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PART 4: SECTION 1

CHAPTER 1

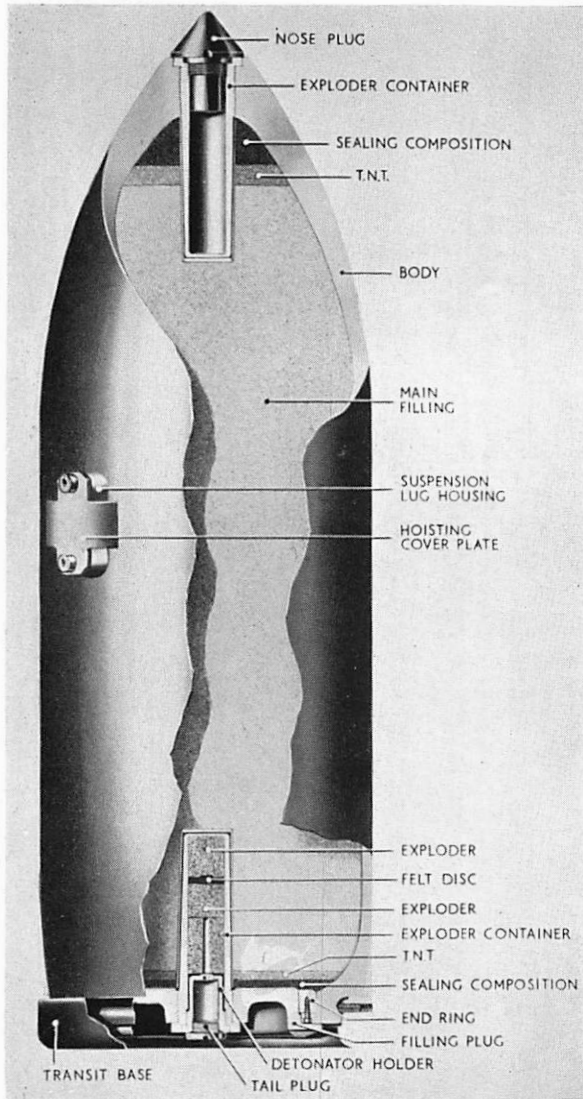
CONVENTIONAL BOMBS, MINES, AND DEPTH CHARGES

BOMBS

1. Bombs are sub-divided into five categories ; medium capacity (M.C.), high capacity (H.C.), incendiary (I), armour and concrete piercing (A.P. and C.P.), and fragmentation (F).

Medium Capacity Bombs (Charge/Weight Ratio between 40 per cent. and 60 per cent.)

2. Medium capacity bombs are general purpose bombs designed for a degree of penetration with optimum blast and earth shock effects. They can be fused delay, instantaneous, or proximity, according to whether penetration, surface detonation, or air burst is required.



3. The 1,000-lb. bomb (Fig. 1) is the most universal in effectiveness and can be used to attack a great variety of targets. Buildings, airfield runways, steel bridges, storage depots, factories and engineering plants, railways and roads, ships (up to 12,000 tons), and electronic installations, are all targets against which this bomb, though not always the best, can be used. It can also be used against aircraft on the ground, vehicles, troop concentrations, and gun emplacements, when fused for an air burst.

4. The 12,000-lb. (Tallboy) and 22,000-lb. (Grand Slam) bombs were specially designed to produce maximum earth movements and earth shock. They are sometimes called earthquake bombs because of these properties, and they are normally used against heavily-built targets which will not respond to treatment with 1,000-lb. bombs. Such targets include large masonry or reinforced concrete bridges, underground structures, including tunnels, earth dams, canal banks, and large ships.

5. The 500-lb. and 250-lb. bombs are used for training and by some fighter/bomber aircraft. The 500-lb. and 1,000-lb. bombs are the most effective against oil installations.

Fig. 1. Mk. 6 1,000-lb. M.C. Bomb.

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High Capacity Bombs (Charge/Weight Ratio about 70 per cent.)

6. High capacity bombs (Fig. 2) are designed for maximum air burst effect and are used to attack buildings that are susceptible to blast,

e.g. houses and factory buildings. They are available in 4,000-lb. and 12,000-lb. sizes. A third type, weighing 10,000 lb., is intended for high-speed, high-altitude release. H.C. bombs are normally proximity fused to obtain an air burst for maximum blast effect. They can also be fused instantaneous to detonate on impact.

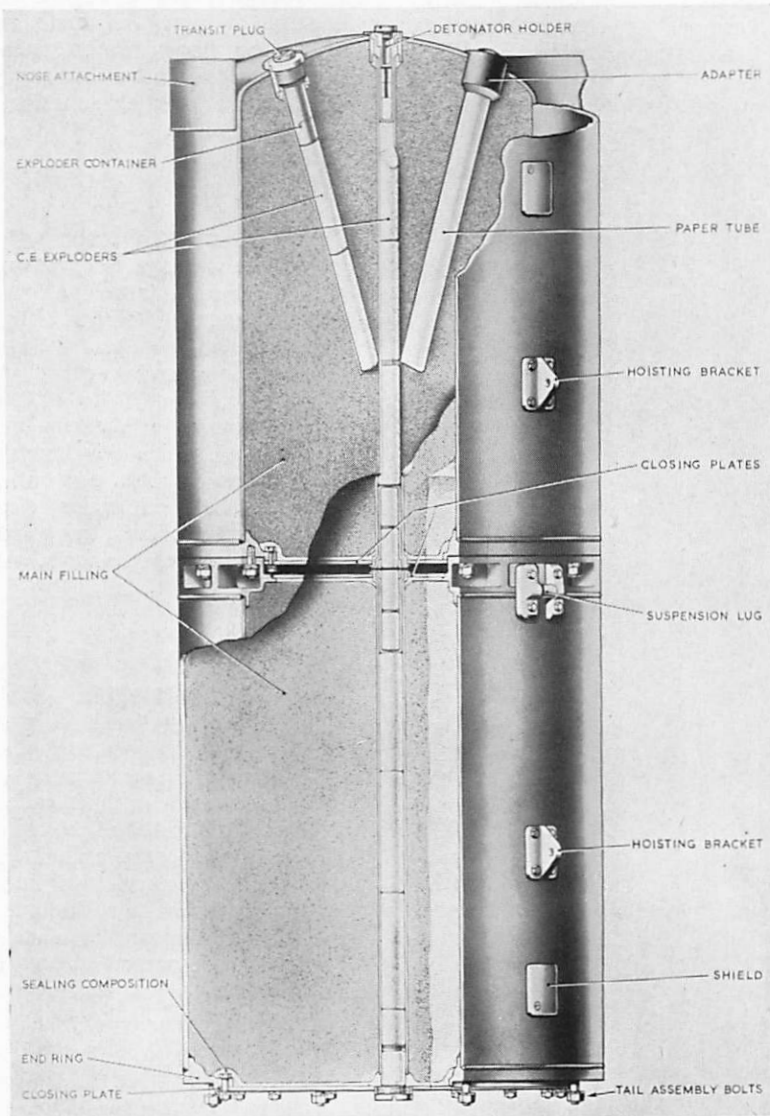


Fig. 2. Mk. 2 H.C. Bomb.

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Inciendiary Bombs

7. Incendiary bombs (Fig. 3) are used against built-up areas where combustible targets, or targets where intense heat is an effective destructive agent, are found; but for attacks on oil installations see para. 5. Two incendiary weapons are available:—

- (a) 800-lb. incendiary cluster, comprising 4-lb. incendiary "child" stores.
- (b) Incendiary drop tanks (Napalm).

The 800-lb. cluster is burst at a predetermined height to give the widest scatter of the 4-lb. "child" stores and so cause widespread fires. It is used against built-up areas and industrial targets where combustible material is present.

8. The incendiary drop-tank is a fighter/bomber weapon and is used against tanks, vehicles, parked aircraft, personnel, etc., where its area of intense heat is extremely effective.

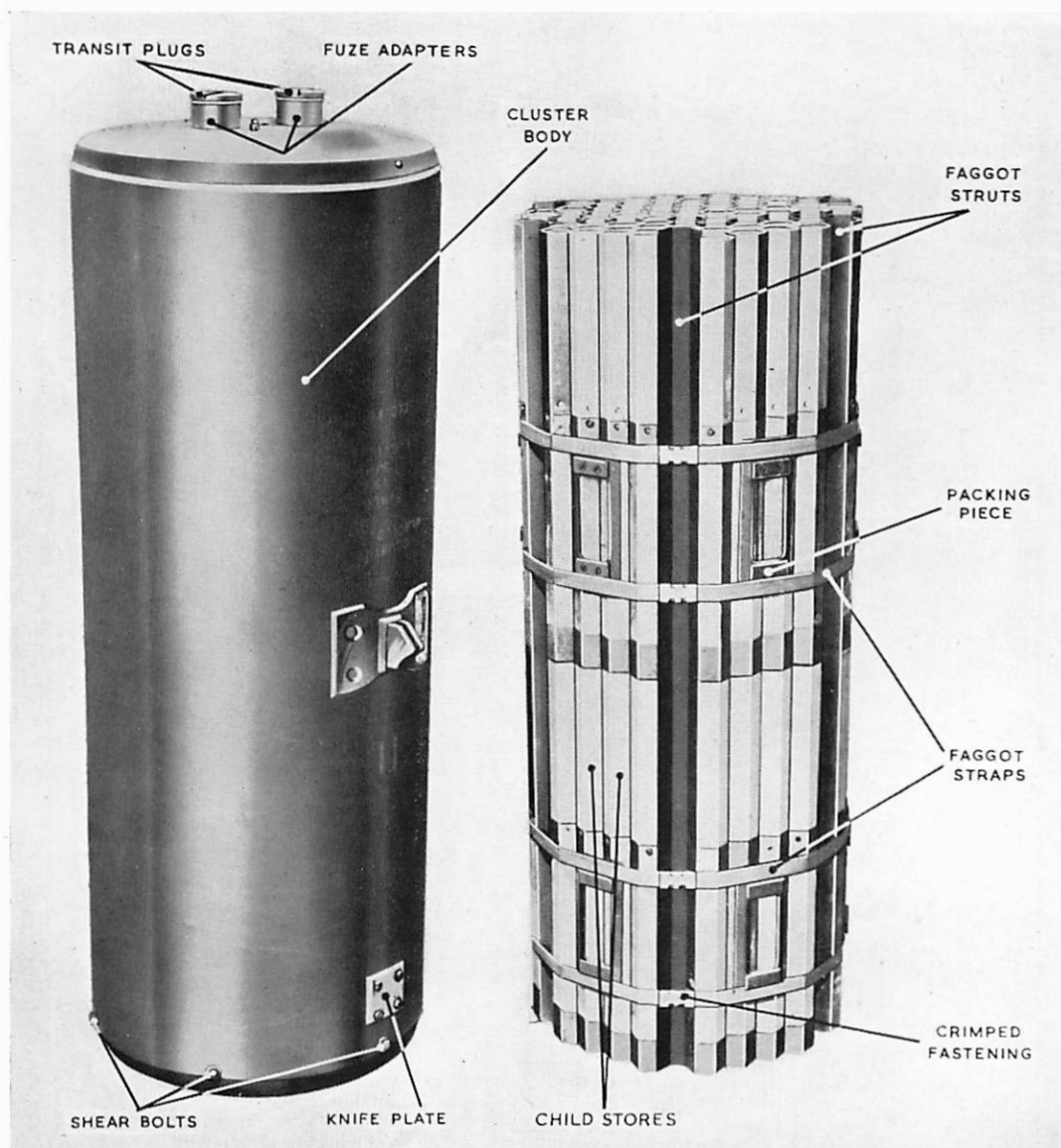


Fig. 3. 800-lb. Incendiary Cluster and 4-lb. "Child" Stores.

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Armour-Piercing and Concrete-Piercing Bombs (Charge/Weight Ratio between 10 per cent. and 20 per cent.)

plate or concrete. A 2,000-lb. armour-piercing bomb is in service, and a concrete-piercing bomb is under development. The armour-piercing bomb can be used to attack capital ships, but is not very effective, owing to its small explosive content.

9. A.P. and C.P. bombs (Fig. 4) are designed for attacks against targets protected by armour

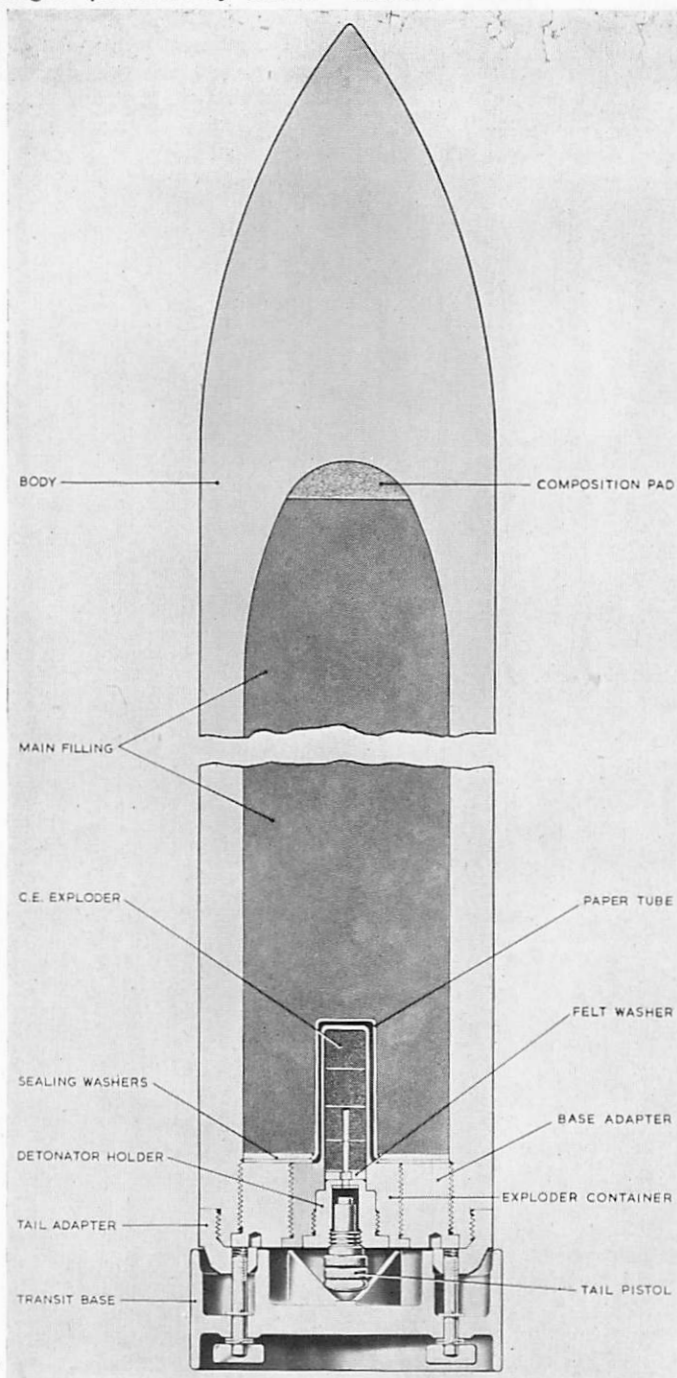


Fig. 4. Mk. 4 Armour-Piercing Bomb.

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10. A concrete-piercing bomb is required to penetrate heavy and reinforced concrete structures, such as submarine pens, against which M.C. bombs would break-up on impact.

11. Armour-piercing and concrete-piercing bombs are delay-fused to ensure that they penetrate the protective covering of the target before detonation.

Fragmentation Bombs

12. Fragmentation bombs are designed to produce large numbers of small fragments for attacking soft-skinned targets susceptible to damage by this means. Two fragmentation weapons are available :—

(a) 20-lb. F. bomb.

(b) 1,000-lb. M.C. bomb (see para. 3).

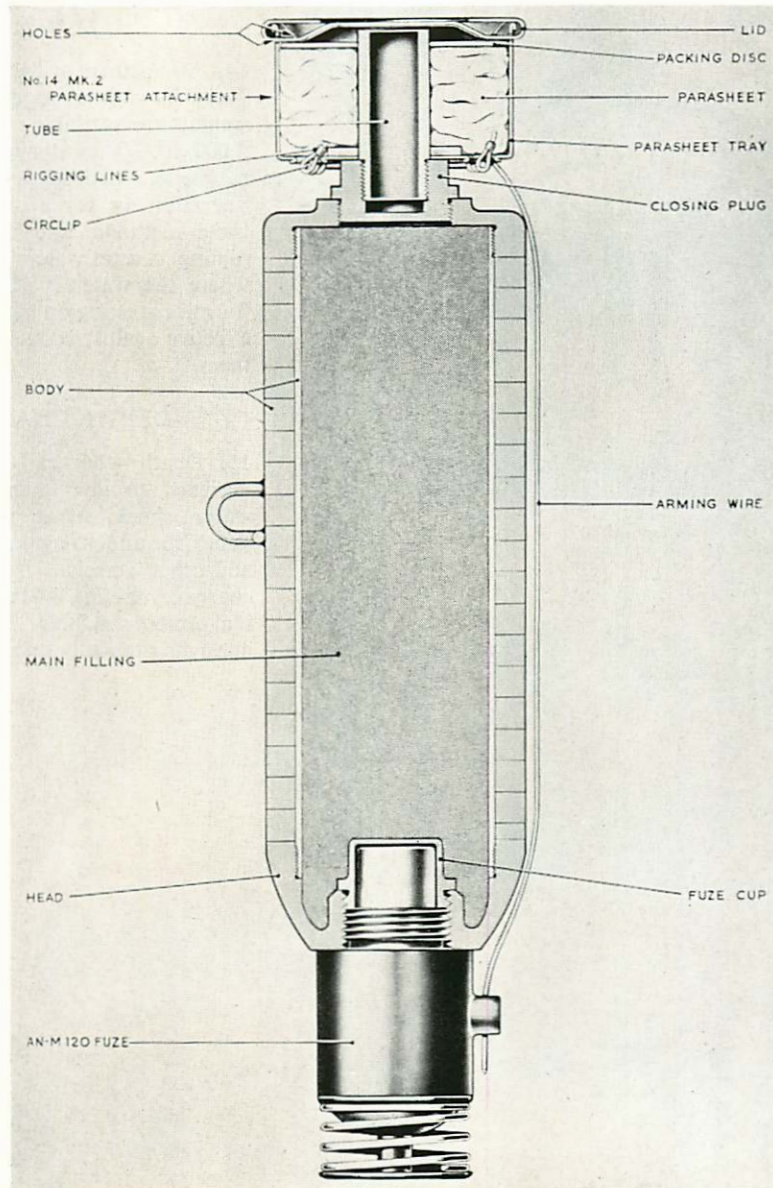


Fig. 5. 20-lb. Fragmentation Bomb.

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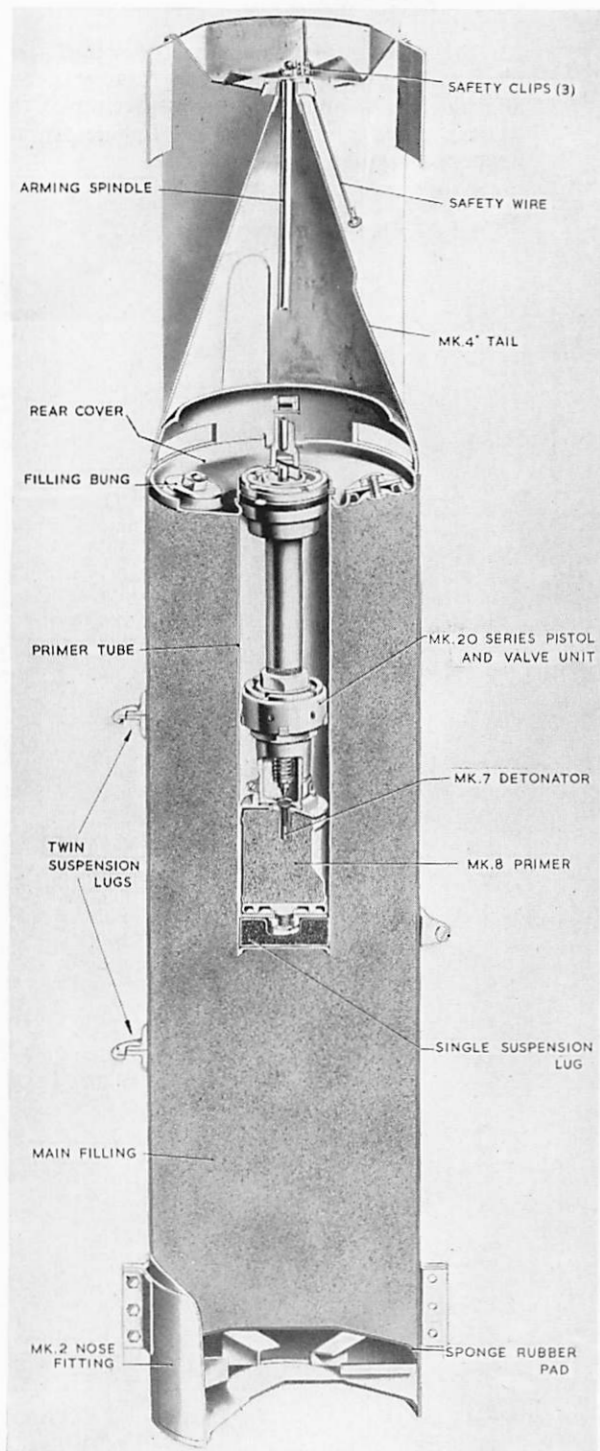


Fig. 6. 250-lb. Depth Charge.

13. The 20-lb. F. bombs can be used either individually or in clusters. When used individually each bomb is fitted with a finned tail and is carried on a light-series bomb carrier. In 350-lb. clusters they may be used against targets such as aircraft on the ground, vehicles, troop concentrations, and gun emplacements.

MINES

14. Mines are provided by the Royal Navy for mining operations. Two weights are available: 1,000 lb. and 2,000 lb. They may be fused for magnetic, acoustic, or pressure operation, or for a combination of these methods, and are used for mining coastal waters and channels where the water is shallow enough for mines resting on the bottom to be effective against vessels passing over them.

DEPTH CHARGES

15. Depth charges (Fig. 6) are designed to give maximum underwater shock, at a predetermined depth, for attacks against submarines and other vessels. A 250-lb. depth charge containing 180 lbs. of explosive is at present available. Depth charges are hydrostatically fused.

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