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THE PPD-40, PPSh-41, AND PPS-43

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TRANSLATION

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ABSTRACT: The submachine gun was an important Soviet weapon during the years of World War II. Its lightness and ease of handling made it an ideal weapon for close combat. The development of the submachine gun reflected the development of Soviet mass production techniques demanded by the pressures of the War.

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In 1934, in the war between Paraguay and Bolivia, the Bolivian infantry employed a new weapon -- the submachine gun. Analyzing the experience of battles, the Latin-American soldiers noted that any attack can be checked at a distance of the last 200 meters if the defense has available an adequate quantity of action ready submachine guns. Specifically, at close distances, the light and reliable submachine gun surpasses the hand held machine gun.

Submachine guns were created for pistol cartridges and they were the means of conducting fire in uninterrupted bursts. This foreordained the remarkable capacity of the magazine. The barrel of a submachine gun is longer than that of a pistol. In this manner the bullet's muzzle velocity is increased, and fire at battle distances of 200-400 meters becomes more effective.

The comparatively small power of the cartridge permits the use of a more simple automatic principle, based on the recoil of a free bolt.

The forerunners of submachine guns may be considered to be automatic pistols with attached butt-stocks, with the help

ППД-40

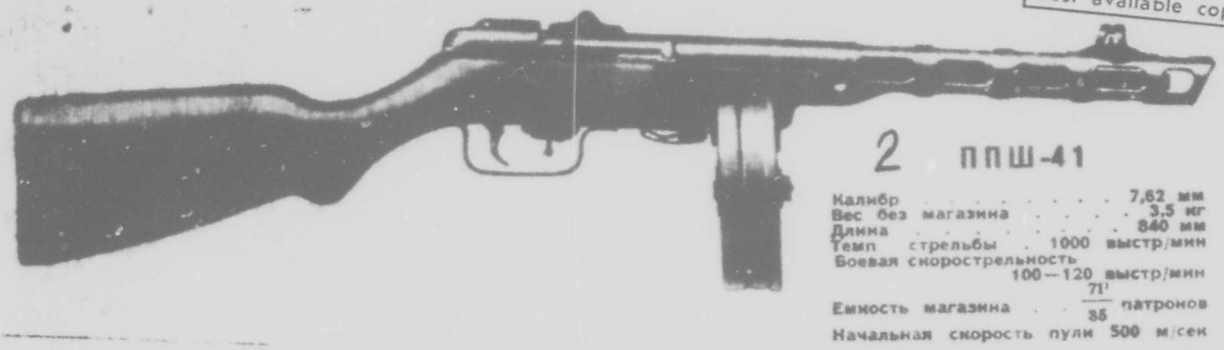
Калибр	7,62 мм
Вес без магазина	3,6 кг
Длина	780 мм
Темп стрельбы	1000 выстр/мин
Боевая скорострельность	100—120 выстр/мин
Емкость магазина	71 патрон
Начальная скорость пули	500 м/сек

Key: 1 -- PPD-40

Caliber	7.62mm
Weight w/o magazine	3.6 Kg
Length	780 mm
Rate of fire	1000 shots/minute
Sustained rate of fire	100-120 shots/min.
Magazine capacity	71 cartridges
Muzzle velocity	500 meters/sec.

of which the weapon could be held very steady during firing bursts and achieve a resultant high degree of firing accuracy. A well known prototype of the submachine gun was designed by the Soviet arms maker B. Fedorov. The model passed military tests in the 1920's. True, a more powerful cartridge than the usual pistol cartridge is used in this weapon.

Many models of submachine guns were developed in the 1920's and 1930's by the Soviet designers F. Tokarev, S. Korovin, V. Degtyarev, S. Prilutskiy, and I. Kolesnikov. Massive production of submachine guns began in our country only during the war with the White Finns. Our forces at first met with strong bands of anti-tank obstacles, granite blocks. The very terrain of the Karel'~~sk~~ can isthmus turned out to be difficult for the troops deployed in operation; the terrain was cut by scaled crevices and covered with forests and snow obstacles. And it



2 ППШ-41

Калибр . . . . . 7,62 мм
Вес без магазина . . . . . 3,5 кг
Длина . . . . . 840 мм
Темп стрельбы . 1000 выстр/мин
Боевая скорострельность
100—120 выстр/мин
Емкость магазина . . $\frac{71^1}{35}$ патронов
Начальная скорость пули 500 м/сек

3 ППС-43

Калибр . . . . . 7,62 мм
Вес без магазина . . . . 3,04 кг
Длина . . . . . $\frac{820^2}{623}$ мм
Темп стрельбы . . 600 выстр/мин
Боевая скорострельность
100—120 выстр/мин
Емкость магазина . . 35 патронов
Начальная скорость пули 500 м/сек

4 ¹ В числителе — емкость барабанного магазина, в знаменателе — коробчатого

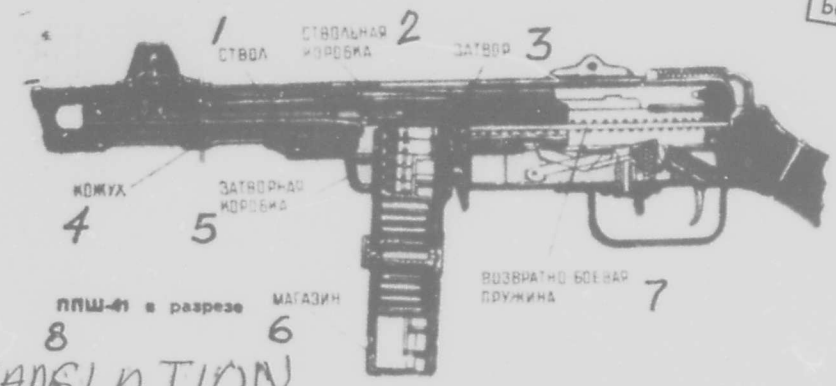
5 ² В числителе — длина оружия с откинутым прикладом, в знаменателе — со сложенным

Key: 2 -- PPSh-41
Caliber. . . . . 7.62 mm
Weight w/o magazine . . . . . 3.5 kg
Length . . . . . 840 mm
Rate of fire . . . . . 1000 shots/min.
Sustained rate of fire . . . . 100-120 shots/min.
Magazine capacity . . . . . $\frac{71^1}{35}$ cartridges
Muzzle velocity . . . . . 500 meters/sec.

3 -- PPS - 43
Caliber . . . . . 7.62 mm
Weight w/o magazine . . . . . 3.04 kg
Length. . . . . $\frac{820}{623}$ mm[2]
Rate of fire . . . . . 600 shots/min.
Sustained rate of fire . . . . 100-120 shots/min.
Magazine capacity. . . . . 35 cartridges
Muzzle velocity . . . . . 500 meters/sec.

4 --[1]In the numerator--the capacity of the drum type magazine; in the denominator--the box type magazine.

5 --[2]In the numerator--the length of the weapon with the butt-stock extended; in the denominator--with the stock folded.



TRANSLATION

Key: 1 -- Barrel
2 -- Receiver assembly
3 -- Breech mechanism
4 -- Housing
5 -- Return spring housing
6 -- Magazine
7 -- Recoil spring
8 -- PPSh-41 in cross section

was in that very situation that the excellent battle quality of the submacnine gunswas manifested, which guns had been received during the Great Patriotic War and were called "avtomaty."

In 1940, the submachine gun, PPD-40, appeared in the Red Army. Vasiliy Alekseevich Degtyarev originated the modern weapon which had a high rate of fire, and yet was light and easy to handle. The traditional box type magazine which held 25-30 cartridges gave place to the drum type with 71 cartridges. Granted, the disk was less convenient to use. But soldiers immediately appreciated its quality because of its large capacity.

However, the PPD-40 in many ways did not meet the severe technological demands of wartime. Many of its components were manufactured in a rather labor-consuming manner on metal-cutting machines. And yet mass production is based on more progressive methods, for example, cold stamping. Such technology facilitates

automation and even contributes to great economy of time: a strike of the stamp, and the part can start into assembly after the most simple finishing.

Half the time needed to produce one PPD-40 went into the manufacture of the PPSh-41, the first submachine gun model of the remarkable Soviet designer, Gregorij Semenovich Shpagin. He managed to achieve other invaluable characteristics of the submachine gun. The PPSh-41 distinguished itself with good shot-grouping and accuracy of fire: the automatic mechanism did not break down during firing and the recoil did not interfere in the bullet's accurate flight to the target. Shpagin devised a simple but effective muzzle brake which served simultaneously as a recoil compensator. The end muzzle part of the casing of the automatic mechanism was cut off -- not in a direct angle to the axis of the barrel, but, obliquely, in such a manner that the upper part of the cut protruded forward. The gunpowder gases hit into this recess and created a force which counteracted the weapon's kickback. In the Shpagin automatic there was not one screwed joint. It is enough to undo the catch and it is possible to tear down the whole PPSh part by part. Soviet industry in a very short period of time gave to the front hundreds of thousands of pieces of firstclass weaponry.

In 1943, there was launched into serial production the "avtomat" model of another Soviet designer, Aleksej Ivanovich Sudaev. His submachine gun of the 1943 model passed the tests directly in battle conditions at the Leningrad front. The

factories of besieged Leningrad put out the first group of new weapons. The PPS-43 helped the Soviet forces break Hitler's blockade of the city of Lenin.

The Sudaev automatic did not have an equal in lightness and small size. It is equipped with a retractable metallic stock. The design is adapted toward modern methods of production--welding and cold stamping. The exceptional simplicity of the PPS-43 permitted the organizing of its production in any slightly equipped workshop.

To take the place of the wartime models, new perfected submachine guns came into our army (now they are called "avtomaty") But the veterans of the Great Patriotic War will always have pleasant memories of their battle comrades, the"avtomaty" of the war years.