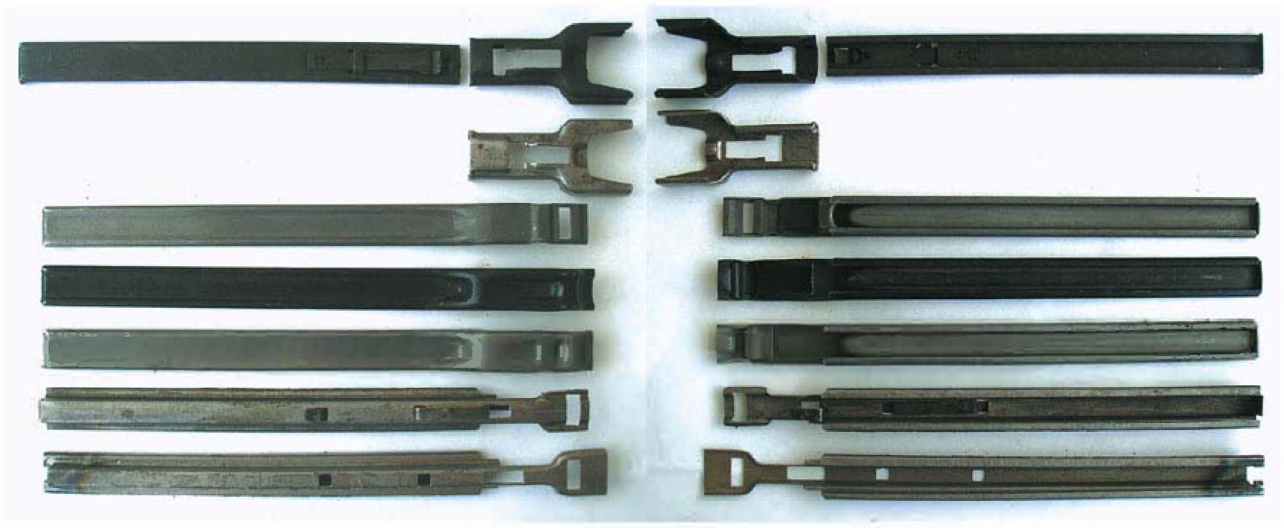
08/20/2014

5.45x39. Part 2 difficult destiny

Year 1991 th was a turning point in the history of 5.45x39 cartridge. After this milestone dissemination and practical application of 5.45-mm ammunition automata narrowed to the framework of post-Soviet Commonwealth of Independent States (CIS), and work on the development and improvement of ammunition with varying degrees of intensity made only a few former Soviet republics - Russia, Ukraine and while - in Kyrgyzstan.

▲ Варианты магазинного питания автоматов и пулеметов: 1 – стальной опытный магазин на 60 патронов; 2, 3 – пластиковые магазины на 30 патронов; 4, 5 – пластиковые магазины на 45 патронов

The Soviet government rather late decided to adopting the countries of the Warsaw Pact weapons under 5,45 mm. With an even greater delay and reluctantly country ATS have adopted their armies and the munitions developed under a Soviet system of small arms, and only some of them have created their own models of weapons in this caliber. And not having time to win popularity among the neighbors of the USSR, the Soviet 5.45x39 caliber actually lost its relevance in the late 1980s. in connection with the reorientation of many Eastern European countries towards the Western model of development of the state, including in the military field. In the early 1990s, many countries ATS abandoned rifle Soviet-style systems and began to re-sample NATOvskogo standard - caliber 9x19, 5,56h45 and 7,62h51. By the mid-2000s, not only of the countries of the former Warsaw Pact, but also some former Soviet republics formally entered into a military alliance, NATO finally took the path of "de-Sovietization" of its small arms. However, a number of reasons political and economic 5.45x39 still remains the main machine-gun ammunition many post-Soviet states. Especially as a resource for its modernization is far from exhausted, and it is unlikely in the near future will replace 5,45- mm cartridge any other similar caliber.



▲ Обоймы быстрой зарядки для 5,45-мм автоматных патронов: *вверху* – штатная обойма 6Ю20.6 и переходник для магазина 6Ю20.7; *внизу* – опытный переходник и опытные обоймы «безпереходникового» типа

Russia

At the beginning of the 1990s. in connection with the general political and economic crisis in the former Soviet Union working in Russia to create new versions of 5.45x39 it was quite sluggish.

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Some recovery was observed only around the cartridge with enhanced penetration bullet 7H10, as its production in the USSR was established only at the Lugansk Machine-Building Plant (№ 270), who stayed in Ukraine. Almost immediately after the collapse of the Soviet Union's technical documentation 7N10 cartridge with a bullet was removed from Lugansk and transferred to Barnaul Machine-Building Plant (№ 17), which in 1992 started its mass production. Since that time the development cartridge 7N10 went in two directions. 7N10, developed in Lugansk, was retained as part of the same, the "Soviet", construction, and production was established in 1992. At the same time Barnaul specialists began work on its own modernization in order to increase penetration bullets. Since 1994, the plant started production of Barnaul cartridges with enhanced penetration modernized bullets. A distinguishing feature of the new bullet was a slight increase in weight (from 3.60 g to 3.62 g) by filling the cavity in the lead processing head. Also in the new cartridge has been increased weight of the powder charge from 1.44 g to 1.46 g, which together resulted in an increase in the level of penetration of the steel sheet 16 mm mild steel St.3kp normal 100 m up to 60%. Patron received index Grau 7N10M and symbol 5.45 PP n. Later, in connection with the removal of production of the previous model 7N10 and release only a modernized version of the cartridge, it was left to the former index - 7N10, without the letter M. A distinctive color cartridge 7N10 Barnaul modernized production is a drawing of purple lacquer sealer at the junction of the bullet with the sleeve.

After a brief lull since the mid-1990s, Russia has once again begin the modernization of 5.45x39. Continuous quality improvement of personal protective equipment (NIB) is forcing designers-patronschikov seek new ways to increase the penetration of bullets of 5.45 mm. By 1998, at the Barnaul Machine-Tool Plant led VN Dvoryaninova developed and adopted on arms cartridge with armor-piercing bullet BP (symbol 5,45 BP G, bullet weight - 3.69 g), the index of Grau 7N22. The design of the bullets entered the spiky armor-piercing core of high-grade tool steel U12A, which allows punching in the 100m normal for 20 mm steel sheet brand St.3kp. The distinctive color of the cartridge are the color of the top of the black bullets and causing all kinds of package black stripes. Also in 1998, the weapons taken another option piercing bullets - BS in special armor-piercing core of tungsten-cobalt alloy brand VK8. The bullet weighing 4.1 g consists of a bimetallic sheath cermet core leaden shirt and a process cavity in the bullet head. The design allows the bullet penetration 5 mm of steel armor plate mark 2n at 90 ° at a distance of 350 m. The bullet BS received index and the symbol 7N24 5,45 BS n. It is noteworthy that in the early period of the production of the distinctive color of the cartridge several times arbitrarily - depending on the manufacturer - has changed. After adopting the tip of the bullet cartridge 7N24 stained black, similar to bullet cartridge 7N22. At the beginning of 2000-x on the Amur munitions factory produces ammunition black lacquer painting at the junction of the liner with a bullet and primer. Finally, now adopted by coloring the cartridge, similarly removed from production 7N6 - red lacquer-encapsulation at the junction of the liner with a bullet and primer. On the packaging containers, except for a symbol of the cartridge, no distinctive color bands are not applied.

By the mid-2000s have undergone minor upgrades and ammunition with tracer bullets. The modernized 5.45 TM gauss slightly modified form of the bottom of the lead core, and uses a new type of tracer composition with the removal of the tracing range of 50-100 meters from the muzzle of the gun, which provides guaranteed tracing distance up to 850 m. The new cartridge was adopted Index Grau - 7T3M.

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▲В конце 1980-х гг. под кодовым названием «Ластик» проводились работы по созданию автоматных патронов с пулями нелетального действия, однако в связи со слишком высокой пробивной способностью пластиковых пуль работы пришлось свернуть

New old development since the adoption of the Kalashnikov assault rifle in the Soviet Army did not stop and planned initiatives of the various Bureau to further improve and modernize the system of the shooting. Not all of the subsequently received experimental development into practice. But the experience of the designers in the development of experimental models, often served as a basis for later developments. For example, an experienced machine Yuri Alexandrov AL-7 with a balanced automatics, developed in the early 1970s., Became the basis for the creation in the late 1990s at the Izhevsk Machine-Building Plant AK-107 cal. And 5.45x39 AK-108 cal. 5,56h45 NATO to participate in the inter-sectoral national contest "Abakan" to create a new machine in excess of the combat effectiveness of staffing AK-74 by 1.5-2 times. The competition of the Ministry of Defence "Modern", announced in 1973, work began on the creation of a small-sized machine for the crews of armored vehicles. As is known, the contest ended adopting in 1979 AKS74U machine. However, except for "miniaturization" of regular machine during the competition "Modern" was worked out a number of special technical solutions. For example, the designer of EF Dragoons on the instructions of SIC ITOCHU has developed a version of MASH MA compact machine with the maximum number of parts made of plastic (polyamide high), including receiver, store and handle. In future studies for the creation of small machines were used in the 1990-2000-ies. when you create a submachine gun "Vityaz" and "Buffalo" for the Interior Ministry and the FSB, as well as other types of small arms.

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▲ Облегченный алюминиевый магазин к опытному автомату АЛ-7 кал. 5,45х39 *(слева)* и магазин из полиамида емкостью 60 патронов кал. 5,45х39 *(справа)*, разработанный в инициативном порядке на Ижмаше в конце 1990-х гг. Небольшие партии таких магазинов поставлялись в МВД РФ

A completely new type of ammunition 5.45 mm in the recent history of the steel ammunition cartridges with low rebounding ability (abbreviated PRS), which in 2002 accepted into service the Ministry of Interior of the Russian Federation. A distinctive feature of this ammunition is the lack of an iron core in the construction of the bullet, which was replaced by lead. This bullet, capable of rapid deformation, minimizes ricocheting hitting various buildings during the use of weapons in an urban environment, and significantly reduce its zapregradnoe action. In 1995, the Amur munitions plant were released early feelers cartridge CP, the design of which was based on the alteration of the regular bullet 7N6. The upper part of the jacket bullet 7N6 cut to expose the internal cavity and on the inside of the shell produced semblance 4 cuts, resulting in its effect is similar to a bullet became expansive hunting. The distinctive color but blackening the capsule and the absence of painting at the joints, bullets had not. The adoption of service in 2000- x ORS production Barnaul Cartridge Plant marked with purple paint-encapsulation at the junction of the liner with the bullet and cartridge case with primer. Cartridges assigned the symbol CP 5.45 gauss. At the bottom of the sleeve until 2008 was applied normal commercial markings of the Barnaul factory - factory logo and the caliber of the cartridge, and since 2008 - the last two digits of the year of production, the plant number (17) and a cartridge type - CP. For equipment used cartridges PRS as an early tubular powder brand VUfl 5.45 and later Sf033fl spheroid. Currently, the Ministry of Interior purchase cartridges CP suspended.

▲ Варианты маркировки на металлических штампованных коробках с 5,45-мм автоматными патронами, выпущенными Луганским патронным заводом

Auxiliary cartridges 5.45x39 generally remained unchanged, except for the single. Since the late 1990s. It has been launched production of modernized blank cartridges, structurally similar to the first prototype blanks 1970 - with extended dulcitol, crimped in a "star" with the subsequent lacquer edges crimped dulcitol. The production of new cartridges under the symbol 7H3M established in 2000 at the Barnaul Cartridge Plant (№ 17).

▲ Российские патроны со специальными пулями: 1, 2 – патроны с пулей БП (индекс 7Н22); 3 – патрон с пулей БС (индекс 7Н24), патрон с бронебойно-трассирующей пулей БТ (индекс 7БТ4)

▲ Российские армейские холостые патроны: 1-4 – индекс 7Х3; 5, 6 – индекс 7Х3М

Ukrainian PDW in September 2006 in Ukraine, representatives of the famous Belgian firm Fabric Nationale (FN) first demonstrated samples of small weapons class PDW (Personal Defence Weapon - personal defense weapon), developed specifically for support personnel. During the presentation, the attention of Ukrainians were represented by sub-machine guns and 90 P-Five-Seven pistol under a single small-caliber cartridge 5,7h28 small (more on weapons and ammunition in the O & O, № 1/2007 g). To get acquainted with new weapons and conduct test firings from the Ukrainian side were invited to some employees of power structures, as well as representatives of the arms industry. It turned out that in Ukraine there were also similar development. Since the mid 1990s, a group of scientists of one of the Ukrainian Research Institute engaged in working off the original design and implementation of solutions in the field of ammunition. One result of their work was the creation of an experienced small-sized cartridge 5.45x39-based staff. Taking the previous mathematical calculations and prototypes Ukrainian designers in the same 2006 presented the waste compact pistol cartridge cal. 5.45 mm, which is its external dimensions is quite consistent with the criteria for ammunition to the weapon grade PDW. Experienced Ukrainian munition had a very unusual design: the nominal 5.45 mm machine gun bullet PP (high penetration index 7N10) is set to 24 mm shorter full-time sleeve 5.45x39 bottom side up. Centering bullets going by placing her "ex" spout into the process of deepening the anvil sleeve. The total length of the cartridge was about 35 mm. Cartridge equip a special charge of gunpowder brand SP - 0.45-0.55, the first prototypes were made with the use of fire a ballistic installation with a barrel length of 130 mm and 135 mm pitch rifling. When the muzzle velocity of about 540 m / s at 25 m broneprobivaemost sheet of armor steel 2P 4mm normal was about 90% completely penetrated. However, the firing of a ballistic installation was only the beginning. It was a patron rather quickly adapted gun PN-45, developed by Ukrainian designer Victor L. Shevchenko. The choice of weapons was not accidental, because the modular design allows it to use the same sample several types of cartridges from the most common pistol ammunition of the world - simply by replacing the barrel and magazine. To use the gun 5,45h24 experienced PN-45 only had to make the barrel cal. 5.45-mm and 16-round magazine. The results confirmed the efficiency of test firings of the "patron-arms" and work on the overall prospects of the domestic ammunition: the actual performance of the initial velocity bullets, armor penetration, and other important characteristics of the cartridge were virtually identical data obtained in the ballistic setup. -

▲ Габаритные размеры патронов PDW в сравнении с патроном 9x19 Luger. Далее: 5,7x28 фирмы FN, украинский опытный 5,45x24, стрелянная гильза патрона 5,45x24, конструкция патрона 5,45x24

▲ Российские патроны кал. 5,45-мм с пулями ПРС. Слева – ранний вариант Амурского завода

▲ Предшественник патрона 9х39 – 7,62 мм патрон РГ037, выполненный с использованием гильзы 5,45х39. СССР, 1983 г.

Ukraine, Lugansk cartridge

The second country after Russia, where the production of the cartridge 5.45x39 preserved in large-scale, is Ukraine, where the remnants of power of the Luhansk Machine-Tool Plant, passing the hard way many transformations of recent decades, continue to work to this day. The legacy of the independent Ukraine has got not just a giant factory with a variety of activities, but also one of the largest ammunition factories since the days of Czarist Russia. However, the decline in military orders from the Ministry of Defense, the low liquidity of civilian products, the loss of contact and malfunctions with Russian suppliers eventually led to the systematic instability of the enterprise. Management of the plant, struggling with debts of the enterprise and, at the same time, do not forget about their own selfish interests, constantly sold out to scrap hundreds of pieces of equipment, gradually destroying the plant. Individual deliveries abroad expensive cartridge line with the mediation of companies "Ukrspetsexport" and "Ukrinmash" could significantly improve the financial position of the Company as income from transactions settled mainly in pockets of middlemen and government officials. As a result, in 1998 the state enterprise "Lugansk Machine-Tool Plant" has been revealed Ob bankrupt, and in 2001 was appointed an investor sanitation plant in the person of JSC "Brinkford." Over the next 2002, all assets LMTP were divided into three separate companies: two state - SE "Lugansk cartridge" and SE "Lugansk Machine-Tool Plant" and one private - JSC "Lugansk Cartridge Factory" (the main founder of which was still the same company " Brinkford "). Directly involved in the production of ammunition, only two of them. From that moment, in spite of close cooperation, the development of both companies went in different directions. SE "Lugansk cartridge" engaged in the production of rifle ammunition on the orders of Defense and the Interior, and the private JSC "LPZ" - the production of sports and hunting cartridges. It was assumed that the main technical assistance cartridge components "Lugansk cartridge" will provide just the private producer - LPZ. However, in the absence of state support for state-owned enterprise was constantly forced to pay for the debts of its assets and production facilities, which in the end were almost entirely concentrated in the hands of the private LPZ, and in April 2009 the state enterprise "Lugansk cartridge" was declared bankrupt. To date, the main producer of 5.45x39 ammunition, both in his sports-hunting version and the Army of the sample is only PJSC "Lugansk cartridge plant" (till 2010 - CJSC).

From the Army ammunition destination in Lugansk to mid-2000- x made cartridges with enhanced penetration bullet PP (index 7N10 later - Ukrainian 7S2.00.000 designation), the idle 7H3, and (small-scale security services on the orders) cartridges CSS reduced speed bullet early design (of the mid-1970s) - with a lead core and a reduced charge of gunpowder. CSS assigned the symbol 5.45 USPgs.

▲Фрагменты технологической последовательности изготовления гильз Луганского завода: стальной диск – исходный компонент для вытяжки гильзы; заготовка гильзы после обжатия дульца, еще не обрезанная по высоте, без проточки и лакового покрытия; конечный продукт – стальные лакированные гильзы, готовые к дальнейшему снаряжению, и пульная оболочка до запрессовки в нее сердечника

▲Боевые патроны Луганского завода: *слева* – с пулей ПС, *в центре* – с пулями ПП (7Н10), *справа* – патрон УС

▲Холостые патроны кал. 5,45х39 Луганского патронного завода разных лет выпуска

Similar in design cartridges with lead core produced LPZ private and civil turnover. Initially LPZ cal products. 5.45 mm was produced only for export, but since the mid-2000s, after the certification of the Ukraine civil hunting weapons of this caliber 5.45x39 ammunition production LPZ began to arrive, and the domestic market. Hunting cartridges with lead bullets bear the symbol 5,45h39-4 CBC. Weight bullet with lead core - 4.3-4.5 on the sleeve of the commercial production of stamped logo - LPZ and caliber cartridge - 5.45x39, and ammunition used by the Army nomeklatur even an old Soviet factory code - "270".

Turning to the prospects of the state enterprise "Lugansk cartridge", we note that the 28 April 2011 the Economic Court of Lugansk region opened the procedure for its reorganization. Will it have at least some sense - time will tell, because almost all of the former production capacity of spredpriyatiya been concentrated in private hands. Yes, and all major military options cartridges - 9x18, and 5.45x39 7,62h39 bullets with steel core - is now offering to sell all the same PJSC "Lugansk cartridge plant" ...

Water world experience of the Soviet designers to create systems for shooting underwater shooting led to a unique theoretical and practical developments in the fields of weapons and ammunition. The works in this direction were made in the Soviet Union for decades, and resulted in adopting counter-sabotage forces special samples underwater weapons - 4.5 mm chetyrehstvolnogo pistol SPP-1M and 5.66-mm machine AAR. At the core of the cartridge for the rootstock-stand machine is full-time-machine sleeve 5.45 mm cartridge. The difference in the designation of 5.45 and 5.66 due to the absence of underwater smooth-bore machine grooves and fields which are usually made froze caliber. In the case of underwater automatic caliber is measured by the actual diameter of the barrel and bullet, which make up 5.66 mm. The basis for the work on the creation of underwater submachine gun cartridge began large-scale experimental developments conducted by a group of designers TSNIITOCHMASH in the 1968-1970 biennium. when you create a 4-barreled gun underwater with active-reactive and later - with active ammunition. Designers DI Shiryaev and SI Matveykin were created active-jet cartridges of 7.62 mm, and the designer J. Kalyanova - active caliber 4.5 mm (4,5h40R). A particular challenge in the first stage of development represented a lack of theoretical and practical information on the specifics of a ballistic movement of ammunition in an aqueous medium, representing the complex relationship of hydrodynamic processes. However, during experiments Soviet designers failed to establish the basic principles of designing the head part propellant elements, of which the movement of their stable in an aqueous medium. Long steel bullets to the head part in the form of a truncated cone, and flat-cut tops (cavitator) created when fired so-called cavitation effect, in which a long shot at movement in water stabilized in a kind of "bubble" - cavitation bubble. This design of the bullet head with a truncated cone and cut the top of the screen has been selected for an automaton bullet cartridge 5.66 MPS (small-caliber special underwater). The cartridge, developed in the early 1980s. designers TSNIITOCHMASH PF Sazonov and OP Kravchenko for special underwater machine APS design VV Simon, consists of a steel lacquered shells and lacquered steel bullets length of 120.3 mm and a weight of 20.7 g total length of 150 mm ammunition at a mass '23 tubular charge pyroxylin gunpowder mark Fl 4/1 (or 4/1 Fl C) weighing 1.45 g provides a muzzle velocity of 340-360 m / s. To seal the cartridge, operating in continuous contact with water, the joints bullet sleeve and the sleeve with a primer coated with a special sealant black. To supply APS underwater machine used plastic shopping original form capacity of 26 rounds. Production of ammunition 5,66h39 was established on Yuryuzanskom munitions plant number 38 with automatic cartridges 5.45x39 Ulyanovsk plant № 3. In parallel with the APS test machine took working out and experienced underwater gun, the use of which was supposed to shore stationary subsea installations, but adopted This system was not accepted. Power 5,66h39 guns cartridges produced by a metal sectional loose tape on the length of the link which was almost equal to the total length of the cartridge. Currently, the Russian army developed and tested new types of underwater test rounds on the basis of regular cartridges 5.45x39. Cartridges with shorter-piercing bullets in a plastic tray on the total length does not exceed the size of any staffing automata cartridge and intended for use in two-media special underwater machine DT. The design of the machine allows the use of both full-time live ammunition to fire on land and underwater new ammunition in the aquatic environment. Live ammunition was given the symbol PSPgs and patrons with practical training bullet - PSP-UDgs.

▲ Маркировка на крышке и боковой поверхности металлических штампованных коробок с 5,66-мм патронами для подводного автомата АПС

▲ Картонная коробка на 26 шт. 5,66-мм подводных автоматных патронов

Former Republic

After the collapse of the Soviet Union the former Soviet republic gained independence, continued to use the Soviet complex of small arms together with ammunition left over at military depots. For the majority of the independent states of the Soviet army reserves will suffice for many years, but some countries have decided to take on the heavy burden of cartridge production. Among them - Azerbaijan, which in 2010 declared its independence in the supply of ammunition. As we have mentioned previously, the exact details of the supplier of the equipment cartridge is not yet known, but with a high degree of probability we can assume that the lines for the production of ammunition were delivered to this country from Russia and Ukraine. Since 2010 partner of Azerbaijan in the field of military production, including ammunition, became Turkey. In the catalog of the Ministry of Defense Industry of Azerbaijan cartridges 5.45x39 presented three models: 7N10 with enhanced penetration bullet weighing 3.62 g; 7T2 tracer bullet weighing 3.23 g and idle 7H3 with a plastic bullet white weighing 0.24 g All cartridges are loaded with in lacquered steel liner. Ammunition with armor-piercing bullets 7N10 sealed with black lacquer on the edge Dultsev sleeve and along the contour of the capsule, the cartridges with tracer bullet 7T2 sealed with red lacquer on the edge Dultsev sleeve and along the contour of the capsule, and the top of the bullet is painted in green. Blanks distinctive marking and sealing are not. Presumably Azerbaijani marked ammunition manufacturer code "050". Other former Soviet republics of Uzbekistan, decided to organize ammunition production with the use of European technology. In 1999, the government of this country has signed a contract with a French company to supply Manurhin modern lines for the production of ammunition closed cycle. Production lines for 5.45x39 began in the same year. It is interesting to note that the assembly line testing was performed using the cartridges and bullets purchased from the Indonesian company PT. PINDAD (Persero). In 2000 he was made equipment for the production of sleeves, and since 2002, Uzbekistan started its own production of ammunition at the "East" in Tashkent. New Uzbek equipment is designed to produce cartridges cal. 9x18, 9x19, 5.45x39, 7,62h39, 7,62x54R in brass cartridges with capsule nest "bokserovskogo" type. The cartridges are labeled as a manufacturer code "601".

▲ Патроны 5,45x39 Узбекистана: макет патрона, изготовленный во время тестирования сборочного оборудования для Узбекистана на французской фирме Manurhin из покупных компонентов индонезийской фирмы PT. Pindad (Presero); гильза без маркировки, изготовленная во время первых испытаний оборудования для Узбекистана в 2000 г. во Франции; гильза, изготовленная при сдаче производственной линии представителям Узбекистана на французской фирме Manurhin; стреляная гильза от патрона, изготовленного в Узбекистане на заводе «Восток» (заметны отличия в маркировке по сравнению с гильзой французского производства)

Neighbors

Perhaps the most characteristic illustrations spread 5.45x39 ammo in the "pro-Soviet" countries can serve as Bulgaria and Poland. Bulgaria, traditionally gravitating to Russia, started the production of at least 5.45x39 rounds in 1984. All of this caliber ammunition produced in

lacquered steel sleeves with red lacquer-encapsulation at the junction of the liner with a bullet and primer. Nomenclature of ammunition almost entirely dubbed the Soviet and consisted of a conventional cartridge with a bullet weighing 3.5 g PS, the cartridge with a tracer bullet weighing 3.3 g (top bullet green) blank cartridge with a plastic bullet and training cartridge with three longitudinal grooves on the body sleeves and a broken capsule silver. Several different decision 5.45x39 developed in Poland, the eternal enemies of Russia. The Polish military leadership decided to follow the path of their own development of weapons and ammunition cal. 5.45x39. At the beginning of the 1980s. in Poland it was initiated developmental threads Tantal (the development of weapons of cal. 5.45 mm) and Cez (development of ammunition cal. 5.45 mm). The first experimental batches of ammunition were manufactured in 1983, and the first prototype machine appeared in 1985. In January 1988, the army began testing the machine, and in 1991 automatic Karabinek automatyczny wz. 1988 Tantal and patron Naboj 5,45-mm x39 wz. 1988 were adopted by the Polish army. Nomenclature of ammunition was relatively small. Cartridge with a conventional bullet with a steel core Naboj bojowy z pociskiem zwyklym o rdzeniu stalowym typu PS had a special color coding. The cartridge with a tracer bullet Naboj bojowy z pociskiem smugowym typu 7T3 SSI had okra tops bullet green. It was released only a small test batch of tracer bullets. The first version of the idle munition (Naboj swiczebny (sleepy)) had a sleeve with an elongated Dultsev crimped top "star". However, the use of such cartridges were found problems with the automatic small arms. So soon it was developed blank cartridge with a plastic hollow bullet "Soviet" type. Training cartridge (Naboj szkolny) consisted of a sleeve with a drilled socket capsule, filled with white plastic so that the upper part of the plastic filler protruding from the sleeves and simulated shot with live ammunition. Polish test cartridges of high pressure and with increased charges were similar in design and color marking of the Soviet type. Cartridges fitted out in lacquered steel liner. The issue of ammunition cal. 5.45x39 has been adjusted at the factory Zaklady Metalowe «Mesko» (manufacturer code 21) in Skarzhinsky Ka Menna. In 1996, the issue of ammunition wz. 1988 was terminated in connection with adopting the Polish army machine kb. wz. 1996 Beryl and ammunition 5,56h45 NATO.

▲ Патроны стран ОВД: 1, 2 – болгарского производства (боевой и холостой); 3, 4 – холостой и боевой патроны румынского производства; 5 – коммерческий патрон польской фирмы Mesko

▲ Патроны ГДР: боевой с пулей ПС и учебный

Commercial use

In the first half of the 1990s. Russian ammunition plant experienced a severe economic crisis. Precipitous decline in public procurement, including the primary submachine gun cartridge 5.45x39, forced manufacturers to look for alternative munitions markets for their products. At the same time begins to actively develop a pure hunting patterns of ammunition for export; and the terms of reference for this new product every production plant created in-house. The simplest solution, which was originally chosen almost all manufacturers of ammunition, was the replacement of the steel core bullets of the army in the lead. The inevitable increase in weight of the bullet due to the heavy core is often compensated for by increasing the processing cavity in the head of the bullet. Most manufacturers use for the first models of hunting bullets native bimetallic shell by a bullet cartridge 7N6. Only Ulyanovsk plant number 3 fitted out lead core bullets in commercial shell from the standard tracer bullets 7T3, t. To. This company is a major producer of ammunition since the early 1970's. The same shell is used Ulyanovsk ammunition plant (APP) and the manufacture of bullets with the cavity in the head of a mass of 4.5 HP, after 2005, the products of the Ulyanovsk ammunition plant, together with the products of the Tula ammunition plant is actively supplied to the markets of the US and Canada under a single trade brand Wolf. After 2009 these products began to be made under the new brand - Tulammo. The cartridges are equipped with bullets FMJ and HP weight 3.9g develop SMI and bullet shells CPL using tracer bullets taken out of production. Amur cartridge factory under the trademark Golden

Tiger («Golden Tiger") to export the cartridges supplied with two types of bullets - FMJ and HP weight of 3.8 g

By the end of the 90s to Barnaul Cartridge Plant equipment for hunting options cartridge was 5,56h45 designed line of the main types of hunting bullets - with a cavity in the head of HP (symbol Mo - empty nose bullet weight - 3.56 g) and soft point lead with bare core SP (Designation, bullet weight - 3.56 g). The same line of bullets from the late '90s and used equipment for hunting cartridges cal. 5.45x39. Barnaul cartridges equipped with lacquered steel, galvanized steel, and steel coated liners. By order of the American company Hornady Manufacturing Company, Inc Barnaul Cartridge Plant supplies steel liner with a polymer coating, which in the US are loaded with 60-grain (3.9 g) soft point bullet Hornady V-Max ™ with a plastic-tipped ballistic. In addition to hunting options and Barnaul Tula ammunition plant produces the so-called "noise" cartridges, which are in fact regular blanks 7H3 - the only difference is that in branding the used cartridges civic symbols and change color coding.

▲ Патроны Барнаульского производства разных лет. №№1-4 снаряжены пулями от патрона 5,56х45

▲ Варианты коммерческих патронов 5,45х39 производства ОАО «Тульский патронный завод»

◂ Патроны с российскими гильзами, произведенные по заказу иностранных компаний – тульская латунная гильза для чешской фирмы Sellier & Bellot (контракт был не выполнен) и барнаульская стальная гильза, снаряженная американской компанией Hornady

LPA - cartridges for creation purely peaceful purpose has another cartridge, based at 5.45x39 cartridges. This cartridge assembly LPA (reinforced mounting chuck, TU 3-1064-78), used in special powder tools during construction. Structurally cartridges LPA consists of lacquered steel liner with a reduction Dultsev "a star", a charge of smokeless powder, and the primer. Depending on the notional capacity of the cartridge, powder charge and weight of its energy LPA cartridges are divided into three rooms and have the distinctive color markings crimped Dultsev. LPA-1 Dultsev painted white (conventional power - low energy - 1640 J) is used for breaking holes in the hollow-core concrete panels of a special shock-column 6 of the Criminal Code. LPA-2 Dultsev painted green (conventional power - the average energy - 2200 J) is used to seal the electrically conductive connection of steel pipes using press TSEP-33M. Also in this type of work are allowed use of the cartridge and LPA-1. Holder LPA-3 Dultsev painted yellow (conventional high power, energy - 2700 J) applied for termination of electrical cables using the OPS-240 press. Recently cartridges LPA found another use - they are used for signal and idler shooting from combat weapons oholoschennogo cal. 7,62h25 TT (TT pistol, machine guns and PCA PPP) as part of the military-historical reconstruction, and when shooting movies. LPA cartridges are packed in paper wrappers 30 pieces. (or bulk cartons 250 pcs.) and a total of 1000 pieces. fit into a standard metal-welded rolled up a box with the subsequent packing of two metal boxes in a standard cartridge wooden box.

▲ Маркировка на крышке металлической штампованной коробки с 1000 шт. монтажных патронов МПУ-1, выпущенных Луганским патронным заводом

▲ Картонная коробка на 250 монтажных патронов МПУ-1, изготовленных Тульским патронным заводом в 1989 г.

For several reasons, the cartridge being purely an army, is not widely used in Europe as hunting. It follows its low prevalence and a limited number of manufacturers. Basically it is the company of those countries where it was in service - Bulgaria, Germany, Poland, etc. In the end more like to stay at one of the few European hunting cartridges 5.45x39, who was in the 1990s. RWS is certified by the German company and which has been assigned a rather unusual for the European manufacturer designation in the imperial system of units - caliber .215. The cartridge was completed with a bullet SG (Scheibengeschoss) with a cavity in the head and mass equal to 3.8 g (59 faces). Sleeve - lacquered steel, with no stains on the joints sealing sleeve with a bullet and primer.

▲ Картонная коробка с коммерческими холостыми патронами ОАО «Тульский патронный завод»

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TAGS 5.45H39