WEAPONS CORNER

THE ROCKET-PROPELLED GRENADE:

Six Decades and Still Going Strong

Figure 1 — The Panzerfaust rocket and launcher

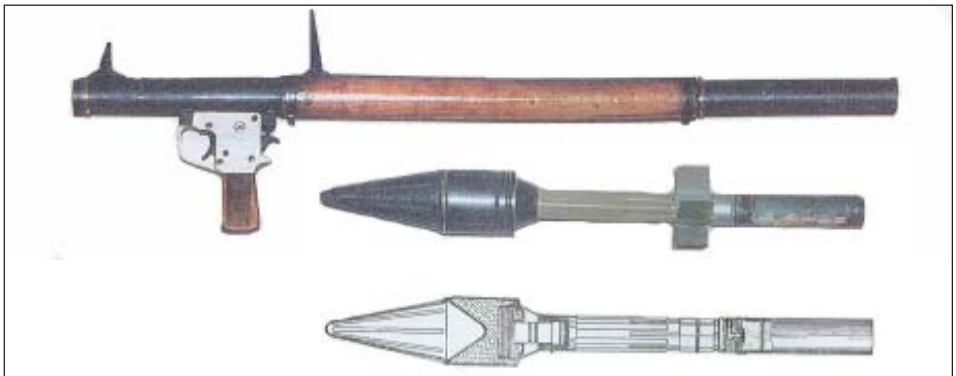

Figure 2 — The RPG-2 and rocket

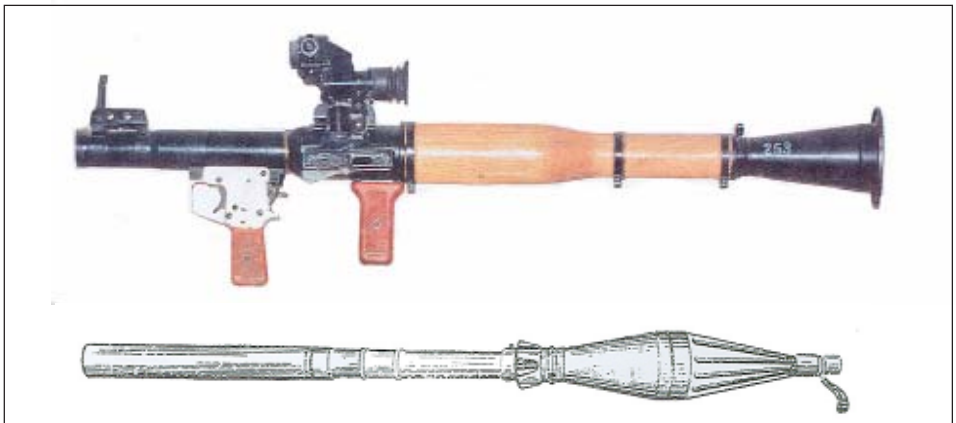

Figure 3 — The RPG-7B and rocket

Figure 4 — The RPG-18

The Kalashnikov rifle and the rocket propelled grenade (RPG) launcher have come to symbolize the insurgent and his tactics ever since the Vietnam War. Both are as common in the global war on terror as they were in that earlier conflict, and are encountered daily by U.S. and Coalition forces. The penetrative effect of the hollow (shaped) charge had been known since the 1860's where it was used to effect in demolition and mining work, but the earliest mass-produced of these weapons was the German Panzerfaust antitank grenade launcher (Figure 1) which was first fielded in 1943 and saw service with Wehrmacht and Volkssturm organizations during the later years of World War II. Its relatively short effective range of 30 meters was somewhat offset by the ability of its 150mm shaped charge to penetrate 140-200mm of rolled homogeneous armor (RHA), the standard medium for evaluating and comparing the effects of antiarmor munitions.

The Soviets were quick to grasp the potential of a simple, light, easily fired grenade launcher, and by 1944 were working on what was to become the RPG-1, whose 70mm rocket could defeat 150mm of RHA at an effective range of 75 meters, two and a half times that of the Panzerfaust. Due to difficulties with the fuse mechanism and the propellant charge in extreme seasonal climates, however, the RPG-1 was never produced in quantity, and once these issues were resolved the product improvements were applied to the RPG-2 (Figure 2), which entered Soviet service in 1949. The operation of the RPG-2 was easy for soldiers to learn, and its penetration of 200mm RHA and its effective range of 150 meters — twice that of the RPG-1 — were

Figure 5 — The M-72 LAW

significant improvements over its predecessor's performance. With its HEAT warhead and solid-propellant fuel, this was the first antitank weapon to be encountered in large numbers by U.S. forces during the Vietnam War.

The RPG-2 was to be the mainstay of Soviet individual antitank weapons until the early 1960's, when the RPG-4 underwent testing. It achieved a 10 percent greater RHA penetration (220mm), an effective range of 300 meters — twice that of the RPG-2 — and a flatter trajectory due to its higher velocity. While the RPG-1 and RPG-2 had two simple wooden heat protectors clamped to the barrel to protect the firer's hands from burns, the RPG-4 had a shorter but more robust and centrally thickened plywood heat shield over the wider charge chamber and a flared blast shield at the breech. Like the RPG-1, the RPG-4 was never manufactured or issued for other than testing, because in 1961 it was superseded by the product-improved RPG-7 (Figure 3).

The RPG-7 can be found in most of the former Soviet states and surrogates, in those countries long accustomed to acquiring Soviet-built arms, and throughout the Third World. Readers with experience in the later years of Vietnam, or in Somalia, Desert Storm, Iraq, Afghanistan and other hot spots need no introduction to the RPG-7. Those unfamiliar with the weapon will recognize it by its optical and iron sights, an improvement over the solely iron sights of its predecessors; by its thick 3-clamped plywood heat shield that tapers to the rear; and by its flared venturi nozzle at the rear. The effective range is from 300-500 meters, depending on the type of round fired, and the PG-7VL grenade is capable of penetrating up to 500mm of RHA.

While the family of RPGs was characterized by its reusable launcher, the development and fielding of the U.S. Army's M-72 LAW (Lightweight Anti-Armor Weapon), shown at Figure 5, in the 1960's introduced the concept of a disposable launcher, an innovation that was not lost on the Soviets. Their own version, the RPG-18 (Figure 4), was first fielded in 1972. Since these have been found in the hands of insurgents fighting in Iraq today — although in much smaller numbers than the RPG-7 — it is logical to infer that they were part of Saddam Hussein's arms acquisitions from the Soviet Union and the states that it comprised, although they may well have also been imported into Iraq by terrorists operating out of Syria, Iran, and other regional states. With its effective range of 200 meters, RHA penetration rated at 300mm, and a muzzle velocity of well over 110 meters per second, it is a formidable weapon.

The final weapon to be described in this month's Weapons Corner is the U.S. Army's M136 AT4 light anti-armor weapon. Originally developed and manufactured by Saab Bofors Dynamics of Sweden, and later manufactured for the United States Army and Marine Corps by Alliant Techsystems, it is a powerful weapon suitable for either anti-armor or bunker reduction applications, with considerable secondary antipersonnel effects, given a sufficiently frangible target such as masonry. With its 84mm warhead, the AT4 has an effective range of 300 meters and can defeat approximately 355mm of RHA. The AT4 is discussed here solely for the purpose of comparison with our own anti-tank weapons and those of our adversaries. We welcome reader comments and personal observations on the employment, characteristics, and effectiveness of the family of rocket propelled grenades.

System	Warhead Caliber	Effective Range	Penetration (rolled homogeneous armor)
Panzerfaust (Figure 1)	150mm	30m	200mm
RPG 2 (Figure 2)	80mm	150m	200mm
RPG 7 Series (Figure 3)	70-93mm	300-500m	260-500mm
RPG 18 (Figure 4)	64mm	200m	300mm
M72 LAW (Figure 5)	66mm	300m	300mm

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