

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

PROJECTILE – 4 INCH (NAVAL)

Description

The 4 inch naval gun was widely used by Australia, US and UK from the late 1800s, throughout WWI, WWII, Korean War and into the 1960-70s. On larger warships, the 4" gun was often a secondary gun; on medium and smaller warships (e.g. destroyers, corvettes), it was often the main armament (The 4" gun was still in use on HMAS *Wagga* until it was retired in 1960). The 4-inch gun was also a deck gun for RAN and RN submarines (RN until 1974). The US 4"/50 calibre Mk 9 gun was the standard gun for US destroyers through WWI and the 1920s and on some submarines during WWII. Many Australian, US and UK merchant ships were fitted with the 4" gun during WWII; it was also used as an anti-aircraft gun on some warships and as a coast defence gun in Australia.

Many variants of the 4 inch projectile have been developed – both 'Breech Loading' (BL) and 'Quick Firing' (QF). The more common types of projectiles likely used in Australia included the following:

- **High Explosive** (HE) 'Common' (gunpowder), 'Common Lyddite' & 'High Capacity' (HC); normally contained a nose and base fuse and explosive main charge.
- **Armour Piercing** (AP), **Semi Armour Piercing** (SAP) naval AP and SAP projectiles were often base-fuzed and contained explosive or a shaped charge.
- **Illumination** (Illum), **Signal** (Star) and **Smoke** (Smk) usually contain a fuze, burster or expelling charge and potentially hazardous chemicals or incendiary compositions.
- **Practice or Target Practice** (Prac or TP) normally contained a nose fuse and low explosive (gun powder) and/or smoke composition.
- Frequently used by Australian, US and UK naval and coast defence forces in maritime areas but also occasionally fired onto Australian shorelines for practices. Large quantities of 4 inch munitions were stored at Australian, US and UK navy depots in Australia during and after WWII many were disposed onshore and offshore after WWII. UXO are more likely to be encountered offshore (e.g. during fishing or dredging activities) but may also occasionally be found onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 1.5m).

Technical Data

- Munition length : approx. 1000-1200 mm (depending on type)
- Projectile length : approx 400-475 mm (depending on type)
- Projectile Diameter : approx maximum 100-102 mm (approx 4 in)
- Projectile weight : approx 13.2 (AA) 17.4 kg (SAP)
- Fuse/Burster : Nose/base fuse and bursting charge which may be easily detonated
- Filling : HE approx 520-2200 g explosive (e.g. Lyddite, Amatol, TNT, Expl D)
 - Others various incendiary, smoke or chemical compositions
- Identification : Hazardous variants of the projectile are often painted yellow, green, black or grey with bands of yellow, red, green or blue. Caution – this munition has been widely used by various countries over a long period of time - other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 - RAN sailor loading the 4 inch gun of the troopship Ormiston during gunnery practice (AWM ID number 073490)



Figure 2 - British 4" star shell - 1943



Figure 3 - US 4"/50 cal. projectiles (L to R) 'Common', 'High Capacity' (HC), Illum, Target



Figure 4 - HMAS Australia firing 4" QF Mk XVI Twin AA gun - 1943 (AWM ID number 029555)



Figure 6 - Personnel of Fort Pierson, Hobart Coast Artillery manning the 4-inch gun – 1943 (AWM ID number 051471)



Figure 5 - HMAS Sydney II Debris Field Unexploded projectiles - possibly 4-inch (AWM ID number P09281.836 & P09281.840, © Australian War Memorial, licensed under CC BY-NC



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PROJECTILE – 4.7 INCH (NAVAL)

Description

- The 4.7 inch naval gun was widely used by Australia and UK from the late 1800s throughout WWI, WWII, Korean War and into the 1950s-60s primarily on smaller warships (e.g. N & Q class destroyers), Armed Merchant Cruisers and troopships. In earlier years, some 4.7 inch naval guns were also mounted on wheeled carriages to provide the British Army with a long range gun these saw service in the Boer War and at least one served with Australians at Gallipoli. During WWII, 4.7" naval guns were manufactured in Australia and, in addition to being armament for the ships, were deployed at some coastal defense batteries along the Australian coast.
- Many variants of the 4.7 inch projectile have been developed both 'Breech Loading' (BL) but more often 'Quick Firing' (QF). The more common types of projectiles likely used by or in Australia included the following:
 - **High Explosive** (HE) '*Common*' (gunpowder), '*Common Lyddite*', '*Common Pointed*' (CP) and '*Shrapnel*'; all normally contained a nose or base fuse and explosive main charge.
 - **Armour Piercing** (AP), **Semi Armour Piercing** (SAP) naval AP and SAP projectiles were often base-fuzed and contained explosive or a shaped charge.
 - **Illumination** (Illum), **Signal** (Star) and **Smoke** (Smk) usually contain a fuze, burster or expelling charge and potentially hazardous chemicals or incendiary compositions.
 - **Practice or Target Practice** (Prac or TP) normally contained a nose fuse and low explosive (gun powder) and/or smoke composition.
- Frequently used by Australian and UK naval and coastal defence forces in maritime areas but also occasionally fired onto Australian shorelines for practices. Quantities of 4.7 inch munitions were disposed onshore and offshore after WWII. UXO are more likely to be encountered offshore (e.g. during fishing or dredging activities) but may also occasionally be found onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 1.5m).

Technical Data

- Munition length : approx. 750-1200 mm (depending on type)
- Projectile length : approx 360-450 mm (depending on type)
- Projectile Diameter : approx maximum 120 mm (approx 4.7 in)
- Projectile weight : approx 13.5-22.7 kg (many variations in earlier Marks)
- Fuse/Burster : Nose or base fuse and bursting charge which may be easily detonated
- Filling : approx 500-3100 g explosive (e.g. Lyddite, Amatol, TNT)

Others - various incendiary, smoke or chemical compositions

Identification : Hazardous variants of the projectile are often painted yellow, green, black or grey with bands of yellow, red, green or blue. Caution – this munition has been widely used over a long period of time - other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 - 4.7" complete munitions. Top - AP, Bottom – Practice



Figure 3 - Australian navy crew at drill on a 4.7 inch MK XIX gun on the destroyer HMAS Bataan – Korea, 1952 (AWM ID number P00444.206; cropped from original)



Figure 2 – 4.7" projectiles – HE and Smoke Base Ejection



Figure 4 - Australian Coast Gun crew standing by their 4.7 inch QF Mark IV* naval gun at Fort Lytton, Qld – 1943 (AWM ID number 060050)



Figure 5 - Australian infantrymen hauling the 4.7 naval gun up the slope at Anzac (AWM ID number J06124)



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PROJECTILE – 5 INCH (NAVAL)

Description

First developed by the British in the late 1870s but discontinued in favour of the QF 4.7 inch. During WWII, 5 inch guns were one of the most widely used guns of the US Navy and also used on some British, Dutch, NZ and Australian warships (e.g. *HMAS Perth, Hobart, & Brisbane –* all decommissioned 1999-2001), auxiliaries and merchant vessels. Early types of the 5" were surface-to-surface (low angle) or anti-aircraft (AA) until the Dual Purpose 5" gun was developed. 5 inch ammunition is currently the basic ammunition for the US Navy's main armament systems and is the main armament for ANZAC-class frigates (Australia & NZ) and Australian Hobart class destroyers.

Many variants of the 5 inch projectile have been developed. A small sample of the more common, generic types of projectiles likely used by or in Australia are listed below:

- **High Explosive** (HE) 'Common' (gunpowder), 'Special Common' or 'SP Common', 'High Capacity' (HC) all normally contained a nose or base fuse and explosive main charge. Fuzes typically included Point Detonating, Variable Time, Controlled Variable Time and Infrared Fuze.
- **Anti-Aircraft Common** (AAC) and with **Proximity Fuze** (AAVT) similar to HE projectiles but usually fitted with a Base Detonating and Time/Variable Time (VT) nose fuze.
- **Armour Piercing** (AP), **Semi Armour Piercing** (SAP) naval AP and SAP projectiles were often base-fuzed and may contain high explosive or a shaped charge.
- Illumination (Illum or 'Star'), Smoke (Smk or 'WP') and Chaff (radar jamming) usually contain a fuze, burster or expelling charge and potentially hazardous chemicals or incendiary compositions. May use a parachute in order to slow their descent.
- Mostly used by Australian and other naval forces (US, Japan) in Australian maritime areas but also fired onto shorelines for practices or exercise. Quantities of 5 inch munitions may also have been disposed onshore and offshore after WWII. UXO may be encountered offshore (e.g. during fishing or dredging activities), onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 2.0m).

Technical Data

- Projectile length : approx. 500-665mm (depending on type)
- Projectile Diameter : approx maximum 127 mm (approx 5 in)
- Projectile weight : Many variations approx 22.5-32.0 kg
- Fuse/Burster : Many variations nose and/or base fuse, VT fuze, bursting charges which may be easily detonated.
- Filling : HE types approx 0.9-3.8 kg high explosive

Others - various incendiary, smoke or chemical compositions

Identification : Hazardous variants of the projectile are often painted yellow, green, black or grey with bands of yellow, red, green or blue. Caution – this munition has been widely used over a long period of time by numerous nations - other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 – Cutaways of 5 inch projectiles. L to R: Common, AA Common, Illum, Target



Figure 2 - Australian Navy personnel load 5 inch projectiles during a Naval Gunfire Support exercise - Exercise Talisman Sabre - Shoalwater Bay Training Area, QLD, 2011 (Note differing colours denoting different fillers)



Figure 4 - HMAS Perth with 5 inch gun

Figure 3 - HMAS Perth provides Naval Gunfire Support with her 5 inch gun exercise Talisman Sabre 2013 (*Perth* fired around 100 rounds from its 5-inch gun) - QLD, 2013



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PROJECTILE - 6 INCH/152MM (NAVAL)

Description

- The Breech Loading and Quick Firing 6 inch (QF 6 in & BL 6 in/US 152mm) naval guns were widely used by Australia, NZ, UK and US from the late 1800s, through WWI, WWII, Korean & Vietnam Wars and into the 1970s on many warships, auxiliaries, gunboats, Armed Merchant Cruisers, landing ships and as coast defence guns. In the late 1800s/early 1900s, many ships' guns were converted to QF to use the same munitions as the QF 6 inch guns (designated QFC for "QF Converted").
- Australian ships which used the 6" gun included HMAS Paluma, HMAS Protector, HMAS Gayundah, HMVS Victoria, (all late 1800s/WWI era); HMAS Encounter, HMAS Sydney I, HMAS Melbourne I, HMAS Brisbane I (all WWI-mid-1930s era); HMAS Adelaide I (1915-1945), HMAS Sydney II, HMAS Hobart I, HMAS Perth I (all WWII era) along with others. 6" guns were widely used as static coast defence guns around Australia from the 1800s onwards. During WWII, 6" munitions were also manufactured in Australia.
- Many variants of the 6 inch projectile have been developed. The more common types of projectiles likely used by or in Australia include the following:
 - **High Explosive** (HE) '*Common*' (gunpowder), '*Common Lyddite*', '*Common Pointed*' (CP) and '*Shrapnel*'; all normally contained a nose or base fuse and explosive main charge.
 - **'Shot' Armour Piercing** (AP), **Semi Armour Piercing** (SAP) naval AP and SAP projectiles were often base-fuzed and may contain explosive or a shaped charge.
 - **Shrapnel** (Shrap) used in early periods; contains a small high explosive charge and pellets.
 - **Illumination** (Illum) and **Smoke** (Smk) usually contain a fuze, burster or expelling charge and potentially hazardous chemicals or incendiary compositions.
- Frequently used by Australian, UK and US naval and coastal defence forces in maritime areas but also occasionally fired onto Australian shorelines for practices. Quantities of 6 inch munitions were disposed onshore and offshore after WWII. UXO are more likely to be encountered offshore (e.g. during fishing or dredging activities) but may also be found onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 2.0m).

Technical Data

- Projectile length : approx. 420-765 mm (depending on type)
- Projectile Diameter : approx maximum 152 mm (approx 6 in)
- Projectile weight : approx 36 kg (80lb); 43-59 kg (100lb many variations)
- Fuse/Burster : Nose or base fuse and bursting charge which may be easily detonated
- Filling : HE approx 0.9-6.5 kg explosive (e.g. Lyddite, Amatol, TNT, etc)
 - Others various incendiary, smoke or chemical compositions
- Identification : Hazardous variants of the projectile are often painted yellow, green, black or grey with bands of yellow, red, green or blue. Caution this munition has been widely used over a long period of time by numerous nations other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 - 6" Mk IV Common Lyddite projectile



gure 2 - 6" Mk VIIA Common Lyddite projectile



Figure 3 - 6" MK XIIA QNT Common Lyddite projectile with tracer



Figure 4 - 6" Mk IX Shrapnel projectile



Figure 5 - 6" Armour Piercing projectiles stacked before being filled - 1942 (AWM ID number 013182)



Figure 6 - Unexploded 6" projectile



Figure 7 - Twin 6 inch guns on the modified Leander class cruiser HMAS Perth - 1940 (AWM ID number 005237/09)



Figure 8 - 6" fixed coastal defence gun – Albany, WA, 1943 (AWM ID number 029663)



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PROJECTILE – 3 POUNDER (NAVAL)

Description

- 3 pounder (3 pr) guns were used by British, US and Australian navies from the late 1800s into the 1950s. Originally supplied by 'Hotchkiss', these were used as light naval guns, coast defence guns and occasionally as anti-aircraft guns. During WWI, the Hotchkiss gun was progressively replaced by the more powerful QF 3 pounder Vickers gun. Both the Hotchkiss and Vickers 3 pr guns continued to be used during WWII on smaller vessels, merchant vessels, some auxiliaries, as coast defence guns and in some early Australian armoured vehicles. During and after WWII, the 3 pr was retained as a saluting gun on larger warships and was also used for gunnery practice until the 1950s.
- The gun salute originates from a warship's approach to a foreign port or allied ship when it took some time to reload a muzzle-loaded cannon. Discharging its guns showed the ship posed no threat, and the port or other ship would reciprocate by discharging its guns in reply. The 3 pr saluting gun is still used today by modern navies (including Australia) for purely ceremonial purposes.
- Limited types of projectile were developed for the 3 pr guns the most common being the following:
 - High Explosive (HE) 'Common' (gunpowder), 'Common Lyddite' or 'High Explosive' (HE) all normally contained a nose or base fuse and explosive main charge. Fuzes typically included Point Detonating and/or Base Detonating. Some also contained a tracer.
 - "Steel Shell" (AP) the British term for the Hotchkiss 3 Common Pointed (CP) shells typically filled with gunpowder, had base percussion fuzes and a heavy pointed nose.
 - Blank Cartridges current use; contains no projectile (cartridge case only).
- Mostly used by the Australian Navy, Merchant Navy and coast defence units in Australian maritime areas but possibly also fired onto shorelines for practices or exercise. Quantities of 3 pr munitions were also disposed after WWII. UXO may be encountered offshore (e.g. during fishing or dredging activities), onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 0.5m).

Technical Data

- Projectile length : approx. 170-180 mm (depending on type)
- Projectile Diameter : approx maximum 47 mm

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- Projectile weight : approx 1.5-1.6 kg
- Fuse/Burster : nose or base fuze and bursting charges which may be easily detonated.
- Filling : HE types approx 100-120 grams of explosive
- Identification
 - The projectile is usually steel and often painted black.
 - Some projectile may have bands of colour (red, yellow, green) however colours have changed over time and between countries.
 - Caution this munition has been widely used over a long period of time by numerous nations - other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 - HMA Harbour Defence Motor Launch (HDML) ML1327 with 3 pr gun mounted forward - Hobart, 1944 (AWM ID 301824)



Figure 3 - 3 pr Mk V N.T. Common Lyddite projectile, 1914



Figure 2 - QF 3 pr Hotchkiss coast defence gun - Sydney, 1942 (AWM ID 069593)



Figure 4 - A Model 1886 3 pr Hotchkiss gun and mount with which motor boats were armed - c 1915 (AWM ID A00911)



Figure 5 - A ceremonial 21 gun salute from HMAS Sydney as she passes Bradley's Head is responded by the Garden Island Saluting Battery (Published on 06 October 2013 SGT Dave Morley - author, WOIS Shane Cameron photographer)



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PROJECTILE – 6 POUNDER (NAVAL)

Description

- A variety of 6 pounder (6 pr) guns were used by Commonwealth navies from the late 1800s into WWII – primarily the '6 pr Nordenfelt', '6 pr 8 cwt Hotchkiss' and '6 pr 10 cwt'. During WWI, these were used on early cruisers, a few British submarines and some Australian Merchant Navy vessels (e.g. 'City of Sydney'). Many were subsequently used as saluting guns but converted back to shooting guns during WWII for smaller ships (Minesweepers, Sloops, Corvettes, Frigates and Destroyers) and for coastal defences. The US Navy also used the 6 pr in the late 1800s-early 1900s but these were progressively replaced by 12 pr guns.
- Australian usage was limited to a few vessels and coast defence guns around Australia including defences at Sydney, Fremantle and Brisbane (Lytton). Some Navy 6 pr ammunition was also transferred to the Army early in WWII (presumably for use with the land-based 6 pr anti-tank gun).
- Limited types of projectile were developed for the 6 pr guns the most common being the following:
 - **High Explosive** (HE) 'Common' (gunpowder), 'Common Lyddite' or 'High Explosive' (HE) all normally contained a nose or base fuse and explosive main charge. Fuzes typically included Point Detonating and/or Base Detonating.
 - **"Steel Shell"** (AP)- was the British term for the Hotchkiss 3 and 6 pounder Common Pointed (CP) shells (and some others such as the QF 1 pr base-fuzed projectile) typically filled with gunpowder, had base percussion fuzes and a heavy pointed nose.
- Mostly used by the Australian Navy and coast defence units in Australian maritime areas but also fired onto shorelines for practices or exercises. 6 pr munitions were also disposed onshore and offshore after WWII. UXO may be encountered offshore (e.g. during fishing or dredging activities), onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 1.0m).

Technical Data

- Projectile length : approx. 170-220 mm (depending on type)
- Projectile Diameter : approx maximum 57 mm

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- Projectile weight : approx 2.5-3.0 kg
- Fuse/Burster : nose or base fuse and bursting charges which may be easily detonated.
- Filling : HE types approx 100-120 grams of explosive
- Identification
 - The projectile is usually steel and often painted black.
 - Some projectiles may have bands of colour (red, yellow, green) however colours varied between countries and have changed over time.
 - Caution this munition has been widely used over a long period of time by numerous nations - other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 - Top: specialised 6 pr Nordenfelt ammunition; Other 2.2 in ammunition shown was used with other 6 pr guns (such as the Hotchkiss)



Figure 2 - 6 pr 'Steel Shell' ammunition for QF 6 pounder Hotchkiss gun c. 1914



Figure 3 – 6 pr loading drill on British destroyer HMS Mackay (IWM photograph A 20313)



Figure 4 - Members of the Merchant Navy crew with a 6 pr gun on the stern of the City of Sydney – 1916 (AWM ID P02836.002)



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PROJECTILE – 12 POUNDER (NAVAL)

Description

- The 12-pounder (12 pr) naval gun was used by Australia, NZ, UK and other nations from the 1800s, throughout WWI & WWII into the 1950s. Types produced range from navy field guns and boat guns (1800s to WWI; a 12 pr was deployed with the Australian naval force that captured parts of PNG at the start of WWI), coast defence guns (WWI to the 1950s), land-based anti-aircraft guns (WWI & II) and on many capital ships, cruisers, destroyers and submarines (WWI & WWII).
- The 12 pr was most prolific during WWII it was fitted to Australian destroyers, corvettes and auxiliary ships (tugs, cargo vessels, survey ships and minesweepers). Often the 12 pr performed dual roles as the ship's main armament against submarines and torpedo boats and as an anti-aircraft gun.
- The 3 inch 20 cwt projectile was also used by or in Australia. This munition (1914: 12.5 lb/5.7 kg; 1916: 16 lb/7.3 kg) is very similar in size, shape, appearance and operation as the 12 pr but is not specifically described in this data sheet.
- Many variants of the 12 pr projectile have been developed both 'Breech Loading' (BL) but primarily 'Quick Firing' (QF). The types of projectiles likely used in Australia include:
 - **High Explosive** (HE) 'Common' (gunpowder), 'Common Lyddite', 'Common Lyddite' with internal night tracer (for anti-aircraft use) and 'Common Pointed' (CP); normally contained a nose and/or base fuse and explosive main charge.
 - Shrapnel (Shrap) usually contain a fuze, burster charge and 200+ bullets/pellets.
 - **Star** usually contain a fuze, burster or expelling charge and potentially hazardous chemicals or incendiary compositions.
- Regularly fired by Australian naval and coast defence forces into maritime areas and possibly onto Australian shorelines for practices. 12 pr munitions were stored at Australian and UK navy depots in Australia during and after WWII – many were disposed onshore and offshore after WWII. UXO are more likely to be encountered offshore (e.g. during fishing or dredging activities) but may also occasionally be found onshore near naval ammunition depots or at onshore naval live firing ranges (on the surface or buried up to 1.0m).

Technical Data

- Projectile length : approx 220-320 mm (depending on type)
- Projectile Diameter : approx maximum 76 mm (approx 2.98-3.02 in)
- Projectile weight : approx 4.8-12.8 kg (WWI ~5.7 kg; WWII ~7.5 kg; heaviest ~12.8 kg)
- Fuse/Burster : Nose/base fuse and bursting charge which may be easily detonated
- Filling : up to approx 500 g explosive (e.g. Black Powder, Lyddite, TNT, etc)
 - Others various incendiary, smoke or chemical compositions
- Identification : Normally cast iron/steel. Hazardous variants of the projectile are often painted yellow, green, black or grey with bands of yellow, red, green or blue. Caution this munition has been widely used by various countries over a long period of time other colours may have been used or colours may have faded over time. Treat all found munitions as dangerous.



Figure 1 - Various 12 pr projectiles (LtoR): QF Common Pointed (CP), QF CP cutaway, Sharpnel cutaway, Shrapnel (no fuze), QF Common Lyddite (no fuze)



Figure 2 - Loading 12 pr Mk V gun – WWII



Figure 3 - 12 pr gun fixed coastal defences - Fremantle, WA – 1943 (AWM ID number 028983)



Figure 4 - Auxiliary Anti-Submarine vessel HMAS Tambar firing 12 pr gun off Brisbane, Qld, 1940 (AWM ID 304890)