Chapter 4

BOMBING EQUIPMENT

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DESCRIPTION

Introduction

1. This aircraft can be equipped to carry a variety of stores in an attacking, reconnaissance, or air-sea rescue role. Stores such as bombs, torpedoes, depth charges and marine markers can be carried in various configurations, the loading being dependent on the sortie being undertaken.

2. Accommodation for the carriage of the stores is provided in the bomb bay which extends over the full width of the aircraft from former B to former 22.

3. Release of the stores is operated electrically, controlled from switches at each of the following crew stations:-

First pilot Second pilot Tactical navigator Air bomber

Details of the electrical circuit and controls are given in Book 2, Sect.6, Chap.3N of this Volume.

BOMB BAY

General

4. A plan view of the bomb bay is given in fig.1 showing the location of strongpoints which provide an anchorage for pintles, from which the bomb carriers are suspended. The location of the crutching brackets is also shown. Twelve carrier stations are provided, numbered from front to rear and divided into four groups as follows:-

> Group 1 - Stations 1, 2 and 3 Group 2 - Stations 4, 5 and 6 Group 3 - Stations 7, 8 and 8A Group 4 - Stations 9, 10 and 11

Strongpoints

5. Two suspension pintle attachment strongpoints are provided at each station, one port and one starboard. They are in



• 11

the form of trunnion blocks, each block being mounted in two bearing brackets bolted to the fuselage longeron in the bomb bay roof. Each trunnion block, which is free to rotate in the bearing brackets, is drilled to accommodate the pintle attachment Pip-pin.

Crutching points

The crutching points, in the form of 6. brackets secured to the bomb bay roof, are so positioned that, when a carrier is fitted, they engage with the crutching pads of the carrier. Each crutching point except those serving Stations 4 and 8 has two bearing surfaces so that it serves the carrier stations immediately fore and aft of it. The crutching points serving Stations 4 and 8 have three bearing faces, the third face being used with the heavy duty carrier AV270. This permits a vertical crutching load to be imposed instead of a sideways load which would possibly cause structural damage.

Suspension pintles

7. The suspension pintles, illustrated in fig.1, when fitted to the strongpoints (para.5) provide the means of carrying the store carriers in the bomb bay. The pintles, in pairs, are installed at the carrier stations, one port and one starboard, a pair of pintles accommodate one carrier.

8. Each suspension pintle incorporates a micro switch connected by a lead to a two pin plug, and two curved ribs. The curved ribs engage with the rotating sleeve of the carrier locking unit when the locking unit is operated to lock the carrier in position. The micro switch operates, when the carrier is locked in position, to complete the carrier locking indicator circuit.

CARRIERS

General

9. Six main types of carriers, capable

of attachment to the suspension pintles, are used to carry the stores. The carriers are fitted transversely in the bomb bay, one carrier to each group of stations normally installed at any one time. The main carriers are as follows:-

Carrier		Ref. No.
Heavy stores	AV.210 Mk.2	11A/6341
A.S. bombs and torpedo	AV.270	11A/6368
Medium stores	AV.211 Mk.2	11A/6320
Torpedo and sonobuoy	AV.271	11A/6369
Sonobuoy	AV.272	11A/6370
Marine marker adapter	AV.275	11A/6371

The distribution of the stores load may therefore be varied by the discriminate use of the carriers and the suspension pintle stations.

10. In addition to the main carriers, marine marker carriers AV.193 (Ref.No. 1A/3875) and practice bomb carriers AV.247 (Ref.No.11A/4129) can be attached to certain of the main carriers.

Carrier AV.210, Mk.2

11. This carrier is used to carry torpedoes, information on which is given in Chapter 5 of this Section.

Carrier AV.270

12. This carrier can carry one or two A.S. bombs, in conjunction with torpedoes when loaded on bomb bay stations 4 or 8. When two bombs are carried with the carrier on bomb bay station 4 or 8, carrier stations 1 and 3 are used. When one bomb is carried when the carrier is on bomb bay station 4, carrier station 3 is used.

Carrier AV.211 Mk.2

13. Used for carrying depth charges in

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conjunction with other stores, this carrier can be loaded at any bomb bay station. The stores carried and the bomb bay stations used being dependent on the loading configuration for the sortie being undertaken. The marine marker carrier AV.193 is fitted to this carrier for the carriage of marine markers.

Carrier AV.271

14. Information on this carrier, which is used to carry torpedoes and sonobuoys, is given in Chapter 5 and 6 of this Section.

Carrier AV.272

15. This carrier, when loaded at bomb bay station 1, is normally used for carrying sonobuoys as described in Chapter 6 of this Section. The marine marker adapter AV.193 can be fitted to this carrier when required.

Carrier AV.275

16. This carrier, equipped with two carrier stations, is loaded at bomb bay stations 11 and fitted with two adapters AV.193 for the carriage of marine markers. When fitted with the simulator panel AV.283 this carrier can be fitted with the practice bomb carrier AV.247 and loaded at bomb bay stations 4 or 8. This simulator panel enables practice bombs to be used in lieu of A.S. bombs in training.

Loading

17. The stores are loaded, on the main carriers, in the preparation area and conveyed to the aircraft on the appropriate trolley. The trolley must be equipped with the correct loading and transportation cradle which is so constructed that the locking unit on each side of the carriers overlaps sufficiently to be clear of the cradle. The trolleys and cradles are described in A.P.1664D, Vol.1, 2nd Edition.

Hoisting equipment

18. The carriers, complete with load,







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are loaded into the aircraft by two jacks (Ref.No.26FP/384). Each jack is equipped with a complete hydraulic operating system, provision also being made for their operation by hydraulic pressure supplied by a power pack Mk.1, (Ref.No. 4G/5965), or Mk.2, (Ref.No.4G/5966). Each jack can, therefore, be operated independently using the self-contained hydraulic system, or in unison using either one of the power packs. The jacks and power packs are fully described in A.P. 1664D, (2nd Edition), Vol.1, Part 1.

19. Prior to raising a loaded carrier using a power pack, the power pack relief valve must be set to give the correct pretensioning pressure. The formula for calculating this pressure is given in A.P.2852B, Vol.1, Sect.5, Chap.2A.

Hoisting

20. When the loaded carrier, mounted on the transportation trolley, is positioned under the bomb bay station to be loaded, the two hoisting jacks are positioned, one under each carrier locking unit. The jack rams are then fully extended passing through the sleeves of the locking units. When the rams are fully extended the jacks must be lifted, manually, and the ram end adapters engaged in the suspension pintles. The jack rams are then retracted, in unison, drawing the jack cylinders upward to bear against the carrier, raising the carrier to engage the locking units with the suspension pintles. When the carrier is fully raised and pre-tensioned the rotating sleeves of the carrier locking units are turned to engage the ribs of the pintles and operate the locking indicator micro switch. The sleeves are rotated by two removable locking handles, inserted into the operating spindles of the locking units and turned clockwise.

LANYARD ATTACHMENTS

21. Lanyards used with the A.S. bombs are attached, by Pip-pins, to lanyard attachment beams which are secured to strongpoints in the bomb bay roof as illustrated in fig.2.

22. Strongpoints, bolted to intercostals, forward of the bomb bay roof cross member at former 10 provide the lanyard beam attachments for the bombs loaded at bomb bay station 4. The strongpoints, positioned in pairs, are so positioned that the lanyard attachment points on the beams are directly over the centre lines of the bombs.

NOTE ...

The inboard strongpoint of each pair also serves as a pick-up point for the auxiliary fuel tank.

23. Strongpoints bolted to the forward face of former 16A provide the attachments for the lanyard beams for the bombs loaded at bomb bay station 8. Positioned in pairs, one port and one starboard of the aircraft centre line, the strongpoints are positioned 7.125 in. apart with the outboard strongpoint 23.375 in. from the aircraft centre line.