

## RPG-7: Structure and Function

### Introduction

The RPG-7 is a widely used, shoulder-fired, anti-tank rocket-propelled grenade launcher. Developed in the Soviet Union in the 1960s, it remains one of the most recognizable and effective infantry weapons for engaging armored targets, fortified positions, and enemy personnel. This document explores the RPG-7's structure, function, and operational significance.

### Structure of the RPG-7

The RPG-7 consists of several key components that contribute to its effectiveness and ease of use.

#### 1. Launcher Tube

The core of the RPG-7, typically made of steel or aluminum.

Has an open design to allow rocket exhaust to exit, reducing recoil.

Features a simple iron or optical sight for aiming.

#### 2. Rocket-Propelled Grenades (Warheads)

HEAT (High-Explosive Anti-Tank): Designed to penetrate armor.

Fragmentation Warheads: Effective against personnel and lightly armored vehicles.

Thermobaric Warheads: Used for destroying bunkers and fortifications.

#### 3. Trigger Mechanism and Grip

Located beneath the launcher for easy handling and firing.

Equipped with a safety mechanism to prevent accidental discharge.

#### 4. Optical and Iron Sights

Basic iron sights are standard for close-range targeting.

Optional optical and thermal sights enhance accuracy for long-range shots.

#### 5. Propulsion System

The grenade is fired by a small gunpowder charge, propelling it from the tube.

A secondary rocket motor ignites after launch, increasing range and speed.

### Function and Operation

The RPG-7 operates on a simple yet effective principle of launching a self-propelled grenade at a target.

#### 1. Loading and Firing

The user loads a grenade into the rear of the launcher.

The safety is disengaged, and the trigger is pulled to fire the grenade.

The grenade's rocket motor ignites after launch, propelling it forward.

#### 2. Flight and Impact

Stabilizing fins deploy after launch to maintain accuracy.

The grenade travels at speeds up to 300 m/s.

Upon impact, the warhead detonates, delivering its intended damage.

#### 3. Effective Range and Accuracy

Effective range: 200–500 meters against stationary targets.

Maximum range: Over 900 meters, though accuracy decreases.

Penetration: HEAT warheads can penetrate up to 600mm of armor.

### Importance and Applications

The RPG-7 remains a critical weapon in various military and insurgent forces worldwide.

#### 1. Military Use

Used by armed forces for anti-armor and anti-personnel roles.

Deployed in urban warfare and guerrilla tactics.

#### 2. Versatility in Combat

Effective against tanks, fortifications, and vehicles.

Adaptable with different warheads for specific missions.

#### 3. Cost-Effective and Reliable

Simple design makes it easy to manufacture and maintain.

Low cost compared to modern anti-tank guided missiles.

### Conclusion

The RPG-7 is a powerful and versatile weapon that has remained relevant for decades due to its simplicity, affordability, and effectiveness in combat. Its ability to engage a variety of targets ensures its continued use in modern warfare, making it one of the most iconic shoulder-fired weapons in history.