

The No. 68 Anti-Tank Grenade

The No.68 was a HEAT grenade designed to damage armoured fighting vehicles and was fired from a service rifle with a discharger cup. The Mark I version of the grenade was first introduced in mid 1940 and by June 10,000 grenades had been delivered and issued, due to the situation at this time 2 million of the grenades were requested. When fired the grenades produced significant recoil and so a spade was designed to attach to the butt of the rifle, firing from the shoulder was also possible but reduced the range from 100 yards to 50-60 yards. The grenades were initially filled with 156 grams of RDX/BW but could also be filled with Pentolite, later several other fillings were tested and Lyddite was also approved. By 1942 the grenades were obsolete and related to the Home Guard.

Penetration of the grenades varied between each Mark and also depended on what filling was used, initially penetration of around 30mm at 30 degrees and 38mm at 0 degrees would be reasonable, with later Marks penetration of around 35-40mm at 30 degrees and 50mm at 0 degrees could be achieved. Post penetration performance depended on the thickness of the plate and the angle, a thinner plate tended to yield a larger number of higher velocity fragments while a thicker plate gave fewer much larger low velocity fragments.

British Grenades of the Second World War

Written by David Boyd

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| | |
|---------------------------|------------------|
| Length | 7in(17.78cm) |
| Diameter | 2.5in(6.35cm) |
| Total Weight | 1.97lb(0.89kg) |
| Filling Weight | Steel |

| | Date | Filling |
|----------|-------------|-------------------|
| Mark I | May? 1940 | RDX/BW, Pentolite |
| Mark II | August 1940 | RDX/BW, Pentolite |
| Mark III | Early 1941 | Pentolite |
| Mark IV | Late 1941 | Pentolite |

Production of No.68 Grenades by year (UK Only, filled only)

*no figures for 1940

| | | | | |
|----|--------------|---------|-----------|---|
| - | Sep-Dec 1939 | 1940 | 1941 | |
| UK | - | 10,000+ | 2,667,000 | 5 |

The No. 36 Grenade

The No. 36 grenade was a modern version of the Mills grenade that had been used in the First World War, the main purpose of the grenade was to kill enemy behind cover or drive them out so they could be dealt with small arms fire. The grenade was

heavy and had a range of between 25-35 yards depending on the strength of the thrower. The No. 36 grenade also had a large lethal area - 20 yards from the point of detonation with large fragments able to travel up to 300 yards.

The grenade could also be fired from a rifle and initially a 7 second fuse was provided so that they could be used either as a hand or rifle grenade but it was found that 7 seconds was too long and it was reduced to 4 seconds. The grenade weighed around 1.5lb and was filled with Baratol.

No. 36 Grenade statistics

| | |
|----------------|---------------------------------|
| Length | 4in(10.16cm) |
| Diameter | 2.4in(6.09cm) |
| Total Weight | 1.7lb(0.72kg) |
| Explosive Type | Baratol |
| Material | Steel |
| Delay | 4 seconds hand, 7 seconds rifle |

Production of No.36 Grenades by year (filled only) *No figures for December, **No figures for January

| - | Sep-Dec 1939 | 1940* | 1941** | |
|--------|--------------|------------|----------|---|
| UK | 244,000 | 10,777,127 | 4,023,00 | - |
| Canada | - | - | - | - |
| Other | - | - | - | - |

The No. 69 Grenade

The No.69 was a light offensive grenade that was constructed of Bakelite, it only weighted 0.75lb and had a very small burst area (only around 10 feet) so that it could be thrown while standing up. The weight of the grenade allowed several to be carried and it's main effect was to disorientate the enemy as it exploded with a very large noise. Initially some problems in manufacturing lead to a large number of blinds (duds) but these were solved.

Production of the grenades began around August 1942.

No. 69 statistics

| | |
|----------------|-------------------------------------|
| Length | 5.5in(13.97cm) |
| Diameter | 2.375in(6.03cm) |
| Total Weight | 0.81lb(0.37kg) |
| Explosive Type | Amatol 80/20, Lyddite or Baratol 20 |
| Filling Weight | 0.2lb(0.09kg) |

Production of No.69 Grenades by year (filled only)

| | | | |
|-------|--------------|------|------|
| - | Sep-Dec 1939 | 1940 | 1941 |
| UK | - | - | - |
| Other | - | - | - |

The No. 75 "Hawkins" Grenade

Around October 1940 Captain Hawkins submitted a design for a hand-thrown Anti-Tank mine. It would be thrown in the path of oncoming tanks and contained 2.5lb of explosive which would detonate on crushing. The weapon was described as follows...

"The container is a standard commercial rectangular tin, 4.75" x 3.75" x 2.25", filled with 2lb of gelignite and bound with wire to keep the lid on. Down the length of the largest side is soldered a tinplate pocket to

take the firing mechanism. The latter is a cartridge, 4.25 x 0.625" diameter, containing a cut-down No. 27 detonator, glass phials of sulphuric acid, sugar and potassium chlorate. Flash holes are drilled between the pocket and the main compartment of the tin."

Impact on a hard road was not enough to break the phials and the chances of the bomb landing on the firing cartridge and going off were remote, the bombs would in almost every case land lying on their largest side. On anything but very soft ground the weight of a tank was sufficient to crush the phials and detonate the mine. The bombs were a reasonable size and weight to throw, they could also be pulled across a road with a piece of string.

Preliminary Trials were carried out on the 23rd of October 1940, it was found the impact on throwing would not set off the detonators and the bombs always came to rest on it's largest face - the position in which it would most likely go off under the weight of a tank track. A live bomb containing 2lb of gelignite was placed under a Cruiser A.13. tank track, the bomb completely destroyed two track plates. In a second trial the bomb was placed askew of a length of Cruiser A.9. tank track, when struck the bomb moved sideways and then detonated - one track plate was completely destroyed and other cracked right across.

From these trials it was concluded that the underlying principle appeared to be sound enough to warrant further consideration

and that 2lb of gelignite was adequate against 9" tracks but it was understood that German tracks go up to 14" in width, which they might not be strong enough.

By May 1941 arrangements were made to produce 100 of the grenades for extensive trials, 50 would be dummy and 50 would be live, these were ready at the beginning of June, trials of these these were successful. After these trials the General Staff decided to place an order for 2.5 million Hawkins grenades.

No.75 statistics

| | |
|--------|-----------------|
| Height | 1.875in(4.76cm) |
|--------|-----------------|

| | |
|-------------------|----------------|
| Length | 6.5in(16.51cm) |
| Width | 3.625in(9.2cm) |
| Total Weight | 3lb(1.36kg) |
| Explosive Weight | 5lb(0.68kg) |
| Explosive Type | Ammonal |
| Material | Steel |
| Pressure required | 10lb(4.54kg) |

Production of Hawkins Grenades by year (UK only, Filled only)

| | | | |
|----|--------------|------|---------|
| - | Sep-Dec 1939 | 1940 | 1941 |
| UK | - | - | 242,000 |