Written by David Boyd Thursday, 01 January 2009 15:18 -

Projector, Infantry, Anti-Tank (PIAT)

By 1941 the current infantry weapons for dealing with tanks were becoming obsolete - the Boys AT Rifle didn't have the penetration to deal with modern tanks and the No.68 Rifle Grenade had limited range. A requirement for a projector to fire a No.68 from the shoulder at a higher velocity was issued, due to the large recoil design of a 'dynamic' spigot projector was started. It also appeared that the No.68 wouldn't be sufficient enough to deal with enemy tanks in the near future so consideration was given to a more powerful shaped charge round and it was decided that it would be possible to fire a projectile with a weight of 3lb containing 1lb of explosive with sufficient velocity to meet the requirement.

Trials of the No.68 grenade projector were held in December 1941 and the first trials of the new shaped charge round were carried out in February 1942. More extensive trails were carried out in March 1942 where penetration of 100mm at 30 degrees was achieved. At this time it was considered that the weight of the bomb should be reduced to 2.5lb in order to assist the design of the projector. Trails of this design were tested and again achieved penetration of 100mm at 30 degrees, the design was sealed and production started.

Written by David Boyd Thursday, 01 January 2009 15:18 -

A few problems were experienced with production, occasionally the fuze would function without detonating the bomb, this was due to insufficient strength of the flange holding the cordtex train in position against set back - this was cured by doubling the flange and adding a washer. This became known as the Mk IA. After 6 months production it was noticed that penetration had lowered, it was found that the standard of filling had deteriorated in production - in some cases explosive was being pulled away from the base of the cone by the hand folded sealing washing. Trails were carried out and it was found that a pre-formed sealing washer and pre-formed explosive would restore the penetrating performance. No difficulties were found with this introduction and it became known as the Mk II version of the bomb. The Mk III brought in the fitting of a screwed fuze holder and graze fuze No. 426, this improved the reliability of functioning against irregular targets.

The projector was primarily design by Brigadier Jefferis, hence why it was originally named the Jefferis Shoulder Gun before being renamed the P.I.A.T. 100,000 of the weapons were ordered as well as over 5 million rounds of ammunition (later increased to 13.3million). Production of the projector began in August 1942 and ammunition shortly after. By December over 1,000 people had been trained in it's use and it was decided to send some weapons to North Africa. A team of instructors was sent in January, the 1st Army was to be equipped with 1 PIAT per platoon with 100 rounds of ammunition. By the start of February both the 78th and 46th Division were fully equipped

Written by David Boyd Thursday, 01 January 2009 15:18 -

with the weapons.

PIAT details

WeigB4.5lb LengB9" WeigB15db bomb MaximL5h range (AT role) Maxi650m4020ige (house-breaking)

The weapon was said to have accuracy on a 2'5" x 2'5" target up to 100 yards.

Penetration

According PREM 3 426 6, CAB 120 374 and AVIA 44 434 penetration is given as 100mm at 30 degrees, 70mm at 45 degrees but it is important to note that the proof penetration was only 100mm at 0 degrees.

PIAT production by year (UK only, Filled only)

Written by David Boyd Thursday, 01 January 2009 15:18 -



Sources - PREM 3 426 6, CAB 120 374 and AVIA 44 434