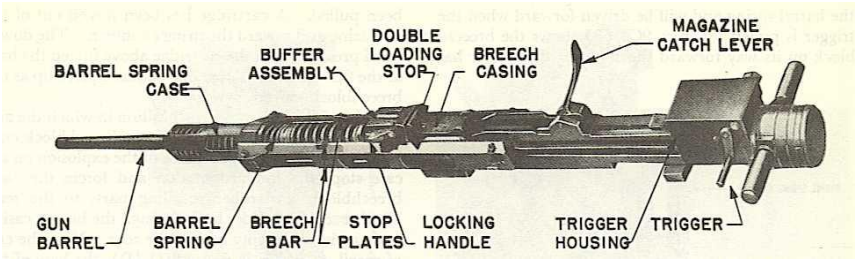
NZART ID: 461 Arm Type: Machine Gun, Date of Draft: (V1) 26 July 2015, Compiled by: Phil Cregeen
Pattern: **Oerlikon Mk II 20 mm Anti Aircraft Gun**;
Introduced in to NZ Service: 1941, Withdrawn 1948 -1988
Makers: Oerlikon Factory, Ruislip London; USA supplied under Lend Lease.
Calibre: 20 mm, Barrel length: 87 in. (2210 mm) Bore: 9 grooves Progressive RH twist 1in 36. Weight: 150 Lb (68.04Kg)
Type of Action: API Blowback; Cyclic rate: 450 rpm; Magazine: 60 round drum.
Ammo: 20 x 110, Round length: 7.18" (182 mm), Bullet weight: 130 gram,
Muzzle velocity: 2,700 ft/sec; Effective range: 1-2,000 yds. Max range: 4,800 yds



Basic gun - naming major parts


Gun with barrel removed, cleaning rod and magazine

The **Oerlikon 20 mm cannon** is a series of autocannons, based on an original German 20 mm Becker design that appeared very early in WW I. It was widely produced in Switzerland by Oerlikon Contraves and others, with various models employed by both Allied and Axis forces during WW II.

The Oerlikon is best known in its naval applications in the AA role. During the first half of 1939 a contract for 1,500 guns was placed in Switzerland by the British. However, due to delays and then later the fall of France in June 1940, only 109 guns reached the United Kingdom. Just a few weeks before the fall of France, the Oerlikon factory approved manufacture of their gun in the United Kingdom, under licence. The Royal Navy managed to smuggle out the necessary drawings and documents from Zürich. The production of the first British-made Oerlikon guns started in Ruislip, London, at the end of 1940. The first guns were delivered to the Royal Navy in March or April, 1941. The Oerlikon gun was manufactured in the USA and installed in United States Navy ships from 1942 and supplied to Britain under Lend Lease Agreement.

The Oerlikon cannon and its derivatives feature blowback operation: The bolt is not locked to the breech of the gun on the moment of fire, but moves freely to the rear while the propellant gases propel the projectile forward. Advanced primer ignition (API) is used to make sure that the projectile has left the muzzle and the gas pressure in the barrel is down to a safe level before the breech opens, the firing pin strikes the primer while the bolt is still travelling forward so that the gas pressure first has to overcome the forward momentum of the bolt before it can push it to the rear. To give the heavy bolt sufficient forward speed, a large spring is required, which is wrapped around the barrel of the gun. Also, the chamber is longer than needed to contain the case, so that the bolt and case must travel a small distance to the rear before the case extends beyond the face of the chamber. Nevertheless a fairly heavy bolt must be used, which limits the rate of fire.

This design resulted in the use of a characteristically shaped cartridge: The case has straight sides, very little neck, and a rebated rim. The straight sides allows the case to slide back and forward in the cylindrical chamber. The neck is not supported while this happens and therefore expands when the case is fired, and the rebated rim allows the face of the bolt, with its extractor claw hooked over the rim, to fit within the chamber. To ease the motion of the case, the ammunition needed to be greased; this was a drawback of the Oerlikon cannon. An alternative developed during World War II was the so-called fluted chamber, which had grooves that allowed gun gas to seep between the chamber wall and the case, taking over the role of the grease.

Ammunition feed is typically by a 60-round drum magazine on the top of the gun. During sustained firing, the magazine must be frequently changed, reducing the effective rate of fire. Belt-fed versions of the gun were developed to overcome this limitation. A trigger in front of the left-hand grip controls fire. Used cartridges are ejected from below the breech.

New Zealand Service

The New Zealand manned cruisers of the Leander (*Achilles, Leander & Neptune),* Fiji (*Gambia*) and Dido (*Bellona, Black Prince & Royalist*) class were loaned by the British Admiralty during WWII and were each equipped with up to twenty 20mm Oerlikon AA guns. Loch Class frigates carried two, Flower Class corvettes carried 8, Bird Class trawlers carried one plus 1 or 2 unofficial guns. Fairmile Patrol Craft carried one and HDMLs also carried one. In addition Oerlikons were fitted to various auxiliary vessels.

Small vessels serving with the Americans in the Solomon Is. were loaned USN Oerlikons, some salvaged from sunken USN ships.

After the war many of the Oerlikons were replaced by 40 mm Bofors as the 20 mm had been found ineffective against more modern aircraft. However, Ton Class Minesweepers serving in Malaya during the Indonesian Confrontation in the 1960s carried two single Oerlikons and the Leander and Rothesay Class frigates serving in the 1980s were equipped with two single 20 mm Oerlikons.

400 Oerlikon were given to the RNZN in the 1960's – so we could "look after" the Pacific- most of these never left storage. They were about to be released by the Navy in 1982 when the Falklands War happened and they were retained for another 10 years before the bolts were removed and destroyed and most of the rest of the guns (plus tons of parts) were sent for scrap. The bulk of the guns & parts were intercepted and purchased by collectors – most for scrap value, although most of the mounts were scrapped due to their high bronze content. One collector purchased 35 tons of guns, barrels, magazines, and boxes of parts and tools. (3 truck loads in total).

Oerlikon Mk II on Naval Mounting outside the Citizens Club at Dannivirke

There was a further package of about 30 guns with bolts, parts, magazines in boxes that were sold as a going concern. Some of these have found their way onto the collectors market. Some Oerlikons (with and without bolts – welded into the breech blocks) were given by the Navy to the Cadet Corps and RSA's – on mounts – and may be seen at various locations around the country.

Spare magazines with loading plate and spanner

Mk & Serial No in front of magazine

HE and Solid rounds

Acknowledgements: Andy Wickens, Noel Taylor

References: *https://en.wikipedia.org/wiki/Oerlikon_20_mm_cannon*
http://www.navweaps.com/Weapons/WNUS_2cm-70_mk234_pics.htm
Jane's Fighting Ships; New Zealand Naval Vessels by R J McDougal;