

**BELL SYSTEM PRACTICES**  
**Station Installation and Maintenance**

**SECTION C37.111**  
**Issue 3, July, 1954**  
**AT&T Co Standard**

## **DRY CELL BATTERIES AND BATTERY BOXES**

### **DESCRIPTION, INSTALLATION AND MAINTENANCE**

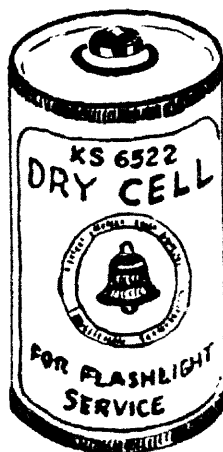
#### **1. GENERAL**

- 1.01 This section covers the description, installation, and maintenance of dry cell batteries and containers.
- 1.02 It is reissued to include information on the KS-8089 battery gauge and the KS-6522 dry cell and to bring other information up to date. Arrows indicating changes are omitted.

#### **2. DESCRIPTION**

- 2.01 Figs. 1 through 11, following, illustrate and describe the dry cell batteries and containers generally used for station apparatus.

##### **Description and Use**



**Fig. 1**

1-1/2-volt Dry Cell (flashlight type) used to supply transmitter of 331-type telephone set.

Order as:

**Battery, KS-6522**

### Description and Use



Fig. 2

1-1/2-volt Dry Cell (Blue Bell) for general use.

(Transmitters, signals, amplifiers, etc.)

Order as:

**Battery, KS-6542**

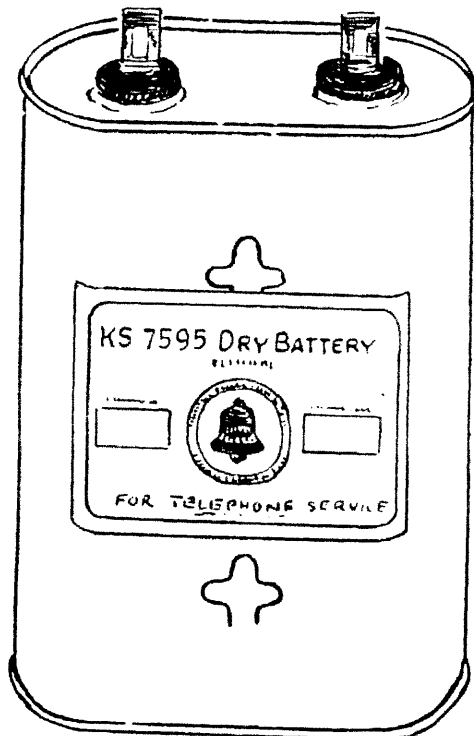
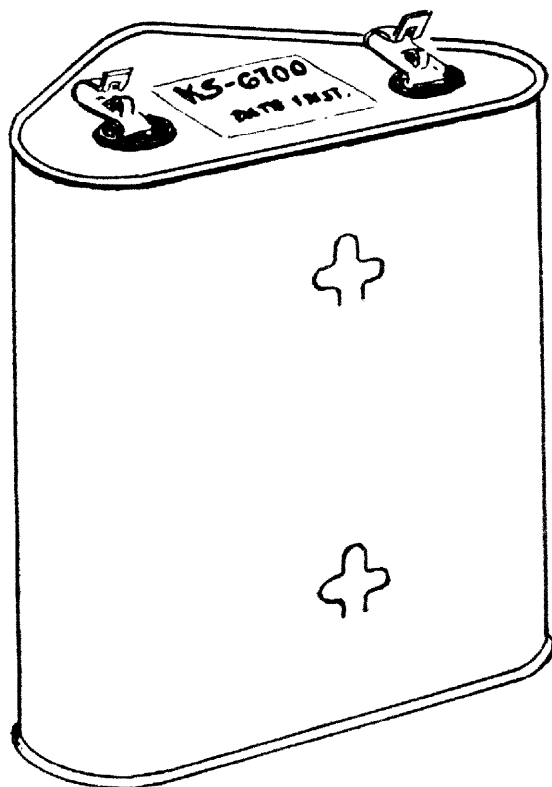


Fig. 3

3-volt Dry Battery (equivalent to two KS-6542 cells) in gray metal can arranged for horizontal or vertical mounting on flat surface.

Order as:

**Battery, KS-7595**

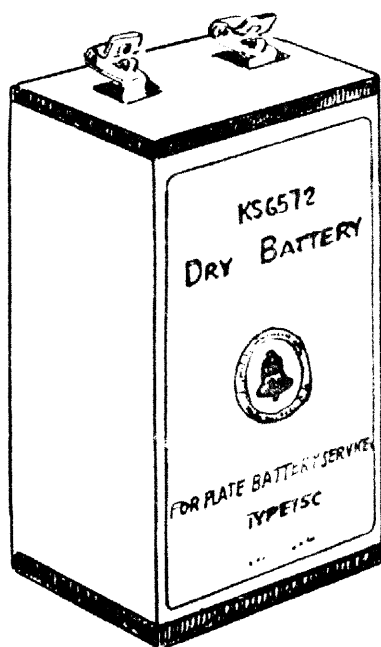


4-1/2-volt Dry Battery  
(equivalent to three  
KS-6542 cells) in gray  
metal can arranged for  
horizontal or vertical  
mounting on flat sur-  
face.

Order as:

**Battery, KS-6700**

**Fig. 4**



22-1/2-volt Dry Battery, used for  
buzzer signaling circuits and inter-  
communication supply for small  
systems.

Order as:

**Battery, KS-6572**

**Fig. 5**

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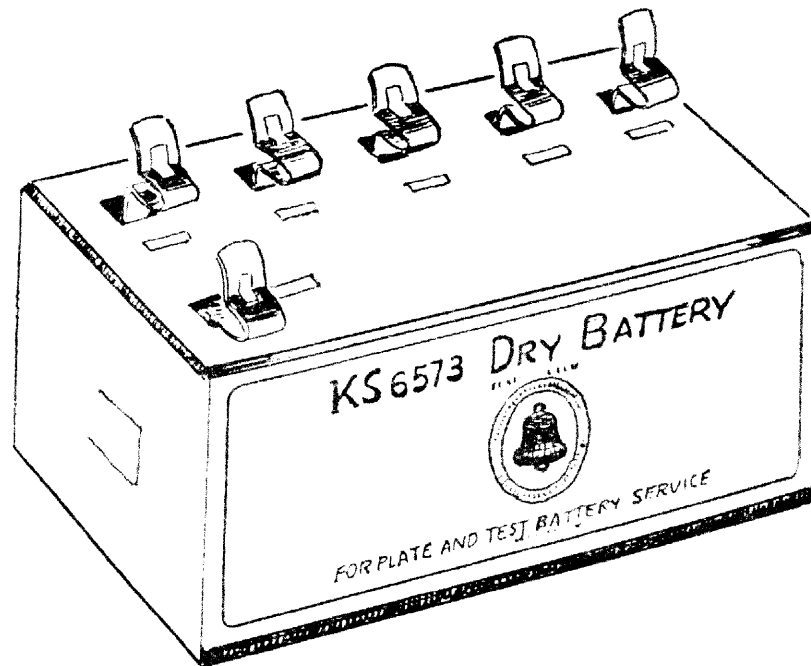
DRY CELL BATTERIES AND  
BATTERY BOXES  
DESCRIPTION, INSTALLATION  
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### Description and Use

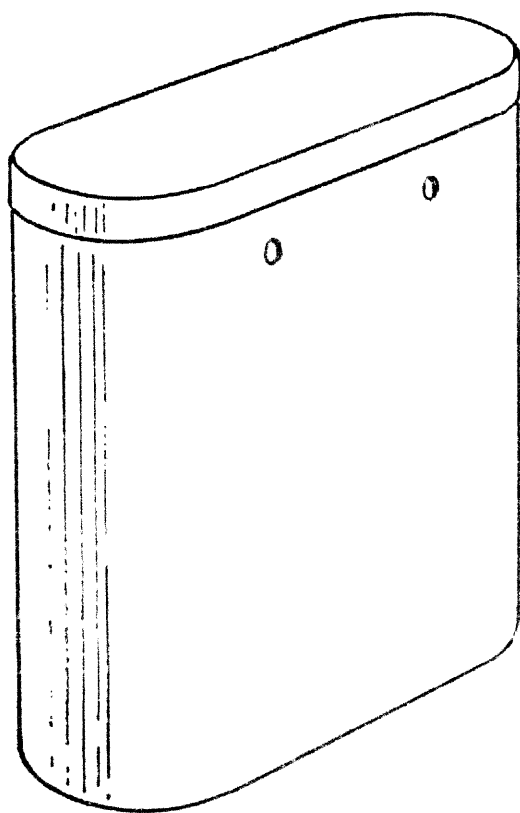
22-1/2-volt Dry Battery, used for plate current supply for Vacuum Tubes.

Order as:

**Battery, KS-6573**



**Fig. 6**



Metal container for housing three KS-6542 Dry Cells. Arranged for mounting on flat surface.

Order as:

**Box, Battery, 1A**

**Fig. 7**

Description and Use

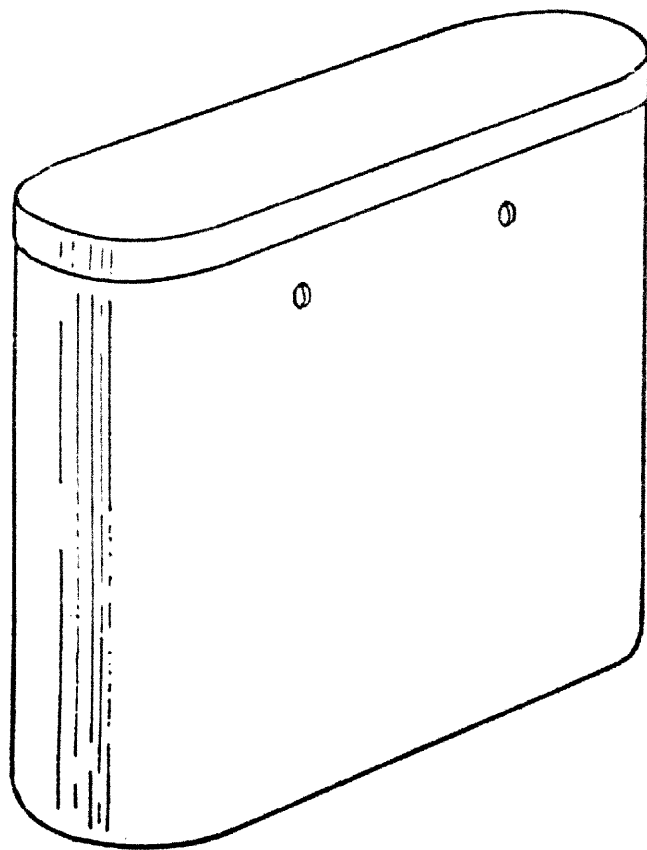


Fig. 8

Metal container for housing four KS-6542 Dry Cells or three KS-6572 Batteries. Arranged for mounting on flat surface.

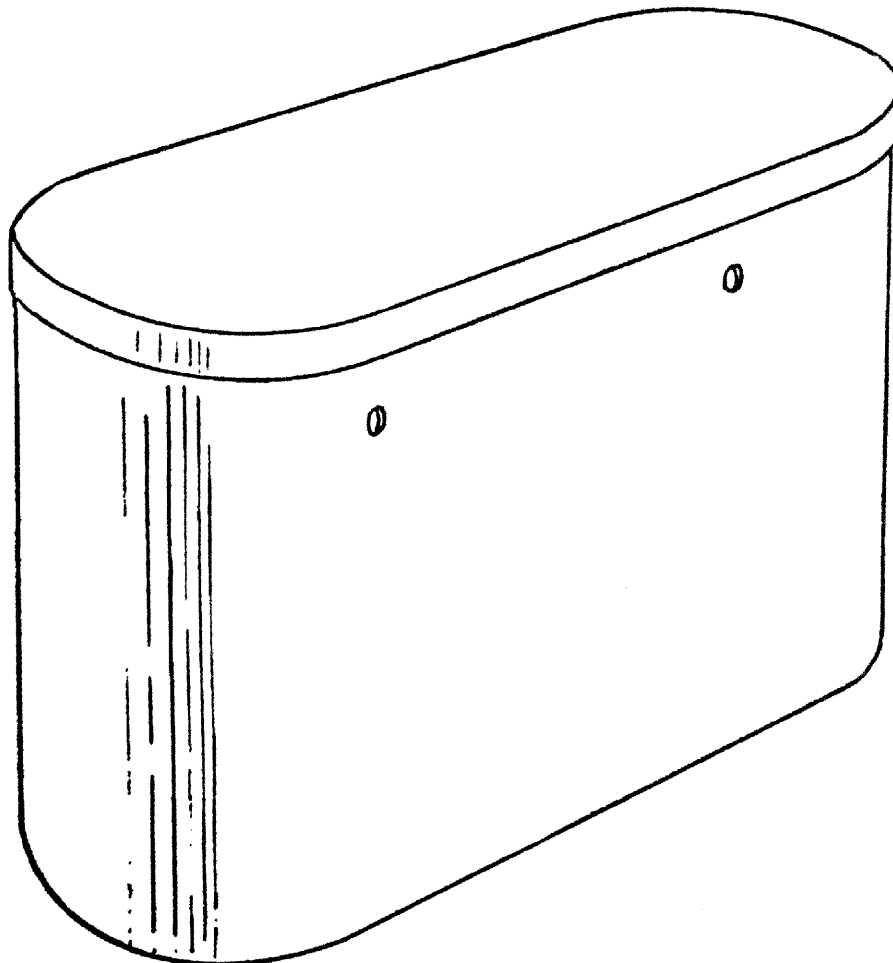
Order as:

**Box, Battery, 2A**

Metal container for housing nine KS-6542 Dry Cells. Arranged for wall or shelf mounting.

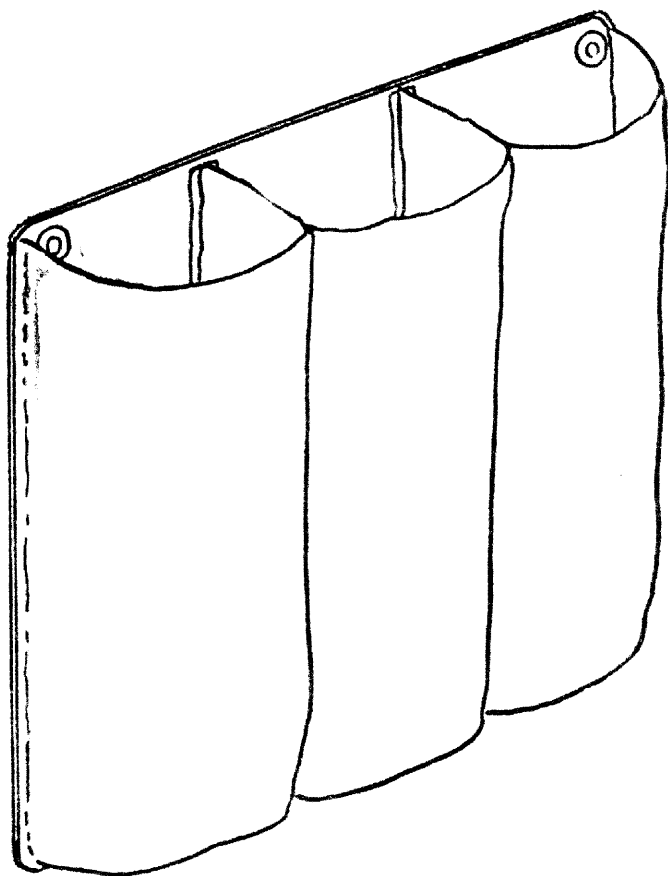
Order as:

**Box, Battery, 2B**



**Fig. 9**

Description and Use



Canvas bag for housing three KS-6542 Dry Cells, for use in clean locations where appearance is not important. Arranged for mounting on flat surface.

Order as:

**Bag, Battery,  
KS-6677**

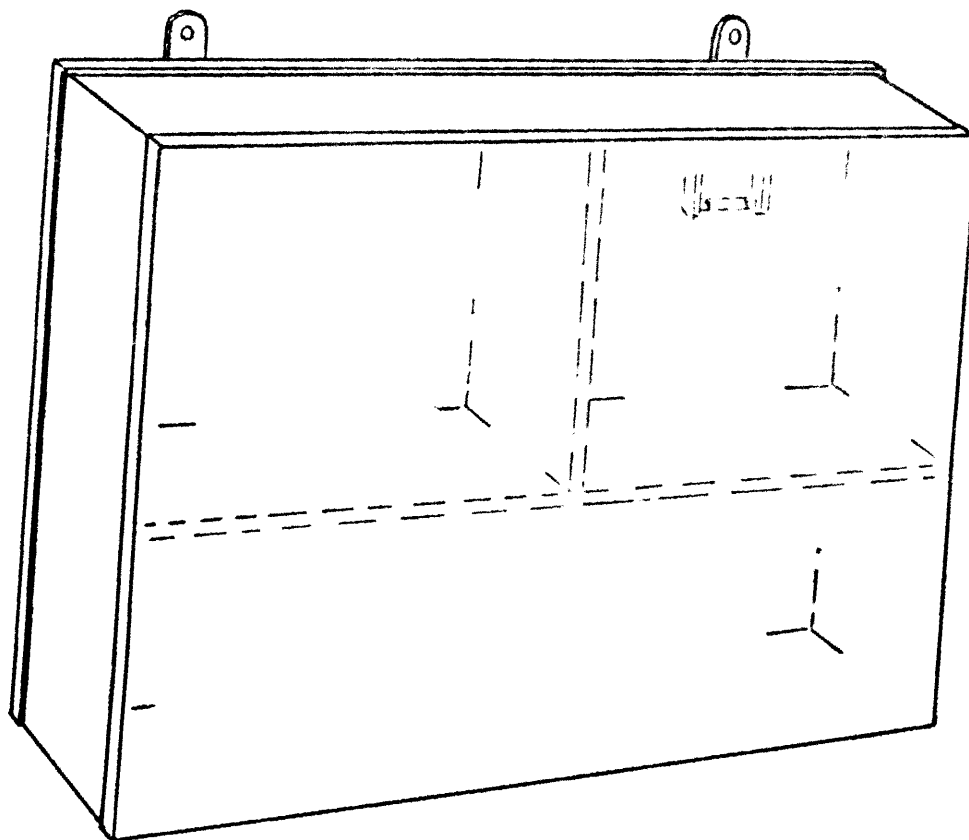
Fig. 10



Wood box for housing three KS-6542 Dry Cells and three KS-6573 Batteries. Equipped with 9A Fuse Block and 55A Fuse. Used with 23-A Amplifier. Arranged for mounting on flat surface.

Order as:

**Box, Battery, 9A**



**Fig. 11**

- 2.02 Unless otherwise specified, furnish batteries for transmitter supply as follows:

<u>Transmitter</u>	<u>Battery</u>
F1 Unit	3-volt (KS-7595 or equivalent)
323, 337 and equivalent	4-1/2-volt (KS-6700 or equivalent)
395B	Sidetone Stations 4-1/2-volt (KS-6700 or equivalent)
395B	*Antisidetone Stations 6-volt (Two KS-7595 in series (or equivalent))
396A	7-1/2-volt (One KS-6700 and one KS-7595 in series (or equivalent))

\* The use of a transmitter with an F1 unit (such as 625A transmitter) with 3-volt battery is recommended.

- 2.03 When given specific instructions to install an additional battery, as in cases where requirements are exceptional due to unusual amounts of traffic, connect an additional battery of the same number of cells in parallel with the battery regularly provided.

### 3. LOCATING AND MOUNTING

3.01 If the station subscriber set or associated backboard is not arranged to hold the batteries, use the unit type battery, battery box, or battery bag located as closely as practicable to the station set without being too conspicuous or in the way. Mount the battery box or battery bag on wall or other support where it will not be disturbed and associated wires are not likely to be damaged.

3.02 Do not locate battery in damp or unusually hot places, such as near or above stoves, furnaces, radiators, etc.; and mount it in such a way that the dry cells will be in a vertical or horizontal position but not upside down.

3.03 The 1A, 2A, and 2B battery boxes are provided with two pear-shaped mounting holes that will accommodate No. 8 R.H. screws. Space the two screws on a horizontal line 3-1/2 inches apart for the 1A box, 5-1/2 inches apart for the 2A box, or 8-1/4 inches apart for the 2B box. Turn screws in until the screwheads are just short of being flush with the surface. Hang the box on the screws and tighten screws. (Holes are provided in the front of the box for access.)

3.04 The KS-6677 battery bag is provided with two brass grommets spaced 8-1/4 inches apart. Space two No. 8 screws on a horizontal line 8-1/4 inches apart. Turn screws in with heads slightly tilted upward, until within about 1/4 inch of being flush with the surface. Hang battery bag on screw-heads.

3.05 Mount the 9A battery box with two No. 14 R.H. wood screws through the lugs attached to the rear upper edge of the box. To further secure the box, drill a hole through the back near the bottom and fasten it with a No. 8 R.H. wood screw. Screws shall be brought up snugly without screwhead clearance.

3.06 The unit type batteries, KS-7595 and KS-6700, are provided with two clover leaf punch-out mounting holes spaced 3-1/2 inches apart. Place two No. 8 screws 3-1/2 inches apart on a horizontal or vertical line and turn them in until just short of flush with the surface. Hang battery on screwheads in horizontal or vertical position as desired (not with terminals down).

#### **4. WIRING**

4.01 Use inside wire or cable as required from the battery to the equipment being served.

4.02 Place cells in container in such a manner that there will be no danger of terminals of adjacent cells touching. Wire between cells with No. 540 cords or insulated wire, leaving enough slack so that cells may be lifted out for inspection without disturbing connections.

4.03 Mark date of installation on space provided on battery.

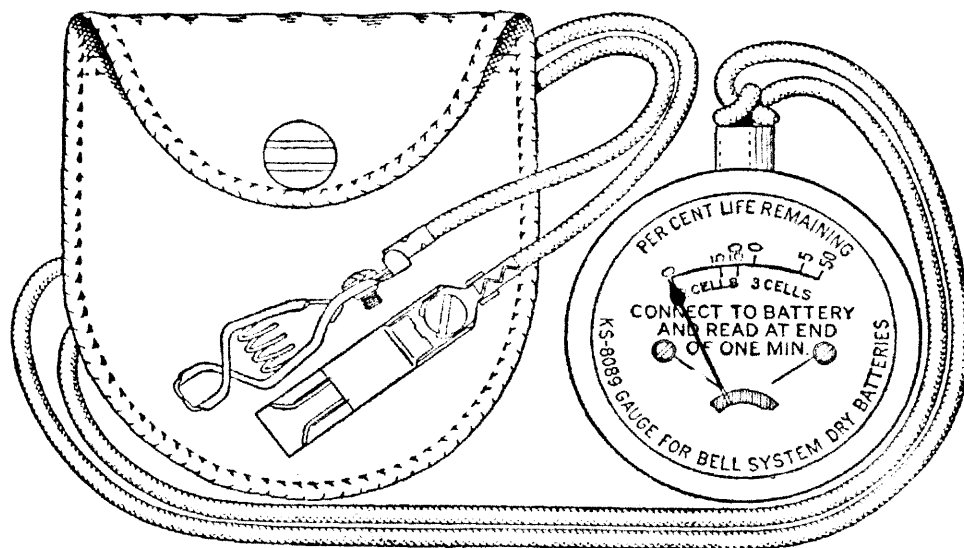
#### **5. MAINTENANCE**

5.01 Replace any dry cells that are swollen or leaking.

5.02 For certain special service dry cells may be replaced on a periodic basis as required by job instructions. For general service, however, batteries need not be replaced until tests show that they are no longer adequate. The normal life of cells used for transmitter battery is approximately 30 months for "average" use.

##### **Testing**

5.03 The KS-8089 gauge illustrated in Fig. 12 may be used to test two- or three-cell batteries. It is furnished with case as shown. The KS-8089 gauge replaces the 35-type gauge which is no longer manufactured.



**Fig. 12—KS-8089 Battery Gauge and Carrying Case**

**Gauge, Battery, KS-8089**

5.04 The scale on the gauge shows the per cent life remaining in the battery. The left-hand portion of the scale is printed in red and is for use when testing 2-cell batteries. The right-hand portion printed in black is for use with 3-cell batteries. Four-cell batteries may be tested in two groups of 2 cells each.

5.05 The test clips on the cords of the gauge should be connected to the battery terminals and if after one minute the needle falls to the 0 mark, all cells in the series group being tested should be replaced with new cells or unit type batteries.

5.06 The 5 and 50 marks are included to permit the user to estimate the per cent of battery life remaining. This, together with the date of installation of the battery, should be of assistance in determining whether the battery should be replaced.

5.07 If the KS-8089 gauge or its W2BM cord becomes defective, the entire gauge should be returned for repair.

### **Gauge, Battery, No. 35**

5.08 The No. 35 gauge is operated in a similar manner to the KS-8089 gauge. Connect the cords to the terminals of the battery being tested and allow it to remain for one minute. The scale is marked with a cutoff point for 2 or 3 cells. If the needle drops below the cutoff point, the cells should be replaced.

5.09 The No. 35 gauge may also be used to test a single cell. Proceed as above but hold the stem of the gauge depressed. If the needle falls below the cutoff point marked one cell, replace the cell.

5.10 Defective cords on the No. 35 gauge may be replaced with the W2BM cord (same as furnished with KS-8089 gauge). It will be necessary to cut a small section out of the closed eye of the cord tips in order to terminate them under the screwheads on the No. 35 gauge.

5.11 When testing groups of cells wired in parallel, it will be necessary to disconnect the parallel wiring and test cells in groups of two, three, or individually as appropriate.