

8000lb High Capacity Bomb

The requirements for the new bomb were sent to the Ordnance Board in March 1941 and specified a bomb that weighed approximately four tons and was to have the greatest possible blast effect over the greatest possible area, the case was to be strong enough to ensure detonation on impact with a hard target at any height up to 20,000 feet.

Initially the bomb had been intended to be carried in a glider but soon it was decided to investigate the possibility of putting the bomb into the heavy bombers under development, the Warwick was the first considered but the maximum diameter which could be accommodated was 30 inches and so the bomb would have to have been increased in length which would have caused difficulties in manufacturing and handling. The solution suggested was to have the bomb made in sections, each weighing around 2000lb which could be bolted together, this would make manufacturing and handling easier.

The idea of a composite bomb was new and untried, there was obvious difficulties particularly with simultaneous detonation. The biggest disadvantage with the bomb was the extreme length when compared with its diameter and it had been calculated that a 30 inch, 8000lb bomb would require a length

to diameter ratio much greater than 3. Two bombs were suggested, a 48 inch diameter bomb for use in gliders and a 30 inch inefficient bomb to fit a modern heavy bomber.

It was then discovered that there had been an error in the examination of the Warwick and that it could accommodate a 38 inch bomb and this would allow for a much more satisfactory length to diameter ratio, work on the 30 and 48 inch bombs was abandoned and the Ordnance Board went ahead with the design of a 38 inch bomb. By June preliminary designs of the bomb were completed, the principle of making the bombs in section had also not been dropped but instead of using 2000lb sections two 4000lb sections with a tail were to be used. These sections were joined by means of flanged rings welded to the body, through which bolts could be secured.

Arrangements for the production of 200 bombs were made, with production stopping at 12 until preliminary trials had been completed. By August three bombs had been completed, these were filled inert and sent for handling and installation trials. Another two bombs were completed and filled for detonation trials. The initial handling trials revealed several small manufacturing faults and some difficulties in joining the sections together but none were serious. A Lancaster had also been modified to carry the bomb by this time for loading and handling trials.

By October static trials had been completed and a serious deficiency in blast effect compared to the 4000lb had was found. Blast pressure and fragmentation were found to be satisfactory but the duration of the effect was short by 50%. The sections of the 8000lb High Capacity bomb were tested and were found to be inferior to a single 4000lb High Capacity bomb. These were filled with amatol.

Trails with differing thickness of case were completed in January 1942 but these did not show improvement, a bomb filled with RDX/TNT gave results comparable to that official 4000lb high capacity bomb. At this point the Ordnance Board could not recommend the amatol filled bombs for service use in it's current form and only a handful of RDX filled bombs were available due to it's rarity at the time.

In the closing days of 1941 a committee called the "Static Detonation Committee" was set up in the Ministry of Supply, the committee recommended the 8000lb high capacity bomb to be filled with 85% amatol and 15% RDX/TNT. Trails of this filling were carried out and it was found to be at least 90% as effective as the RDX/TNT filling. In April 1942 the Air Staff agreed to introduce the bomb into service and arrangements were made for an experimental order of 2000 bombs filled with the new filling. Only very minor modifications were introduced for the production version of the bomb which was known as the

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Mk I.

The Lancaster was designed to carry a single 4000lb high capacity bomb so modifications were required, this involved constructing a bulge in the bomb doors, it was later found out that this interfered with the installation of radar equipment so only 10% of Lancaster's were to be modified to carry the 8000lb high capacity bomb but by this time the material for the doors had already been ordered so a compromise of 30% was made.

8000lb High Capacity bomb specifications

8,000lb HC Mk I-II

Construction Cast Steel

Weight (3572.72kg)

Large/weight ratio

33.6in (85.34cm)

Body (24th.3cm)

Body dia (96.52cm)

Valve link (123cm)

27.1in (69.1cm)

32.8in (83.3cm)

Ammunition, Torpex 2

Number of 8000lb High Capacity bombs released per year

Bomb

1940

1941

1942

1943

1944

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1945

8000lb HC



32

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425

572

123

Sources - AVIA 46 285, AVIA 46 163