Australian Government
Department of Defence

DEFENCE UNEXPLODED ORDNANCE WEBSITE
ORDNANCE INFORMATION SHEET

ALL UXO MAY BE HAZARDOUS IF DISTURBED
DO NOT TOUCH – TAKE A PHOTO – MARK THE LOCATION – CALL THE POLICE

ROCKET – 66MM ANTI-ARMOUR

Description

- The 66mm M72 Light Anti-Armour Weapon (66mm LAW) is a US-designed, portable, pre-loaded, one shot, unguided anti-tank weapon. Introduced into service in the 1960s to replace the M20 'Super Bazooka', it was used by during the Vietnam War and remains in use today. 10 variants of this weapon have been made (M72A1–M72E10). The Australian designation used in Vietnam was the (M72) L1A2 F1 Short Range Anti-Armour Weapon (SRAAW); the current weapon in use is the M72A6.
- The rocket motor is solid fuel which burns out before it leaves the launcher. Fins spring out of the projectile after firing to stabilise the flight. The launcher was discarded after use.
- The main rockets available for the 66mm LAW include the following:
  - **High Explosive Anti-Tank** (HEAT) - Uses a piezoelectric, Point Initiating Base Detonated (PIBD) fuze. Contains approx. 450g of Octol High Explosive.
  - **Sub-Calibre Practice Rocket** (SCPR) - for training; utilised the reusable M190 launcher and the 37mm M73 sub-cal practice rocket. The practice projectile contains a spotting charge of 1.5g of composition mix M80 explosive. A 21mm sub-calibre training rocket is also available.
- Unexploded items of this type are most often found in/near areas used by the Army for infantry live firing practices – typically on or just below the ground surface. The piezo-electric nose fuze is highly sensitive – even to sudden changes of temperature.

Technical Data

- Munition length : approx. 630 mm (unarmed) to 880 mm (armed/extended)
- Projectile length : HEAT - approx. 510 mm; 35mm SCPR – approx 225 mm
- Projectile diameter : HEAT - approx. 66mm; 35mm SCPR – approx 35 mm
- Total weight : HEAT Projectile – approx 1.0-2.1 kg; 35mm SCPR – approx 135-145 g
- Fuse/Burster : HEAT - Piezoelectric, Point Initiating Base Detonated (PIBD) fuze.
- Filling : HEAT - approx 450 grams of high explosive (Octol) depending on munition.
  SCPR - 1.5-10.0 g of composition mix M80 explosive
- Identification :
  - The launcher is made of aluminium and plastic and olive drab in colour with white writing.
  - The 66mm HEAT projectile is aluminium and consists of the rocket motor (painted brown) and the warhead (painted black). Lettering on the projectile is normally in yellow.
  - The 35mm SCPR spotting head and fins are plastic painted black; the remainder of the rocket is olive drab. A blue band appears on the forward end of the rocket motor. On later production rockets, the spotting head is painted blue and the fins are painted brown.
  - It can be difficult to distinguish between dangerous and safe items - **treat all found munitions as dangerous**.

Images

Figure 1 - M72 (L1A2F1) Rocket Launcher in closed/unarmed position (AWM ID REL22751)

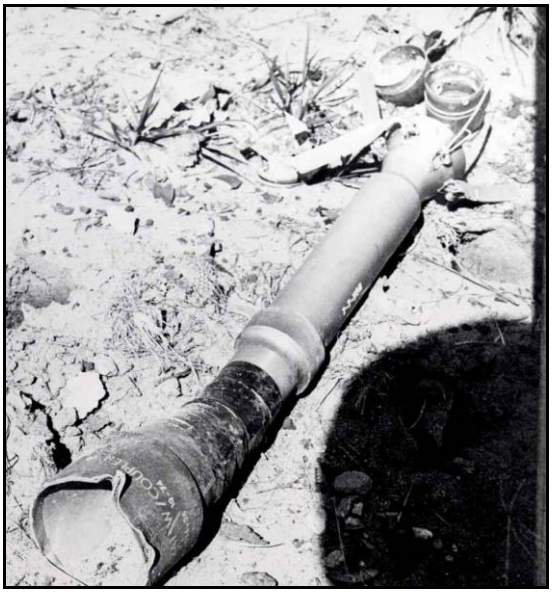

Figure 2 - Fired and ruptured M72 rocket

Figure 3 - 35mm SCPR projectile

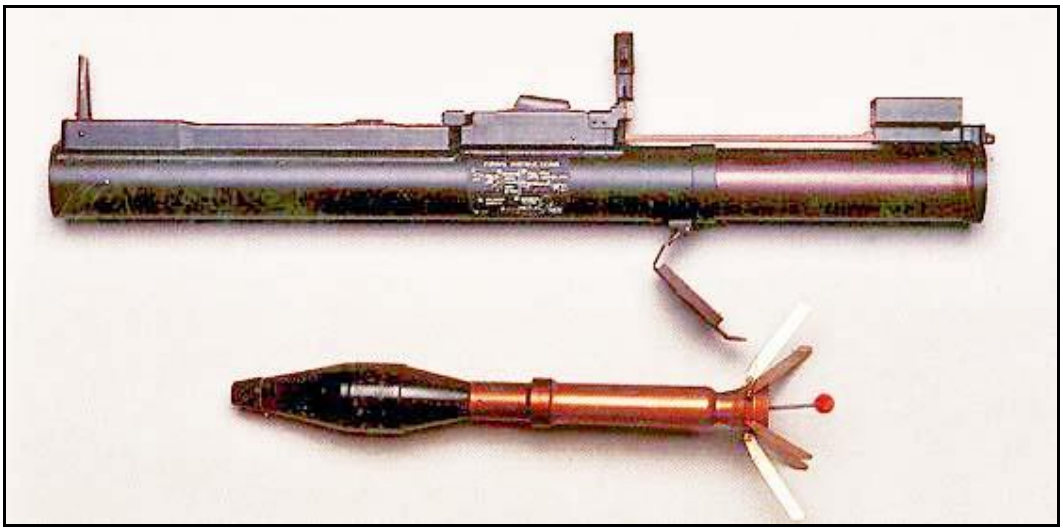

Figure 4 - Top: M72 Rocket Launcher in extended/armed position. Bottom: 66mm HEAT rocket

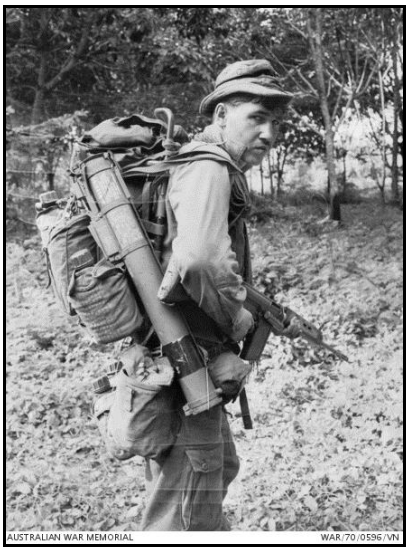

Figure 5 - Australian soldier R with 66mm M72 LAW slung over shoulder – Vietnam, 1970 (AWM ID WAR/70/0596/VN)

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ROCKET - 84 MM ANTI-ARMOUR

Description

- The 84mm "Carl Gustav" is a portable, reusable, single shot, shoulder-fired anti-tank recoilless rifle. Variants include the M1 (1946), M2 (1964), M3 (1991), M4 (2012). The 84mm is produced by Saab Bofors Dynamics and is known in Australia as the 'Carl Gustav', M2 - Short Range Anti-Armour Weapon (SRAAW) or M3 - Medium Direct Fire Support Weapon (MDFSW); in the US, the Multi-role Anti-armour Anti-tank Weapon System (MAAWS). The weapon remains in use today.
- Munitions commonly used with the 84mm Carl Gustav include the following:
  - **High Explosive** (HE) – The 441/441B projectile is intended for use against troops, machine gun posts and vehicles; used by the Australian Army during the 1970s to the present.
  - **High Explosive Anti-Tank** (HEAT/751) and **High Explosive Anti-Tank - Rocket Assisted Projectile** (HEAT-RAP/551) - May be fuzed for point detonation, delay or airburst. Some are composed of tandem charges. RAP has a rocket booster motor.
  - **High Explosive Dual Purpose** (HEDP/502) – Used against fortifications. The delay base fuze allows the projectile to penetrate prior to activation. Currently in use.
  - **Area Defence Munition** (ADM/401) - Contains 1100 flechettes; shell contains no explosives - flechettes are released by gas pressure.
  - **Anti-Structure Munition** (ASM/509) - Used for destruction of buildings and structures; currently in use.
  - **Smoke** (Smk/469) - titanium tetrachloride and calcium silicate compound; currently in use.
  - **Illumination** (Illum/545) - Sodium flare compound star shell; suspended by parachute; currently in use.
  - **Target Practice, Tracer** (TPT/141) and **Target Practice Rocket Assisted Projectile** (TP RAP/551) – have no explosive content except for the rocket booster and tracer. Currently in use.
- Unexploded items of this type are most often found in/near areas used by the Army for infantry live firing practices - typically on or just below the ground surface. Some contain piezo-electric fuses which can be extremely sensitive to shock and sudden change of temperature as a UXO.

Technical Data

- Munition length : approx. 440-530 mm
- Munition diameter : approx. 84mm
- Munition weight : approx 3.0-4.0 kg
- Fuse/Burster : May contain a piezo-electric fuse and/or base detonation fuse.
- Filling : varied between 500 to 600 grams of high explosive or other filler.
- Identification : The round is made of aluminium and steel for the HE rounds. Generally painted black. The projectile may have one or more bands of colour. Yellow, red or green bands/stripes were most often used to denote HE munitions however other colours may have been used or colours may have faded over time. It can be difficult to distinguish between dangerous and safe items - **treat all found munitions as dangerous**.

Images

Figure 1 - Carl Gustav L14A1 Anti-Armour Weapon (M2) of the type used by Australian Army during the Vietnam War c. 1965 (AWM ID RELAWM40992.001)

Figure 2 - 84mm HE

Figure 3 - 84mm HEAT

Figure 4 - 84mm Illum

Figure 5 - 84mm TP/Prac

Note: Shapes and colours as shown above have changed over time.
Newer variants may have different shapes or colours

Figure 6 – 84mm Smoke

Figure 7 - Australian troops firing the 84mm Carl Gustav

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PROJECTILE – 106MM RECOILLESS RIFLE

Description

- The 106mm Recoilless Rifle (RCL) is a breech-loaded, single-shot, man-portable, crew-served recoilless rifle. It can be used in both anti-tank and anti-personnel roles. Developed in the 1950s from the M27 105 RCL, it was adopted as a medium range anti-tank gun by the Australian Army 1961 to replace the 6 pr being used. Recoilless rifles were used in Vietnam and were installed on Landrovers as a mobile, medium range anti-tank weapon called a "Gunbuggy" - some were still in service into the mid-1990s.
- The following projectiles were used with the 106mm RCL (not all in Australia):
  - **High Explosive Anti-Tank** (HEAT) – Piezo-electric, Point Initiating Base Detonated (PIBD) fuze; some rounds may contain a tracer element. Steel shell contains 1.0-1.3 kg of high explosive.
  - **High Explosive Plastic – Tracer** (HEP-T) – Base detonated fuze with tracer. Steel shell contains 3.5 kg of high explosive.
  - **Anti-Personnel – Tracer** (APERS-T) - Filled with Flechettes, Tracer. Piezo-electric, Point Initiating Base Detonated (PIBD) fuze, Aluminium shell contains 41 g of HE.
  - **Practice** (Prac) – May be fitted with a tracer; contains paraffin as filler.
- Unexploded items of this type are most often found in/near areas used by the Army for live firing practices – typically on or just below the ground surface. The piezo-electric fuze is highly sensitive – even to sudden changes of temperature.

Technical Data

- Munition length : approx. 936-1090 mm.
- Projectile length : approx. 400-510 mm.
- Projectile diameter : 105 mm (described as 106mm to prevent using incompatible ammunition).
- Total weight : Munition – approx 10-16 kg; projectile – approx 5-10 kg.
- Fuse/Burster : Piezoelectric, Point Initiating and/or Base Detonated fuze.
- Filling : approx 0.75-3.5 kg of high explosive depending on projectile.
- Identification :
  - The cartridge is of perforated steel. The projectile is normally steel.
  - The projectile may be painted olive drab or black with yellow lettering. APERS projectiles may have white diamonds painted around the projectile.
  - It can be difficult to distinguish between dangerous and safe items - **treat all found munitions as dangerous**.

Images

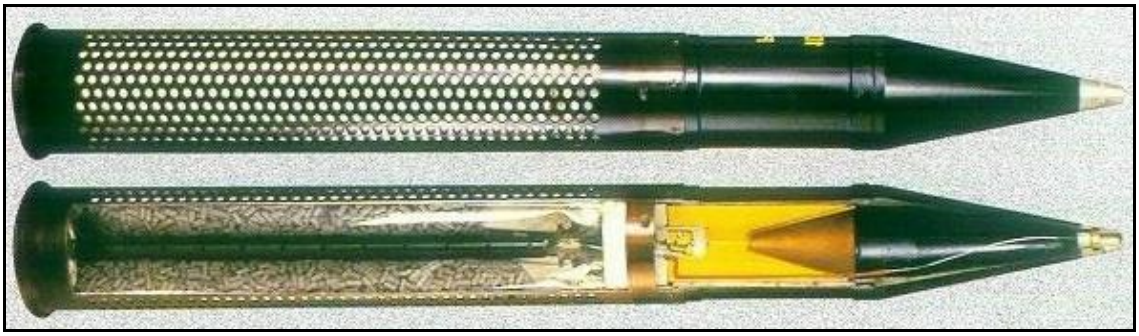

Figure 1 - HEAT complete munition and cutaway

Figure 2 - Unexploded 106mm HEAT projectile

Figure 3 - Unexploded 106mm APERS-T projectile

Figure 4 - Australian soldiers from 3 RAR load a HEAT munition into an M40A1 106mm Recoilless rifle mounted on a Land Rover 1/4 ton 4x4 truck (AWM ID P04546.009)

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ROCKET – 3.5 INCH (SUPER BAZOOKA)

Description

- The US 3.5 inch Rocket Launcher, designated the M20 or "Super Bazooka", was a variant on the original WWII US M1 rocket launcher ('Bazooka'). It is a man-portable, shoulder-fired, recoilless, anti-tank, rocket launcher that electrically fired a 3.5" rocket propelled warhead.
- Developed near the end of WWII, it saw service with Allied forces (including Australia) in Korea and in Vietnam before the 66mm M72 LAW and 106mm RCL became more prevalent.
- Three types of projectile were typically available for the 3.5" Bazooka:
  - **High Explosive Anti-Tank** (HEAT) - (M28A2) Point Initiating Base Detonated (PIBD) fuze. Contains a shaped copper cone and high explosive filler.
  - **Smoke/White Phosphorus** - (Smk/WP) - (M30) Point Initiating Base Detonated (PIBD) fuze; contains White Phosphorus (1060 g) and an explosive bursting charge.
  - **Target Practice** - (TP) - (M29A2) Inert - filled with plaster of paris (or similar) as an inert filler; no explosive content apart from rocket motor.
- Unexploded items of this type are most often found in/near areas used by the Army for infantry live firing practices. The relatively shallow firing angle usually results in UXO typically being found on or just below the ground surface.

Technical Data

- Projectile length : approx. 598 mm
- Projectile diameter : approx. 89 mm
- Total weight : Projectile – approx 4.0-4.1 kg
- Fuse/Burster : Point Initiating Base Detonated (PIBD) fuze
- Filling : approx 0.85-1.0 kg of high explosive or smoke chemical
- Identification :
  - The launcher is an aluminium/metal alloy tube, open at both ends and painted olive drab or dark green.
  - The projectile consists of a rocket motor (painted olive) and a steel or cast iron warhead usually painted black/green/olive drab (HE), grey (Smk) or blue (Prac) – other colours may have been used.
  - Writing on the launcher is typically white and on the projectile yellow (HE) or white (Prac).
  - It can be difficult to distinguish between dangerous and safe items - **treat all found munitions as dangerous**.

Images

Figure 1 - Australian infantry soldiers from 3 RAR firing 3.5 inch Bazooka during manoeuvres – Japan, 1950 (AWM ID 146733)

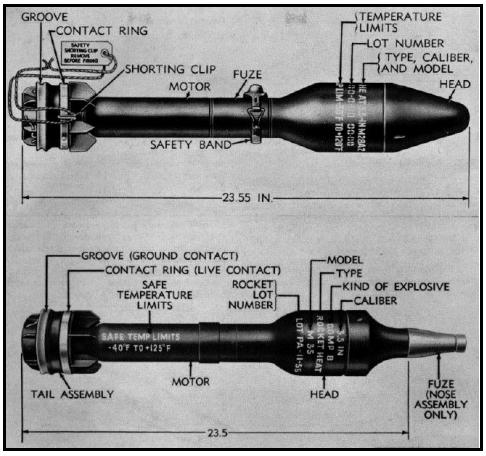

Figure 2 - Typical 3.5" rockets

Figure 3 - M20 3.5 inch Mk 2 Rocket Launcher c. 1959 (AWM ID REL37101)

Figure 4 – 3.5" HEAT Rocket, M28A2

Figure 5 – Unexploded 3.5" Smoke/WP Rocket, M30

Figure 6 - Display item - 3.5" Practice/TP Rocket, M29A2

Figure 7 - Remnants of a 3.5" Practice/TP Rocket, M29A2