

obsolete

Chapter 6

BATTERY, TYPE H, 24-VOLT, 5.5 AMP. HR.

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Battery, Type H, 24-volt, 5.5 amp. hr. Fig. 1

LEADING PARTICULARS

Battery, Type H, 24-volt, 5.5 amp. hr.	Ref. No. 5J/3316
Capacity—	
At 10 hour rate	10 amp. hr.
At 1 hour rate	5.5 amp. hr.
Weight (fully charged)	26½ lb.

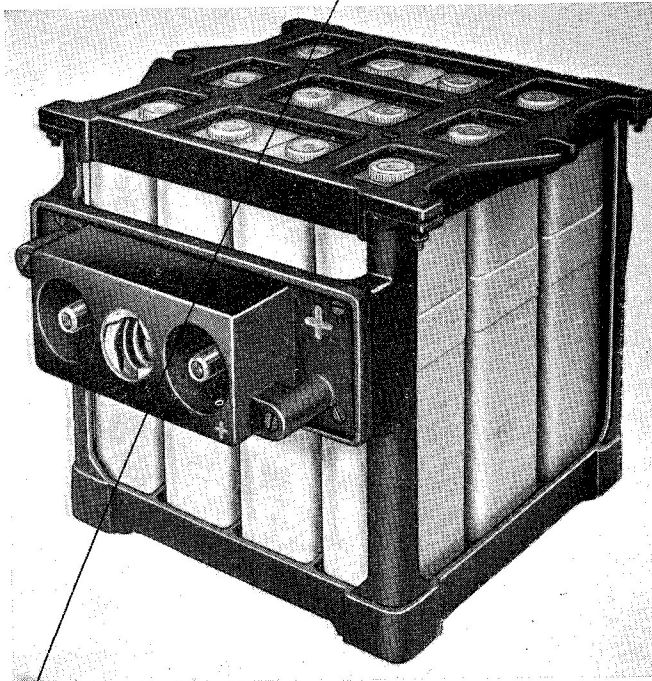


Fig. 1. Battery, Type H, 24-volt, 5.5 amp. hr.

Introduction

1. The battery, Type H, 24-volt, 5.5 amp. hr., is a fully unspillable aircraft battery which is capable of supplying currents up to 50 amp. for short periods. General information on lead-acid batteries is given in A.P.4343, Vol. 1, Sect. 3, Chap. 2.

DESCRIPTION

2. The battery (fig. 1) consists of twelve 2-volt cells arranged in four banks, and assembled in a metal crate. The cell containers are made of acid-resisting polystyrene resin, and the cells are fitted with microporous plastic separators.

3. Conventional external inter-cell connectors and terminals are not employed, but special connectors pass through the cell container walls by means of acid-tight

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seals, thus giving a considerable reduction in weight and voltage drop. The banks of cells are connected by means of special plugs which can be removed in an emergency, to enable one bank of cells to be renewed. This procedure should, however, only be adopted in an emergency, since it is not intended that the battery be dismantled normally.

4. External connection to the battery is made by means of a Cannon-type 2-pole plug and socket combination. The socket is an integral part of the battery, while the plug is connected to the aircraft wiring.

5. The battery is held in position by means of slotted lugs in the top of the crate and holding-down bolts. Special collared washers to fit in the recess in the lugs should be employed with the bolts.

SERVICING

6. General information on the servicing of lead-acid batteries is given in A.P.4343, Vol. 1, Sect. 3, Chap. 2. In addition, the following particular instructions apply.

Initial freshening charge

7. If the battery is received filled with acid, it should be given a short freshening charge as follows:—

(1) Check the electrolyte level in each cell and if necessary adjust to $\frac{1}{8}$ in. above the tops of the separators by the addition of distilled water.

(2) Charge at 1 amp. until the S.G. of the electrolyte in each cell remains constant for four hours.

Initial filling

8. If the battery is received unfilled with acid, proceed as follows:—

(1) Remove all seals from the vent plugs and ensure that the vent holes are clear.

(2) Fill each cell with sulphuric acid of S.G. 1.270 to a level of $\frac{1}{8}$ in. above the tops of the separators.

(3) Allow to stand for 6 hours.

(4) Restore the level of the electrolyte by adding acid of S.G. 1.270.

Note . . .

If the temperature of the electrolyte exceeds 43 deg. C (110 deg. F), do not commence charging until the temperature has fallen below this value.

Initial charge

9. (1) Charge at 1 amp. The charge is

complete when the voltage and S.G. remain constant for five consecutive half-hourly readings. This will take approximately 24 hours.

Note . . .

During charge a careful check on electrolyte temperature should be kept, and if it reaches 50 deg. C (122 deg. F), interrupt charging until the temperature falls below 43 deg. C (110 deg. F). In hot climates, charging may be performed at 0.5 amp. to avoid frequent interruption. The charging time will, of course, be approximately twice as long.

(2) If the electrolyte level is high, withdraw the excess. If the level is low, add acid of S.G. 1.270 and charge for a further hour.

(3) Check the final specific gravity, which must be between 1.275 and 1.295 (corrected to 60 deg. F). Adjust if necessary by adding acid of S.G. 1.300 or distilled water as the case may be. The adjustment should be made when charging to ensure adequate mixing of the electrolyte.

Routine charging

10. Never allow the battery to stand in a discharged condition. When it is found in service that the S.G. in all cells is below 1.230, the battery should be removed from the aircraft and given a normal charge as follows:—

(1) Charge at the appropriate rate until the voltage and S.G., when corrected for temperature, remain constant for three consecutive half-hourly readings.

(2) Maintain the electrolyte level by the addition of distilled water.

Note . . .

During charge the vent plugs should be left in position except when taking readings, etc.

Topping up

11. To maintain the unspillable characteristics of the battery it is essential that the electrolyte level be correct. The correct level is $\frac{1}{8}$ in. above the tops of the separators. The level should be checked at least once a fortnight and adjusted when necessary; after the first charge, adjustment of electrolyte should be made by the addition of distilled water only.

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Specific gravity readings

12. It may be necessary, when taking specific gravity readings with the battery in position, to loosen the holding-down bolts and tilt the battery. Always be sure to return the acid extracted to the cell from which it was taken.

Storage

13. The battery is fitted with microporous plastic separators which are dry and inert, and therefore the battery can be safely stored for very long periods, in the dry uncharged condition, in a suitable store.

14. When a filled and charged battery is out of use for long periods at a time, it should be treated as follows. Give the battery a normal charge, check the final S.G., and adjust if necessary. Short freshening charges should then be given at intervals of not more than six weeks. Before being put into service again, it should once more be brought to a fully charged condition. The freshening charges should be given at the normal rate until constant voltage and specific gravity readings are achieved.

