REPLACEMENT PARTS AND PROCEDURES

ENCLOSED-TYPE, LEAD-ACID BATTERIES

1. GENERAL

1.01 This section covers the information necessary for the ordering and replacing of parts of enclosed-type, lead-acid storage cells.

1.02 This section is reissued to bring the information up to date generally. Since this reissue covers a general revision, the arrows ordinarily used to indicate changes have been omitted.

1.03 Part 2 of this section is called Replacement Parts and covers the various parts which may be replaced in the field.

1.04 Part 3 of this section is called Replacement Procedures and covers the approved procedures for the replacement of the parts listed under Part 2.

1.05 The gas given off by a battery on charge is explosive and the electrolyte is corrosive. See Section A401.001 for precautions to be taken against damage from exposure to electrolyte and against explosions.

1.06 Take precautions, as necessary, to be sure that service is not interrupted due to working on the cell. In some cases, it may be desirable to remove a cell from the circuit after first substituting a temporary cell in its place in the circuit. This means connecting the temporary cell in parallel with the damaged cell and then disconnecting the damaged cell.

1.07 Ammonia water or a strong soda solution (see Section A401.001) may be used wherever a neutralizing agent is called for herein.

2. REPLACEMENT PARTS

2.01 Field replacement of internal parts, except electrolyte, for enclosed-type cells is not recommended.

2.02 In addition to electrolyte, the parts usually considered replaceable are the external details, such as level indicators, funnels, ceramic vents, vent plugs, seal nuts for terminal posts, and connector bolts.

2.03 If plastic containers require replacement, replace the entire cell. If other types of containers require replacement, discuss with the local representative of the battery manufacturers.

2.04 Electrolyte is available in specific gravity of 1.300 at 60F or 1.215 at 60F. Either may be ordered as convenient and the order should specify "for storage battery use." Preparation of electrolyte from acid obtained locally is not recommended.

2.05 When ordering any battery part for replacement, give the following information.

(a) Name of part. See Section A801.003.
(b) KS and list number of cell.
(c) Rated size of cell in ampere-hours.
(d) Cell shipping date (marked on cell).
(e) Cell serial number, if on the cell.
(f) Cell manufacturer, and in the case of Gould, the factory designation T, D, or K as marked on the cell.

3. REPLACEMENT PROCEDURES

3.001 List of Materials

Ammonia, household

Clamp, C, obtain locally

Cloth, cleaning, KS-14666

Compound, battery sealing, battery manufacturer's type

Compound, Silicone, R-3126 D.C. No. 4 (2-oz tubes)

Nail set, obtain locally

Sandpaper, 4/0, commercial

Screwdriver, cabinet, 3 inches

Tubes, rubber, obtain locally (for use as siphon)

Soda, table (bicarbonate)

3.01 Before removing old electrolyte give a boat or equalizing charge in accordance with the operating section in use in the office and become familiar with the information in Section A401.001 on handling electrolyte. Empty the electrolyte by siphoning or tilting of the cell. Fill to maximum level with the new electrolyte as quickly as possible to reduce the time the plates and separators are exposed to the air. Give a second boost or equalizing charge, adding additional electrolyte, if necessary, to bring the electrolyte to maximum level just before the end of the charge.

3.02 When seal nut is removed, all exposed surfaces including cover and terminal posts should be cleaned and all products of corrosion removed. Neutralize all surfaces. The neutralizing agent should not be permitted to enter the cell. The terminal post should then be polished with sandpaper and covered with grease (silicone compound) as quickly as possible. Apply grease to all surfaces under the nut. Where there is a gasket, use a new gasket. Tighten nut and set in place with nail set or the equivalent. Wipe off excess grease and neutralize all exposed surfaces. Nuts of the type that have a grease ring should have the old grease replaced by fresh grease (silicone compound). Nuts of the type that are burned to the terminal post should be replaced only with the advice or assistance of the battery company local representative.

3.03 When changing a connector bolt, be sure that service is not interrupted. In some cases, after cleaning and neutralizing as much as feasible, the connection can be held together with a C clamp while the old bolt is removed and the new inserted and tightened. Where it is possible to open the connection, scrape off all products of corrosions from all the surfaces in and around the connection. In the case of lead-coated parts such as lugs, be careful not to remove enough lead to expose the copper. Neutralize all parts and dry the surfaces which are to carry current. Sandpaper surfaces to a bright finish and coat with silicone compound. Reassemble using the new bolt. Wipe off excess grease.

3.04 To replace level indicator floats, remove the indicator well by turning either the well or the packing gland at the top of the well counterclockwise. With some designs, a plastic disc or other retainer must be pried out of the bottom of the well before the old float can be removed and the new one inserted. Any broken glass or other debris in the bottom of the well should be removed. Replace retainer, if any, and return well to position. Float covers, if any, are slipped into position.

3.05 When handling ceramic parts, see that other materials such as oil, grease, paint, or dirt do not get on the ceramic part. Such material, if it clogs the pores of the ceramic, may result in cell overflow. Domes of Gould cells are readily removable. On some, removal is by loosening the screw stud at the top of the dome. When replacing this type, the head of the stud should be resealed to the ceramic with battery sealing compound and the soft rubber gasket, new one if necessary, installed under the base of the dome. On others, the dome is turned counterclockwise. Ceramic vents (pillboxes) of C & D cells require the use of a hot spatula for removal. It is suggested that the C & D local representative be requested to do this work. The explosion-proof vents used on small cells are either bayonet or screw type. They are removed by turning counterclockwise.