

BATTERY INSULATORS, OIL INSULATORS and CHLORIDE ACCUMULATORS



Figure 2: "Birdfeeder" battery insulator.



Figure 4: USL No 2, light aqua



Figure 6: Gould Battery (R)
Patented Dec. 1. 1896, light green



Figure 7a: Chloride Accumulator /
The E.S.B. Co., aqua



Figure 7b: Chloride Accumulator /
The E.S.B. Co., battery rest, green.



Figure 9: CD-29
no embossing, light-green



Figure 10: CD-20
E.S.B. Co.



Figure 11: CD-24 embossed The
United States Light & Heating Company, aqua



Figure 12: CD-30 embossed
Chloride Accumulator / The E.S.B. Co.,
emerald green



Figure 13: CD-22.5 embossed: (F) Gould
Battery (R) Pat. Dec.1.1896, yellow-green



Figure 15: A CD-22 with no embossing in
deep violet cobalt blue.



Figure 16: CD-40 with no embossing in
dark aqua.

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First Place - Writer's Choice Contest - Research Info
The Delmarva Blowpipe newsletter; Delmarva Antique Bottle Club

From the first time that a cell or battery was used to supply electricity, a way was needed to prevent or reduce the leakage of electric current. This leakage occurred when the surface of the cell or battery (and the support that it was placed on) became coated with a fine deposit of acid-laden moisture and dust.

It was found that electric leakage was reduced if each cell or battery (a series of cells) was isolated from the support on which it sat.

Wood framing was used, but it was discovered that over time the wood would absorb the acid-laden moisture. This created a direct path for electrical leakage and eventually the acid moisture would cause the wood to rot.

Battery insulators were used with DC electric systems as low as 1-2 volts and up to 600 volts and greater.

Lower DC voltage was used for a short time with telegraphs, alarms, and railroad signals. Higher voltage was used for lighting, motors, pumps, etc. Originally, plain glass battery insulators were placed between wooden stringers and the battery tank. This proved to be insufficient ... so, glass insulators were added between the wood stringers and the floor. This combination became known as "Double Insulation."

However, this did not prevent the decay of the wooden stringers, so the Electric Storage Battery Company (E.S.B. Co.) designed and developed the combination of an oil insulator and an earthenware pedestal that solved the problem of the wood decaying. This earthenware pedestal / oil insulator became the standard for the industry and made it possible to finally do away with the wooden stringers.



Figure 3: Glass tray.

Illustrated on the right [Figure 1] is a complete Pedestal / Oil Insulator unit consisting of the cupped lead washer, alloy cap, Y lead washer, oil insulator and the insulator pedestal. It can be seen how the insulator and the pedestal lock together. It is believed that this is a one-of-a-kind, complete unit. The patent for this invention that was granted to Cornelius Ambruster of Roslywn, Pennsylvania on July 13, 1915.

The oil insulator / earthenware pedestal was used to support a battery tank with lead. The exterior was coated with asphaitum. Four to six CD-35s or CD-36s were used to support this style of battery tank.

Please notice the base of the pedestal. The uneven design of the base of the pedestal allowed water and foreign material to pass under the support when flushing the battery room floor.

Birdfeeders

The nickname "birdfeeder" was given to the CD-35 and CD 36 around 1969. The collectors at that time thought they resembled a bird feeder. There is an example of an aqua CD-36 embossed "The E.S.B. Co. (R) Made in U.S.A. B-15993-3" illustrated on the right [Figure 2].

These battery insulators were very unique because they used a nonconductive oil that was put in the circular trough and was then covered by a lead-alloy cap. The purpose of the cap was to exclude, as far as possible, all spray or other foreign matter from getting into the oil space and to protect it from being splashed when flushing the Battery Room floor.

Glass Tray

Jars that were not sealed were set



Figure 5: Gould Battery (R)
Patented Dec. 1, 1896, aqua



Figure 1: Pedestal oil insulator.

on separate glass trays [Figure 3] or boxes filled with sand. This was necessary due to the absense of a sealed cover which allowed acid-laden moisture to run down the outside of the jar and attack the wooden support (susceptible to rot) that the battery sat on.

Glass Thread Screw Battery Insulators

This type of Battery Insulator has a very fragile male glass thread screw. It is believed that the thread was used to secure the insulator in the wooden stringers that supported the battery so that the insulator and support could be moved as a unit. Several are illustrated [Figures 4-6].

What Is A Well?

The wells (circular trough) that are a part of some of these insulators were used to collect Chlorides that would seep down the sides of the cell (battery jar). This type of battery insulator is known as a "Chloride Accumulator" and some are embossed with that information [Figure 7a and b].

United Kingdom Battery Insulators

British battery insulators are different from battery insulators that were made in the United States.

The British battery insulators are in two parts: a base unit and a top. The smaller size bases have a round bump in the center that matches a depression in the top's center to locate and secure the two pieces together.

Four two-part styles are known. Until



Figure 8 British battery insulators are in two parts.

a year ago, the only colors known to exist in the in the two-part battery insulators were light green and light aqua. Illustrated [Figure 8] is a clear base battery insulator that is believed to be the only one known at this writing.

The only known light-green “unipart” in the U.S.-style has a solid center instead of hollow center and has a corrugated base.

The style numbers and letters of the United Kingdom battery insulators were assigned by Ian Mackey and are not “officially” recognized numbers by the insulator-collecting community at this time.

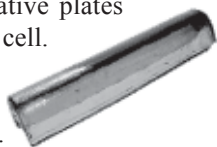
Colors for Battery Insulators

Colors of battery insulators range from various shades of aqua to green, clear, smoke, lavender, 7-Up green, emerald green, yellow-green, cobalt blue, blue and amber.

What Are Glass Battery Plate Spacers?

It is believed that the “U” shaped glass bars were part of a failed attempt to insulate the positive and negative plates from each other in a cell.

At this writing, no proof has been found to support this theory.



The only reference found was to “rods” being used in a patent issued to Stanley C.C. Currie of Philadelphia, Pa., October 14, 1890, #438,532... “insulated from one another by means of rods.”

“Plate spacers” have been found in various shades of aqua, blue and green.

Manufacturers

Some of the manufacturers known to have produced battery (rests) insulators are: Brookfield Glass Company, Old Bridge, New Jersey; The Elmer Glass Co., Elmer, New Jersey; Hemingray Glass Co., Muncie, Indiana.

Dumps that were used by these companies have been excavated by collectors. Battery insulators, shards of, and warming pours of battery insulators were found at some of the manufacturer’s dumps.

The following is a list of battery insulator (or pieces of such) that have been found in some of the manufacturer’s dumps:

Brookfield Dump - Old Bridge, New Jersey: CD-20, Gould; CD-29, no embossing [Figure 9]; CD-53, U.S.L. [Figure 4]

Hemingray Dump - Muncie, Indiana: CD-24, U.S. Light & Heating Co. [Figure 11]; CD-24, National Battery Co.; CD-33, no embossing

Elmer Glass Co. Dump - Elmer, New Jersey: CD-35, no embossing; CD-36, E.S.B. Co. [Figure 2]

Earliest Patent Date

The earliest known patent date for a glass battery insulator is July 12, 1870. The patent number 105,252 was granted to Orris W. Robertson of Milwaukee, Wisconsin.

The E.S.B. Co.

The Electric Storage Battery Co. (E.S.B. Co.) of Philadelphia, Pennsylvania was founded in 1888 by W.W. Gibbs. By 1908 they were using glass for their battery (rests) insulators.

The information is supported by copies of various patents.

Figure 10 illustrates an E.S.B. Co. CD-20 in aqua. **Figure 12** is an emerald green example CD-30 embossed “Chloride Accumulator / The E.S.B. Co.

Gould

Gould Storage Battery Co. was founded in 1898 by Charles Gould of New York. Their first patent for a battery insulator is 1913.

Figures 5 and 6 illustrate two Gould insulators. **Figure 13** is a beautiful example of a yellow-green CD-22.5 patented Dec. 1, 1896 while **Figure 14** features another CD-22.5 in light lavender.



Figure 14: Another CD-22.5, this one light lavender in color.

U.S.L.

In 1898 the National Battery Company was formed. Electric Autolite later gained control of National Battery Company and operated it under the name of U.S.L. Battery Company.

Figure 4 illustrates an example of a U.S.L. CD-53 insulator in light aqua.

No Written History

The collecting of “battery (rests) insulators” is a specialty within the hobby of insulator collecting. Although we are learning more about how the battery insulators were used and who made them, the history of the battery insulators has yet to be written. More written documentation is needed.

At this time, there are still unlisted styles with no history [Figures 15 and 16] and others just waiting to be discovered.

As Collectors, Our Goal

Hopes are that as you read this article you will become more aware of the different styles (CD numbers) and the range of colors, as well as some basic history of the battery insulators, oil insulators and chloride accumulators.

Resources:

John and Carol McDougald, *History & Guide to North American Insulators*.

Judy Kokal, Gould Electronics Inc.

Deb Burkhart, EnerSys (Exide).

Glenn Drummond, patent information.

Ian Mackey, American / British Battery Rest Gallery website.

Elton Gish, patent information.

E.W. Allen, storage batteries.

NIA (National Insulator Association) website.

Smithsonian Institute, Washington, D.C., research.

Bill Meier, ICON.

Dann Cochran, Hemingray dump info.

Bob Stahr, Hemingray dump info.

David Sztramski, Brookfield dump info.



This article came from a brochure created as part of Charles and Sandi’s display of battery insulators, oil insulators and chloride accumulators that won three awards: Best of Show, Most Educational and People’s Choice during the Lewes, Delaware show in Sept., 2005.