide* (continued)**

These rounds have shown very consistent expansion in ballistic gel. They are also rated at 1000 fps and should work fine in all pistols chambered for the 9×18.

Prvi Partizan

A Serbian company, Prvi Partizan has been making ammo for more than 80 years. I've found the quality of their ammo to be good, while keeping the ammo reasonably priced.

Prvi Partizan offers one entry for 9mm Makarov self-defense ammo, a 95 grain JHP rated at 310 meters/second, which works out to be about 1017 fps. The load uses a brass case and is boxer primed. Even though the ammunition is made in Serbia, it is commonly available in other areas of the world, including the United States.

Underwood Ammo

I've not shot Underwood Ammo products before, so I cannot speak to the quality of their loads. However, checking a number of the forums, the customer service has gotten positive reviews and the published velocities are in the range of what customers are seeing on the range. (Keep in mind that velocity can vary wildly depending on gun, barrel length, etc.). Underwood Ammo's 9×18 Makarov load uses a 95 grain Hornady XTP bullet, same as the Hornady XTP load above. Underwood pushes the ammo to 1150 fps making it one of the faster rounds available for the 9mm Makarov, in line with the Buffalo Bore listed above. On the Mrgunsngear YouTube channel, they tested this load in a CZ 82 pistol. With five shots, this 9×18 load averaged 1198 fps at about seven feet. At nearly 1200 FPS, the Underwood Ammo load pushes the 9×18 Makarov into the realm of serious 9×19 loads. If you watched the video in the Double Tap section above, you also saw the Underwood Ammo Makarov load fired there. In that test, velocities were around 1240 fps with a CZ 82.

Wrap Up

Shooters have a decent selection of 9×18 Makarov ammunition for self-defense. The choices are somewhat limited, but there are several loads that I would feel comfortable relying on in my own Mak. Without doing any additional testing, I would likely carry either the Hornady Critical Defense or the Buffalo Bore hollow-point. The two loads take slightly different approaches to the problem of stopping an attacker, but both are credible. If there is any question about the strength of your pistol, do not go for the higher velocity loads and stick to the more standard loads. For anyone in this category, I would recommend taking a look at the Critical Defense over the others. Ultimately, find a load that works reliably in your pistol and practice. If you know of other 9×18 Makarov ammunition loads that are good for self-defense, please list them in the comment section below. •

9x18mm Makarov Ammunition

Cartridges' Graphic Images

94-95 grain (gr) FMJ,

Cross-section view,

115 gr hollow-point,

54 gr Armor Piercing (steel core)

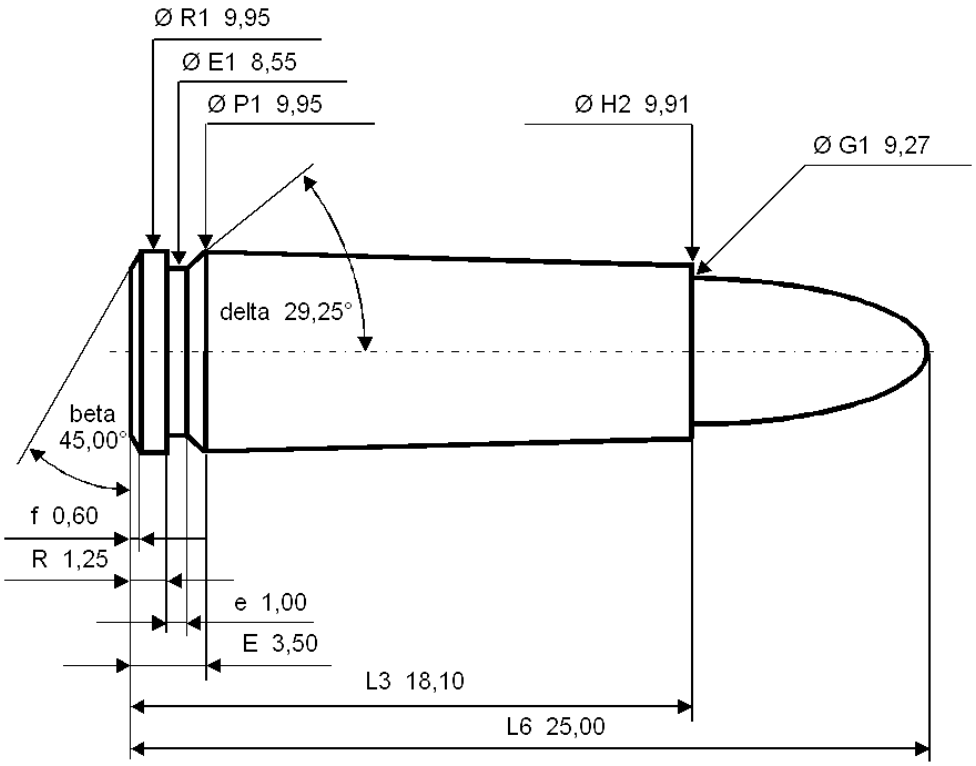
100 or 109 gr FMJ

120 gr hollow-point

95 gr XTP hollow-point

115 gr hard-cast flat-point "+P"

Cartridge Detail Diagram



Note: Measurements are in millimeters (mm). The dimensions of one "9x18 Mak" cartridge are unique. The case is 18.10 mm long and the bullet diameter is 9.27 mm. Consequently, this cartridge is incompatible with many well-known firearms around the world, certainly those firearms not designated for use with 9x18mm cartridges. •

Appendix

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