

NOTES ON THE "BOYS" ANTI-TANK RIFLE

1. The evolution of weapons suitable for use by troops in the front line, and having greater armour piercing capacity than that obtainable with the Service rifle began about 1917. The German A.T. rifle was the first of these but its severe recoil was intolerable and it was rarely used.

Weight 40 lbs - Bipod rest - similar to giant Mauser -
No control of recoil - early hurried attempt at
portable A/T weapon.

After the Great War we produced a rifle fitted with a muzzle brake, but the recoil, although reduced from 71 ft lbs to 36 ft lbs, was still intolerable. The S.M.L.E. recoil is $12\frac{1}{2}$ ft lbs, and that of a 12 bore shot gun is 26 ft lbs.

Definition of "Muzzle Brake" - acts opposite way to muzzle attachment of Vickers - early experiments with muzzle brakes not carried so far as recent experiments.

Efforts to produce a suitable rifle were then dropped until 1934, when the C.I.G.S. Research Committee asked M.G.O.3. to re-open this investigation.

In the meantime various types of A/T weapon tried -

"Light" Solothurn & Gerlikon shoulder controlled, .8 calibre, 70 - 80 lbs weight.
Light Solothurn - Self loader.
Light Gerlikon - Automatic.

"Heavy" Solothurn & Gerlikon. 170 and 140 lbs without mtg. - heavy wheeled mounting necessary.
Solothurn Mtg 670 lbs including wheels.
Gerlikon Mtg 208 lbs including wheels.

"Light" models too heavy to be portable and "Heavy" models had disadvantages of artillery without striking effect.

Therefore decided to concentrate on simple portable, hand operated rifle for Rifle Bns Supply Columns, etc - and 2 pdr gun for support.

The result is the "Boys" rifle. It is named after its designer, the late Captain Boys, who was for many years in charge of the Small Arms Design Branch.

The recoil of this weapon which is more efficient than the German A.T. Rifle, is about the same as that of a shot gun.

2. The "Boys" rifle is designed to penetrate the armour of light A.F.Vs up to about 500 yards range with a view to inflicting casualties on the occupants of these vehicles. It weighs $34\frac{1}{2}$ lbs, can be carried by one man for a limited distance, and has a rest to enable it to be fired from the shoulder in the lying position.

Performance.

Will penetrate about	$1''$	armour at	Normal Impact at	200^X .
"	"	"	20°	"
"	over	"	Normal Impact at	500^X .
"	about $\frac{1}{2}''$	"	20°	"

/Reduced

Reduced penetration against inclined surface.
"Light" Tanks carry up to $\frac{1}{2}$ " armour.
"Heavy" " " " " " 1" "

Effective range controlled by penetration and chances of a hit. Desirable to reserve fire to achieve "surprise" - Effective up to 500^x against Light Tanks. Light M.Gs can assist by making Tanks close down - Bullet splash and chance bullets through observation slits.

It is a single loader and the cartridges are fed from a magazine.

It requires no specially trained firer provided practice at moving targets is included in the annual course, and in a skilled rifleman's hands will give a rate of about 9 rounds a minute with great accuracy.

Sighting system - unorthodox aperture - good view of target and line of travel.

Long sight base ($34\frac{1}{2}$ inches) - Head fixed by check rest. Two adjustments only by "flip over" as in sporting rifle.

- (a) 400^x and over
- (b) under 400^x.

No time for adjustment in action but firer can anticipate.

The rifle will ultimately be issued on a scale of one per rifle platoon, or equivalent unit, and the initial order has been placed.

5. As the rifle has a range far greater than the S.M.L.E. with the ammunition it will fire in war, it cannot be fired on the majority of rifle ranges in the United Kingdom.

At 30° Range 7000^x.
10° " 5000^x.

(About 10° given with butt on ground on sloping firing point.)

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