WASC 1965
WA1 483
Bouncing Bomb
'Upkeep' - extract
from RoF Charley
Pg 172, 173 & 42

types developed for specific purposes); these were the incendiary, and the medium- and high-capacity explosive bombs.[8]

The new bomb facility at Chorley covered all these types, from incendiaries and small to medium general purpose bombs of 40lbs to 4,000lbs, to the medium- and high-capacity bombs which ranged in size from 500lbs to the 12,000lb Tallboy bombs.[9] Chorley also helped in the development of one-off, specialist bombs, and in 1943 the factory is reputed to have filled the bouncing bombs designed by Barnes Wallis, the 9,150lb Upkeep (strictly speaking being a mine). According to some former wartime employees, over fifty of the bouncing bombs were filled at Chorley on Group 8.[10] These were used in May 1943 for the night-time attack on the dams of the River Ruhr which supplied hydro-electricity for the main industrial complex of the Ruhr valley in Germany.[11]

From the beginning of the European war in 1939 the United States had supported Britain on an informal basis. In November 1940, after Roosevelt had been re-elected as president, more formal

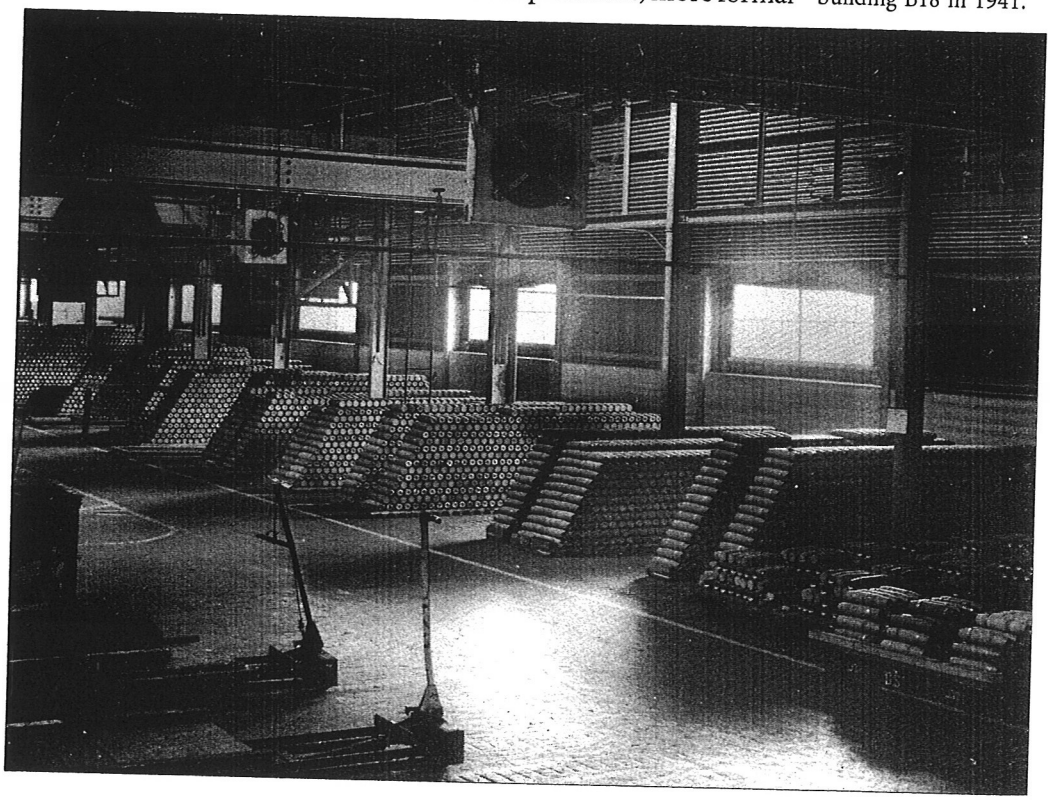


Plate 3.1 (ref 3.15). Empty shells came into ROF Chorley from the 'empty manufacturers', usually one of the other 'engineering ROFs'. They came to the factory by road and rail. On the factory they were received on Group 6 (later Group 8) in one of the 'transit buildings'. The plate shows shells in building B18 in 1941.

ROF Chorley and the 'Bouncing Bombs' 1943

A great many stories surround the bombs used by RAF 617 Squadron to breach the German dams in the Ruhr during May 1943. The film of the raid, *The Dam Busters*, still arouses much interest in the development and deployment of the 'bouncing bombs', which were shown as being perfectly round! This was done for security reasons, still in force when the film was made in 1955.

The bombs were in fact cylindrical, some five feet long by four feet in diameter. These were filled with over three tons of explosive, and fitted with three hydrostatic detonating devices, similar to depth charges, and with 'self-destruct' delays.

Ex-employees of Chorley talk of filling the bombs on Group 6, and of their despatch from the factory. Hard evidence, however, is difficult to find, although research via the Public Records Office, the RAF Museum, the Imperial War Museum, and RAF 617 Squadron, does point to ROF Chorley. John Sweetman, in his book *Operation Chastise: The Dam Raid; Fact or Fiction?*, writes that 'the filling of the cylinder with HE had begun at Chorley' in April 1943. RO Glascoed also claimed that they were the fillers, and the lack of real proof as to who exactly did fill them is testament to the strict security which surrounded the bouncing bomb.

No English drawing of the bomb appears to have survived to the present day, but amazingly a German drawing does exist! Shown below, the drawing gives dimensions and filling details which were obtained after one of the planes carrying the bombs crashed during the March 1943 raid. The self-destruct mechanism failed in one of the bombs, allowing the Germans to recover it, complete with its launch system.

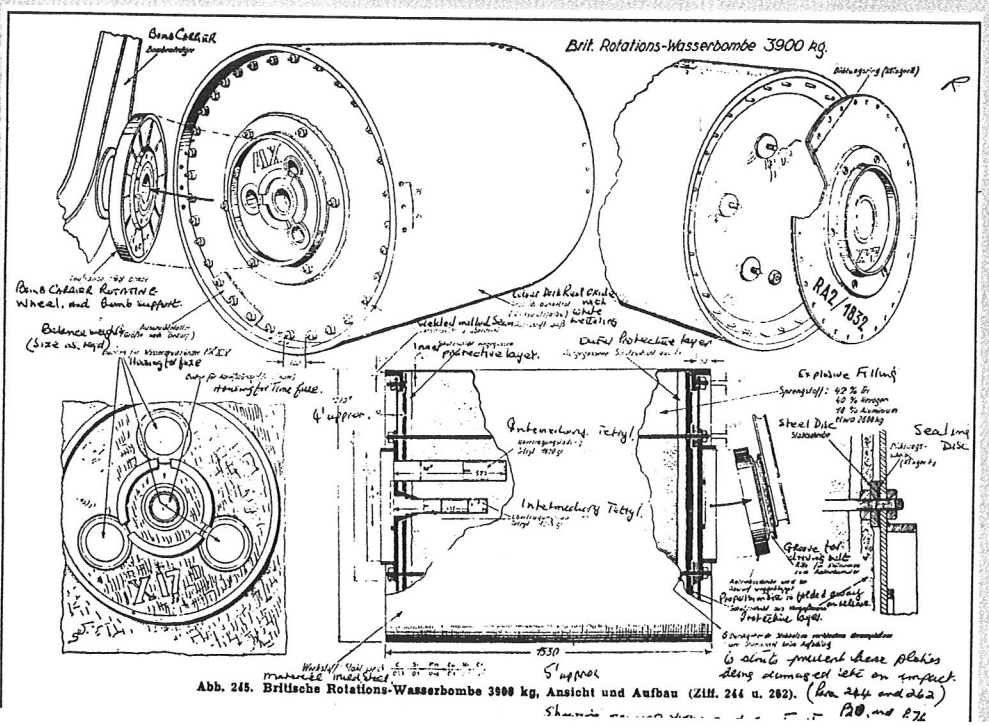
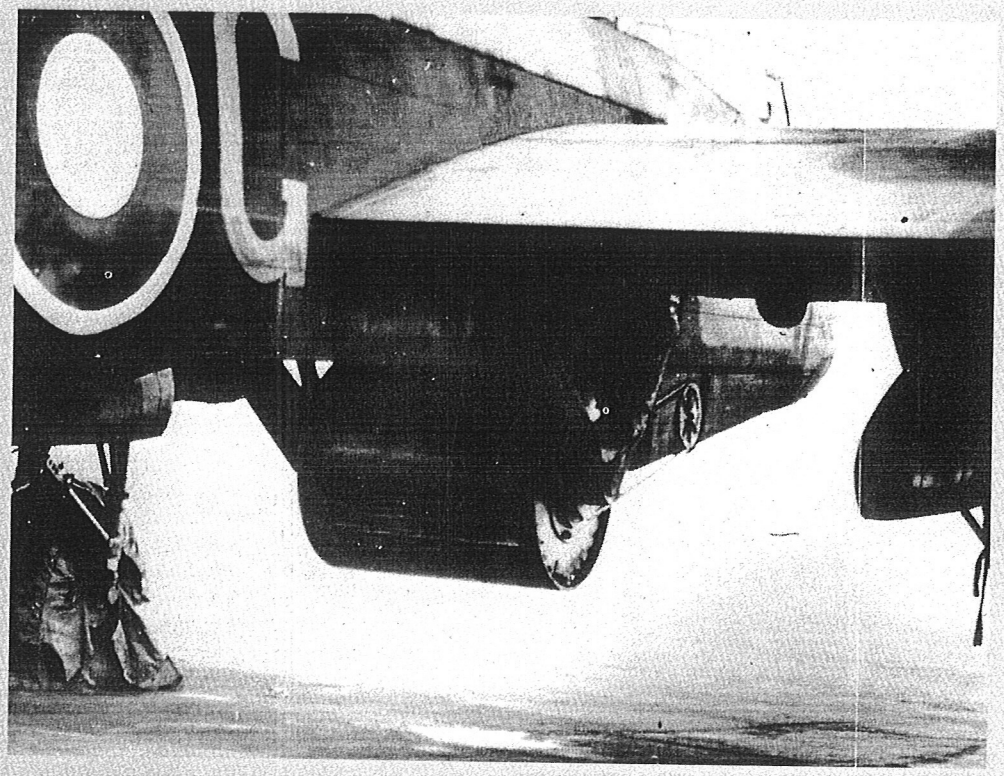


Abb. 245. Britische Rotations-Wasserbombe 3900 kg, Ansicht und Aufbau (Ziff. 244 u. 262).



The bombs used on the dam raid on 16 May 1943 were of the cylindrical type. Their development name was 'Upkeep', suffixed by 'Mine'. Another type of bouncing bomb was designed for use against shipping, but, although developed, it was never used 'in anger'. This bomb was called 'Highball', and was flat sided with a curved edge, similar to an aircraft tyre.

During 1993, 50 years on from the dam busting raid, the company magazine *Profile* featured an article on the bombs. Shortly after this, in 1996, off the Kent Coast, some of the bombs used in practice runs during 1943 were recovered, including a full sized Upkeep. The total weight of each bomb was 9,250lbs, 6,600lbs of this being RDX explosive.

The above illustration shows one of the bouncing bombs secured to the underside of Guy Gibson's Lancaster Bomber, prior to the raid on the Ruhr dams. The planes were fitted with a system which put backspin on the bombs just prior to release. The correct speed of the backspin in rpms was crucial to the successful deployment of the bombs.

and run defence industry. Its size and the scale of working during the war were a reflection of Britain's war effort. The maintenance of the site long after the war, at a much reduced level, with over half the factory mothballed, reflected successive governments' belief in a state owned defence industry. This changed with the