

# **British Anti-Tank and Personnel Mines**

## **British Anti-Tank Mines**

### **A.T. Mine G.S. Mk II**

This mine was cylindrical in shape and was fired when the weight of a vehicle overcomes the leaf spring under the cover and allows the cover to force down on top of the fuse. These mines were used as defence against armoured cars, tanks and other vehicles - they were capable of severing the track of a light or medium tank but would struggle against a heavy tank. To assemble the mine it was placed in position, the shipping plug was removed and the fuse was screwed into the mine, to disarm the mine the fuse was simply removed.

### **A.T. Mine G.S. Mk III**

The Mk III again was cylindrical in shape but was taller and narrower than the Mk II mine, it was also lighter reducing the explosive content. To detonate the mine, "the vehicles weight forces the cover against the striker, shearing the shear wire and allowing the striker to be forced by its spring against the percussion cap thus initiating the explosive train". This mine was again for use against light/medium tanks, armoured cars and other vehicles. To arm the mine the fuse was inserted, the safety pin was removed and the cover placed on over the mine.

### **A.T. Mine G.S. Mk IV**

Again cylindrical in shape and was detonated by pressure on the pressure plate which forces the striker through the shear wire, the striker spring then forces the striker into the percussion cap detonating the mine. To assemble and arm the mine, the adhesive tap binding the pressure plate to the mine

was removed, then the plate was removed. The mine as then placed into the ground and the paper sealing covering the fuse well was removed, the fuse was then inserted and the safety pin removed.

### **A.T. Mine G.S. Mk V**

The Mk V was the more common British anti-tank mine of the Second World War, it consisted of three main components - the mine body, the fuse and the spider. It was also cylindrical in shape. The mine was detonated by pressure on the spider which is transmitted to the pressure cap, this forces the striker through the shear wire, the striker is then forced by the spring into the detonator firing the mine.

These mines were used for defence against tanks, armoured cars and other vehicles. These mines

were effective against the majority of tanks, however larger tanks such as the Tiger posed a more difficult target. A single mine would probably be enough to break or severely damage a track, two mines on other hand would completely sever the track and cause extensive damage to the drive train making field repair almost impossible.

### **A.T. Mine E.P. Mk II**

These mines were mushroom shaped and detonation was caused by pressure forcing the plunger through the shear pin and down against the ampoule cartridge crushing the cartridge causing a chemical reaction which fires the detonator triggering the mine. Disarming the mine was not advised and it usually suggested that the mine be detonated in place. They cannot be reused.

## **A.T. Mine E.P. Mk V**

Mushroom shaped, these mines were detonated with pressure on the mine cover forcing the plunger through the shear wire and down onto the ampoule cartridge, crushing it. The chemical reaction fires the detonator detonating the booster charge which detonates the main charge of the mine.

## **A.T. Mine E.P. Mk VI**

Again mushroom shaped, detonation was caused by pressure on the mine cover forcing the striker through the shear wire, the striker spring then forces the striker into the percussion cap detonating the mine. To arm the mine the cover was removed, the mine was placed into position and the fuse inserted, the safety pin was then removed and the cover replaced.

# Anti-Tank mine specifications

Mine	A.T Mine	G.A.S. Mine	Mk I G.A.S. Mine	Mk II G.A.S. Mine	Mk III G.A.S. Mine
Diameter	7.5in(19.05cm)	6in(15.24cm)	8in(20.32cm)	8in(20.32cm)	8in(20.32cm)
Height	3.25in(8.25cm)	5.25in(13.33cm)	5in(12.7cm)	4in(10.16cm)	4in(10.16cm)
Total weight	8.5lb(3.86kg)	6.25lb(2.55kg)	5.12lb(2.32kg)	5.12lb(2.32kg)	5.12lb(2.32kg)
Explosive weight	4lb(1.81kg)	-	8.25lb(3.75kg)	8.25lb(3.75kg)	8.25lb(3.75kg)
Explosive type	TNT or Baratol	TNT	TNT or Baratol	TNT or Baratol	TNT or Baratol
Material	Steel	Steel	Steel	Steel	Steel
Pressure required	350lb(159kg)	350lb(159kg)	350lb(159kg)	350lb(159kg)	350lb(159kg)

# British Anti-Personnel mines

## A.P. Shrapnel Mine Mk I and II

This mine consisted of an outer mine canister, an inner case, a detonator-pistol mechanism and a

cartridge-pistol mechanism. The outer mine canister was a container for the inner case and acted like a small mortar to propel the inner case into the air. The inner case was a cylindrical container for the explosive charge. The mine was detonated by a pull for four pounds or more on the trap wire which removed the trip plate from the cartridge pistol allowing the striker spring to force the striker into the cartridge, this ballistic charge then forces the inner case into the air releasing the lever arm, freeing the striker in the detonator pistol, which is forced into the detonator. The detonator then fires the main charge.

These mines were designed to cause casualties up to 30 yards. To arm the mine, the transit screws holding the inner case in the outer canister were removed, the cartridge pistol was unscrewed and the ballistic cartridge inserted. The cartridge pistol was replaced and the detonator pistol removed, the detonator pistol was replaced with the firing lever engages in the recess on the outer canister. The mine was then placed into the ground and the loose wire trap attached to the cartridge pistol. The cartridge and detonator pistol safety pins were then removed. To neutralise the mine the safety pistols were replaced and the trap wire cut.



## A.P. Mine No. 3

The No.3 consisted of a cylindrical, corrugated-steel outer casing container the explosive main charge and a central tube threaded into the base of the mine body for the insertion of the fuse mechanism and the propellant charge. The mine detonates when sufficient pressure is placed on the pressure plate to tilt or force the operating sleeve downward. This forces the ball-retaining sleeve down until the retaining balls can move into the deep upper groove. The striker is then released and initiates

# the explosive system.

When the mine is triggered the safety fuse is ignited and burns for 1-2 seconds, this allows time for the enemy to move forward and remove his foot from the mine. The flash from the safety fuse ignites the propellant charge and projects the mine into the air. The mine was fired about 2-4 feet into the air and had a lethal range of up to 30 yards.

## **A.P. and Anti-Tire mine**

This mine resembled a small round ointment box, it consisted of two telescoping steel halves, the smaller bottom half houses the ignited while the larger top half contains the doughnut-shaped explosive charge which is glued to the under side of the top of a sticky adhesive substance. When pressure is applied to the mine the detonator holder slides down over the cap-holder sleeve, compressing the striker spring. The striker is also forced through the copper shear wire. When the shear wire is sheared the spring forces the striker against the cap, flame escapes outward through the blast holes igniting the two round detonates and the main charge.

The mine was designed for airborne forces to be placed in fields and along the edges of roads. The charge was sufficient to remove a mans foot or rupture a vehicle tire. They were easily detected by a mine detector.

## Anti-Personnel mine specifications

A.P. Mine	Grapple Mine	A.P. Mine	A.P. Mine	A.P. Mine
3.5in (8.825cm)	3.5in (8.825cm)	6.35in (16.125cm)	6.35in (16.125cm)	7.3in (18.54cm)
5.5in (13.975cm)	5.5in (13.975cm)	15.45in (39.19cm)	15.45in (39.19cm)	16.625in (42.24cm)
1lb (0.45kg)	1lb (0.45kg)	1lb (0.45kg)	1lb (0.45kg)	1lb (0.45kg)
1lb (0.45kg)	1lb (0.45kg)	1lb (0.45kg)	1lb (0.45kg)	1lb (0.45kg)
Amatol	Amatol	TNT	50/50 Picotol	50/50 Picotol
Steel	Steel	Steel	Sheet steel	Sheet steel
4lb (1.8kg)	4lb (1.8kg)	3.18-17.27kg	3.18-17.27kg	2lb (0.9kg)

**Production of mines by year  
(UK only, filled only) \*no  
figures for anti-tank mines  
between December 1940 and  
May 1941, shrapnel and  
personnel mine figures are  
incomplete.**

	1940	1941	1942	1943
Tank Mines Mk I	4,408	1866,000	281,000	
Tank Mines Mk II	100,000	829,000	835,000	
Anti-Tank Mines Mk V	-	5,126,000	5,670,000	
Shrapnel Mines	-	-	-	2,370,000
Personnel No.3 Mk I	-	-	-	

# Sources - AVIA 46 163