

BESA Tank Machine Gun

by Phil Cregeen

Besa 7.92 MGs were fitted as co-axial MGs in New Zealand tanks from 1941. These included the Schofield a prototype New Zealand Tank, Matilda Infantry Tank used by two squadrons of the Tank Brigade for training in New Zealand (1942 -43) and Valentine Tanks (1941 – 1960). 255 Valentine tanks were imported and retained for home defence and training, except for 25 Valentine Mk IIIs of the Third Battalion NZ Armoured Brigade which fought in the Pacific (September '43 to August '44) notably at Vella Lavella and Green Island.



Valentine Tank

Besa MGs were also fitted in Humber and Daimler armoured cars. The Humber armoured car was used as command and reconnaissance vehicles by the NZ Armoured Brigade in the Libyan campaigns of late 1941. The Humber also used a Besa 15 mm HMG as the main gun. The Daimler Mk II served in New Zealand post war.



Humber Armoured Car



Daimler Mk II Armoured Car

The Besa MGs were withdrawn from New Zealand service when the last Daimler armoured cars were withdrawn in 1963.

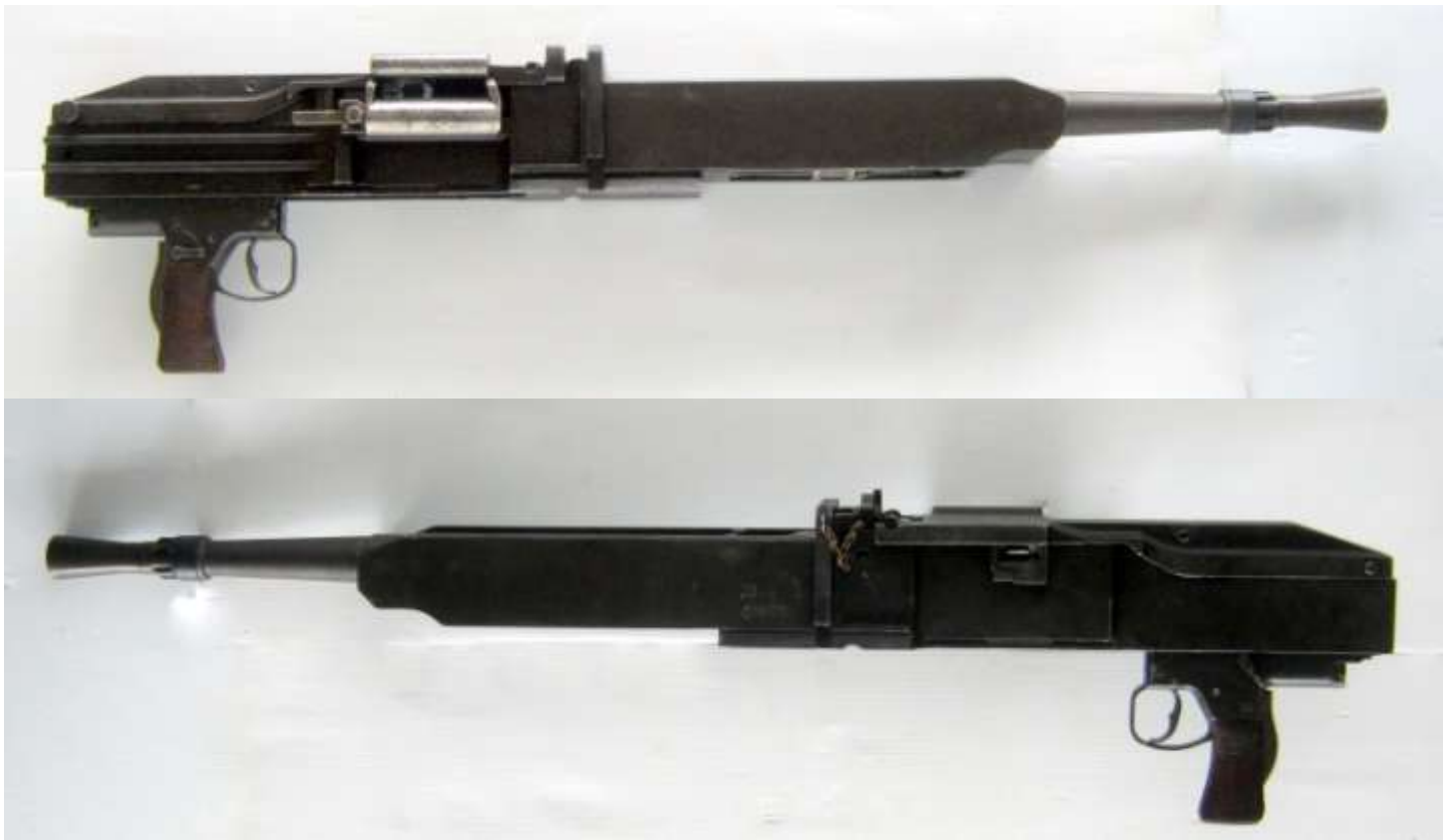
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<http://www.acant.org.au/Articles/BesaMGs.html>

Designed by Vaclac Holek of Zbrojovka Brno as the ZB 53 this air-cooled, gas-operated machine gun was adopted and modified by the British in 1938. It was acquired primarily for mounting in tanks and armoured cars, and would therefore be a relatively limited issue, the British departed from their prudent policy of chambering all light and medium machine guns for one cartridge only – the .303 rimmed. The Czechs designed the ZB53 around the German 7.92 x 57 mm rimless cartridge and the British avoided the problems associated with a change of calibre, particularly from a rimless to a rimmed case, by producing their versions in the same calibre.

The gun was produced by the Birmingham Small Arms Co. (BSA) under licence and was given the designation Besa. Production of the 7.92 mm model commenced in 1939 at a new factory near Birmingham. BSA manufactured 59,322 of this model during the 1939-1945 War, each gun comprised of 110 parts requiring 2,800 separate machine operations.

While the Besa was gas-operated, it also had a recoiling barrel, giving what was termed a 'differential system'. In essence, the cartridge was chambered and discharged while the operating mechanism was still moving forward in counter-



Above: left and right view of a MK III Besa fitted with Mk II trigger group with grip safety

recoil. The recoil produced by the fired cartridge had then to arrest the inertia of the forward-moving bolt before reversing the movement. This action aided in buffering the bolt and it is said that the imposed change of direction absorbed much of the recoil and contributed to a reduction of stress on the weapon and its mounting.

The Besa 7.92 mm was put into service in seven different versions. The Mark I and Mark II were both introduced in June 1940, with the Mark I being declared obsolescent on the same day. The Mark II varied from the Mark I in minor details, with most of the changes being made to facilitate production. Both marks were designed for automatic fire only and had an accelerator that enabled variation of the rate of fire. With the accelerator set to L (low), the cyclic rate of fire was 450-550 rounds per minute (rpm). On H (high), the cyclic rate of fire was increased to 750-850 rpm. The lower rate of fire was for normal use while the higher rate provided greater power in repelling attacks or in other pressing circumstances.

The Mark II*, Mark III and Mark III* were all introduced in August 1943. The Mark II* was a transitional model between the Mark II and the Mark III and, although some parts were simplified, there was complete interchangeability of Mark II and Mark II* parts. Mark III parts would not, however, interchange with earlier marks. The Mark III and

Mark III* were further simplified and had the accelerator removed. The only difference between the Mark III and the Mark III* was that the Mark III had the rate of fire set at 750-850 rpm while the Mark III* was set at 450-550 rpm. All Mark III models were later converted to Mark III*.

The Mark III/2 introduced in 1952 modified the Mark III* with a new bracket and body cover. Introduced in 1954, the Mark III/3 had a new design of barrel and sleeve and larger gas vents, to facilitate the use of belts of mixed types of ammunition. Some Mark III/2 guns were converted to Mark III/3 but there was no manufacture of new Mark III/3 guns. Besa mounted in armoured fighting vehicles (AFVs) used telescopic sights.

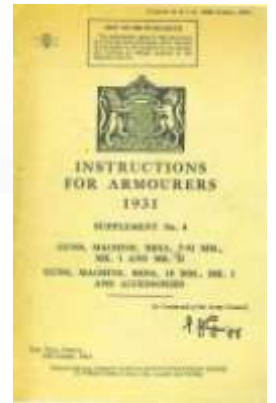
The earlier marks of the Besa 7.92 mm were made obsolete in 1951 but the Mark III/2 and Mark III/3 remained in service to the late 1960s.

15 mm BESA

In substance, the Besa 15 mm heavy machine gun was an enlargement of the 7.92 mm gun and was based on the Czech ZB 60. It did, however, differ in that it could be fired on repetition (single shot) and had a cyclic rate of fire of 450 rpm. The Besa 15 mm was produced only in one mark and an attempt to convert the weapon to 20 mm calibre, to permit the use of the Hispano-Suiza 20 mm cartridge, was abandoned.



Besa 7.92 MG Top view



Comparison
Top: Besa 7.92 mm
Bottom: Besa 15 mm

Like the Besa 7.92 mm, the 15 mm gun employed an unusual method of cocking. Pushing forward the trigger guard body engaged the operating mechanism which was then brought back to the firing position when the trigger guard body was withdrawn to the rear. A cocking catch locked the trigger guard in the firing position. It fired a 75 gram bullet from a 15×104mm cartridge with a muzzle velocity of 2,685 ft/s at a rate of 450 rounds per minute.

140 ZB 60 guns were imported to Britain along with the manufacturing licence in early 1939 and production commenced in 1940. Over 3,200 guns were produced before it was made obsolescent in 1944 and became obsolete in 1949.

Specification:

MG

Calibre: 7.92 mm,
Bore: 4 groove RH twist,
Barrel length: 29.0 in.
OA Length: 43.5 in.
Weight: 47- 54Lb.
Type of Action: gas operated;
Cyclic rate: 500 - 800 rpm;
Magazine: 225 round metal link belt.
Sights: Telescopic.

HMG

Calibre: 15 mm,
Bore: 8 groove RH twist,
Barrel length: 57.6 in.
OA Length: 80.75 in.
Weight: 125.5 Lb.
Type of Action: gas operated;
Cyclic rate: 450 rpm;
Magazine: 25 round metal link belt.
Sights: Telescopic



Short section of Besa belt and 7.92 mm ammo.
Left to right:
dummy ball, ball, armour piercing, tracer



Typical Marking on LHS.