



I. GENERAL SPECIFICATION

TYPE

Cruiser Tank T. 34

DIMENSIONS

Length with gun at 6 o'clock	19' 11 $\frac{1}{2}$ "
" " " " 12 "	21' 7"
Width	9' 10"
Height	7' 9 $\frac{3}{8}$ "
Ground Contact	12' 1 $\frac{1}{2}$ "
Track Centres	8' 0 $\frac{3}{4}$ "
Ground Clearance	1' 4"
Turret Ring Diameter	4' 9"

WEIGHT

27 tons 16 cwt. (fully stowed, less crew)

ARMAMENT

One 76.2 mm gun, Model F.34 and one 7.62 mm M.G. coaxial in external roller mantlet in turret.
One 7.62mm. M.G. mounted in armoured hood on offside of glacis plate.

TURRET TRAVERSE

All round, hand and electric - latter powered direct from the vehicle batteries.

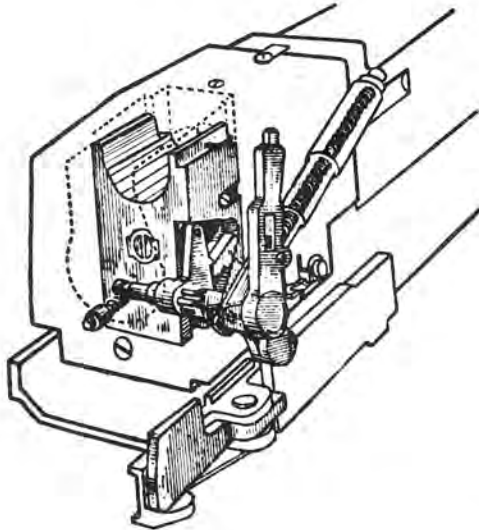
AMMUNITION

76.2mm - 77 rounds (mixed A.P., H.E. and Shrapnel)
7.62mm - 35 magazines each holding 65 rounds

Construction of gun

The gun is of monobloc construction, with a detachable breech ring secured by a locking ring. Two securing rings round the chase, retained by locking rings, carry the recoil cylinder and guides underneath the gun.

Breech Mechanism



The breech mechanism consists of a falling wedge breech block, with hand or semi-automatic operation. Percussion firing is employed, the breech block carrying a readily removable striker and mechanism.

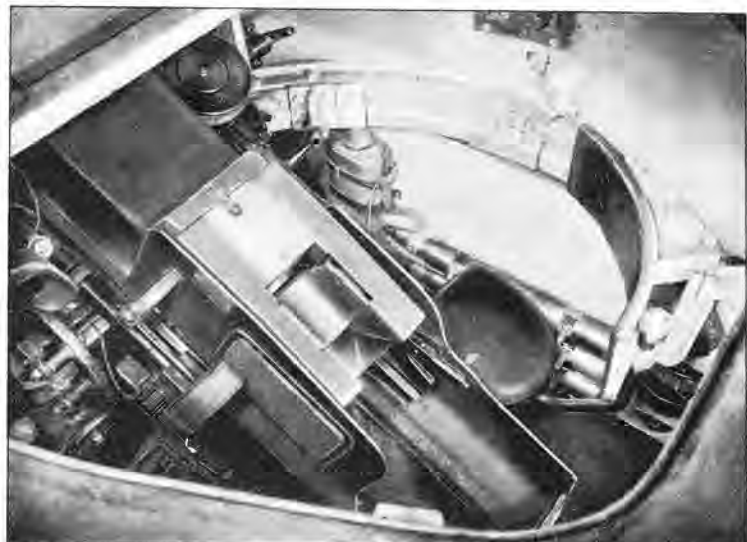
To open the breech by hand, the breech mechanism lever on the right of the breech ring is pushed forward against the compression of a breech closing spring also on the right of the breech ring. The breech mechanism lever returns to the horizontal position when the breech is closed. It may then be returned to the vertical, without opening the breech, by pushing a catch on its forward edge. The breech block is held in the forward position by the hooks on the extractors and can then only be closed by inserting a round in the breech or by lifting the extractor release lever on the right hand end of the extractor shaft. The shoulders on the breech block are renewable.

There is no firing hole bush. The

semi-automatic gear is similar to that on the American 75 mm. M.3 tank gun. It consists of an actuating lever with a stud which engages a spring loaded cam on run out. The actuating lever is on the right hand end of the actuating shaft under the breech mechanism lever. The upward movement of the breech block is limited by a stop inside the right side of the breech ring. This stop can be withdrawn to allow of the upward removal of the breech block.

Cradle

The cradle is of cast and welded construction, the lower portion being in the form of a "U". The upper edges of the sides are formed into guide rails for the recoil of the piece. The cradle cap is bolted to the front of the cradle and has three drillings - two for buffer and recuperator piston rods and one for the filling hole. Two trunnion bearing castings are welded to the cradle, one either side, each fitted with a bronze bush. The trunnions themselves are carried in two internal cheek plates welded to the turret front wall. The internal plate is bolted to the trunnion bearing castings. The left one carries the telescope and the operating arm for the periscopic sight object prism, and the right the M.G. cradle.



The episcopes are of simple fixed type, mounted so that they point downwards at approximately 5 degrees to the vertical. They are inserted from below in slots in the thickness of the turret wall, and held in place by springs on the episcopes casings and a hinged flap with a spring catch on the lower end of the slot. An extra armoured cover is welded to the outside of the turret wall. Overall dimensions are :

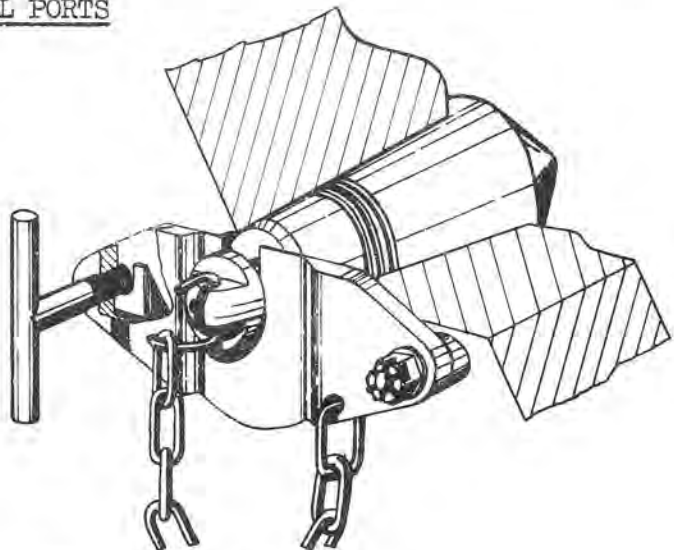
Height	165 mm.
Width	130 mm.
Thickness	36 mm.

The episcopes cases are constructed of sheet tin plate, with soldered joints. The quality of the glass is poor and contains many bubbles and flaws. Visibility when closed down is very limited and is little better when opened up, owing to the restriction of forward vision by the large flap of the turret access hatch.

PISTOL PORTS

The pistol ports are conical apertures of approximately 49mm diameter inside the turret and 71mm. outside the turret, giving an inclusive angle of taper of approximately 14 degrees.

The ports are closed by conical plugs anchored to the inside of the turret wall by a chain. The plugs are each secured in the ports by a pivoted plate with a slot which engages an annular groove in the plug. The plug is removed by a sharp blow.



Forward Compartment Driver - 2 episcopes in front hatch.

These are identical with those previously described and have extra protection welded to the outside of the mounting. They are mounted vertically pointing forward and outward from the keel line at about 5 degrees to the tank's transverse axis and are provided with armoured hoods. The hoods are pivotally mounted and may be closed or adjusted to either of two positions of opening by a hand lever with a spring loaded plunger which engages coincident holes in a quadrant. The eyepieces of both episcopes are protected by a long transparent plastic strip, held in place by the episcopes retaining flap. Its purpose is not clear.

Auxiliary Gunner/Operator - open sight aperture in M.G. mantlet

9. SEATING

Seats for the crew are arranged as follows:

COMMANDER/GUNNER - this seat is adjustably mounted on a tubular support, which is itself adjustable for height and rotation in a bracket on the rear nearside of the turret ring. The seat has a longitudinal adjustment on the support. A wide backrest is fitted on the turret ring, and both this and the seat are cushioned.

LOADER - the loader's seat is identical with that for the Commander/Gunner except that it is secured to the offside rear of the turret ring.

DRIVER AND HULL GUNNER - these seats are identical and are mounted on the floor in the front nearside and offside respectively of the forward compartment. They are of armchair type with folding backrests and are not adjustable in any way; the seats, arms and backrests are cushioned.

STARTER EQUIPMENT

The engine may be started by solenoid operated electric starter or compressed air.

- (i) Electric - the electric starter motor is a 24V four pole, series wound, totally enclosed machine. It is mounted in a cradle on top of the gearbox and engages a ring gear on the flywheel.

The pinion is driven by the armature through a multi-plate clutch. It is moved axially into engagement by means of a pivoted forked finger. The finger is actuated by a solenoid mounted alongside the motor. On completion of the starter circuit the solenoid first moves the pinion into engagement, then completes the armature circuit.

The starter motor circuit is completed by a solenoid switch operated by a press switch on the driver's panel. The solenoid lead is connected to the generator positive terminal in the regulator unit. An electrical interlock results which de-energises the solenoid circuit immediately the engine starts, thus dis-engaging the starter pinion, and preventing engagement whilst the engine is running.

- (ii) Air - the compressed air system is provided for use only as an emergency measure should the electric starter fail.

It consists of an air distributor mounted on the front of the engine which conveys air to the cylinders of each bank, through non-return valves in each cylinder.

The air is delivered to the distributor from two steel cylinders mounted forward on the floor of the driving compartment.

The cylinders may be refilled with air from an outside source without removal from the vehicle.

The maximum pressure permitted in the air bottles is stated to be 150 Kg/cm². The starter cock and an air pressure gauge are on the left of the driver.

