2016 PDF edition

Old Familiar Strains

A newsletter for Collectors of Radio Strain Insulators and related items
Volume 2 No. 2 April 1995

CATALOGING RADIO ANTENNA INSULATORS: Part II

by Dan Howard

End Insulator Shapes and Styles, Part I

A first step in cataloging insulators is identifying common features and subdividing the insulators into families.

One of the simplest things to tell about an end insulator is the way that it "works." Most end insulators either work in tension (with the conductors pulling away from each other) or in compression (with the conductors pulling toward one another) (see Figure 1). Tension insulators will be covered in the second part of this article.

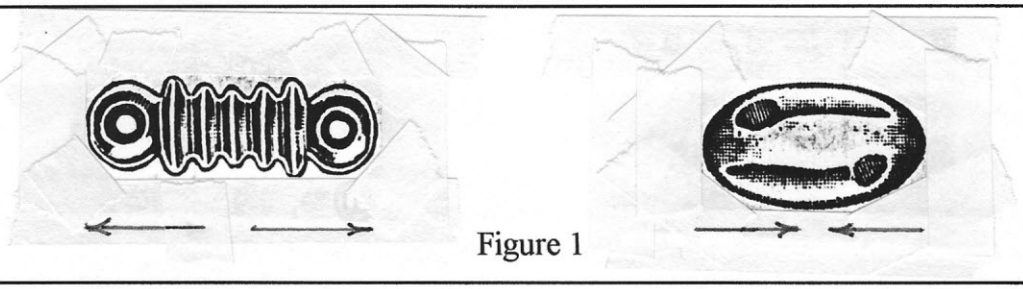


Figure 1

Compression Insulators

Compression insulators are designed so that the conductors overlap and pull toward one another. In theory, if the insulator fails, the wires may remain linked together. By placing an insulator in compression, designers are able to take advantage of the crush strength of the "dielectric" (the insulating material) which may be considerably higher than its tensile strength. Additionally, compact and robust compression insulators are less likely to suffer catastrophic fractures than long skinny tension insulators.

Because the conductors overlap, arcing-over can be a problem at higher voltages. The design may also make them more susceptible to leakage due to pollution, rain, or other contaminates. To overcome this problem, compression insulators are sometimes linked in series to create longer arc-over paths.

(Continued on Page 4)

Editorial
by Dan Howard

Publicity: We've got friends in good places. I know it's bad grammar but it's heart-felt. A big THANK YOU to Carol McDougald, the editor of "Crown Jewels of the Wire" magazine for donating a 1/3 page ad in the February issue. This ad, and others, generated fifteen inquiries during the past few weeks! "Old Familiar Strains" welcomes David Atkins, Bob Evans, George Freeman, Ted Gogniat, David Hall, and Jeff Hogan.

Letters: Several readers sent letters recently and I have excerpted a few comments on page 6. I appreciate your responses to the "What Do We Collect" article in the last issue and am pleased that it has been useful to you.

It's working!: One of our primary goals is to pool information and then share the results. Case-in-point: The article on Pyrex insulators on page 8. This article reflects contributions by five readers! Please keep the letters coming.

New Service: As described on page 6, if you have an insulator or lightning arrester with an odd brand name, write to me and I will check my files to see if a manufacturer can be determined.

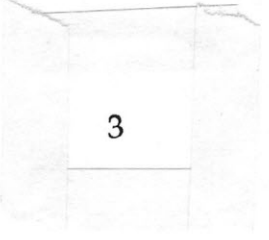
Transposition Insulators: At the time that the last issue went to press, I couldn't find a good picture of a transposition insulator. I have since confirmed that several companies besides E F Johnson made them and have printed a copy of an ad on the back page of this issue.

Classifieds: Finally, thank you for sending in classifieds. Remember, you are entitled to a free ad in each issue. (see ad policy on page 2). However, please stick to antenna insulators and related items only.

Budwig Update
by Dan Howard

I recently located some early ads for Budwig antenna insulators. (See Vol. 1 No. 5) According to my findings, Budwig purchased ads in "73", "QST", and "Ham Radio" magazines beginning in August, 1964. The latest ad that I found was March, 1969. The line drawing of the HQ-1 center insulator in the ads differs from the units in my collection. That may be due to artistic license, however.

In February, I located a pair of HQ-2 end insulators at the Salem, OR Hamfair. Both pieces are translucent root beer colored plastic. One reason that Mr. Budwig may have begun using Fiberglas instead of plastic is durability; both of the root beer pieces are badly chipped.



In the May, 1923 QST, the authors recommend placing compression insulators in tension as shown in Figure 2 to overcome capacitance and arcing over problems. (This may also "overcome" some of the design advantages of the insulator).

After studying my collection, reviewing the sketches that Dick Mackiewicz sent me, and browsing through ads, I have identified four different types of compression insulators that were used with radio antennas. Each type is defined according to how the antenna wire is wrapped around or through it.

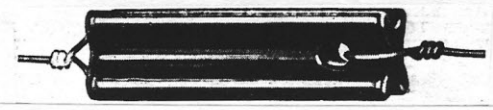


Figure 2

Type I

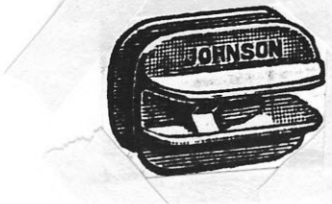


Figure 3

The conductors lay in grooves around the outside of a Type I insulator. As seen in Figure 3, prominent fins flank the wire grooves on some Type I's. I assume that adding fins creates a longer leakage path and may help keep the insulator in place.

Figure 4

Type II

When a Type II is used in compression, the conductors lay in grooves along the length of the body and pass through holes in the ends. This may be the most common style of compression insulator. The popular "egg" and "airplane" styles are shown in Figures 4 and 5. Larger Type II's, known as "Johnny Balls", (see Figure 6) are used to insulate guy-wires and for other purposes.

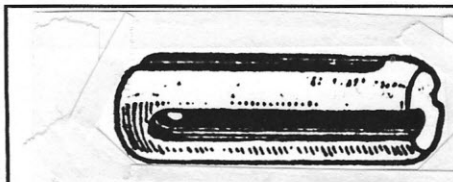


Figure 5

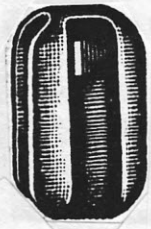


Figure 6

Dick Mackiewicz asked, "At what size does an 'egg' insulator becomes a 'guy' insulator?" I have seen 1 1/2" diameter Type II's advertised as antenna insulators but have seen much larger ones in use. In fact, the ad for the tiny egg shown in Figure 4 says that it also can be used for "light" guy wires.

(Continued on page 7)

Readers Write

I really enjoyed the last issue of OFS. I also collect wall insulators and never thought that they might be used in radio applications. Also, I have several bars of porcelain and were not quite sure what they were but after looking at figure 7 on page 8 (Vol. 2 No 1 ed.), I think that they may have been 12 inch versions of the Feeder spreaders. I also have an insulator that may have been used to support a radio station antenna. It is over 3 feet long, and made of porcelain by Ohio Brass.

Rick Soller 2/95

Have enjoyed seeing this get off the ground and growing. Think that the readership would be most interested in focusing on insulators, especially the antique variety. But I am sure that there will be enough stories of collecting, manufacturers, etc. to keep everyone happy.

Jim Singleton 2/95

You are doing a fine job of educating us all so we can speak the same language about our great hobby. Keep it up!

Shirley Patocka 2/95

Brand Name Service

by Dan Howard

A good friend gave me Lehner's Encyclopedia of U.S. Marks on Pottery, Porcelain, & Clay for Christmas. If you have marked insulators or lightning arresters and would like me to look them up for you in Lehner's or in my ad library, send me a note.
Please include all information available (including place names, patent numbers, etc.) as it may help me confirm that I have the correct company. If I can find out who made the item, I will try to report back to you in the following issue of "Old Familiar Strains". Please include an SASE with your inquiry if you require a more timely answer.

Lightning Arrester List

by Dan Howard

Bob Puttre recently sent me a draft of his list of lightning arrester brand names. Bob has been in touch with Dick Mackiewicz and me and has developed some names from his own sources. If you would like to contribute a few names to his list, please do so. I appreciate Bob's willingness to coordinate this project.

Type III

Type III compression insulators have holes running through them from end to end. Both conductors are enclosed except at the ends. Figure 7 shows a Kreuz insulator of this type. My collection includes barrel-shaped and cube-shaped Type III porcelain insulators.

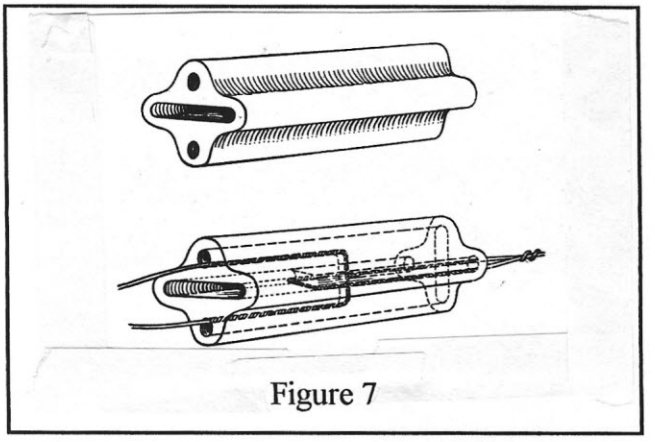


Figure 7

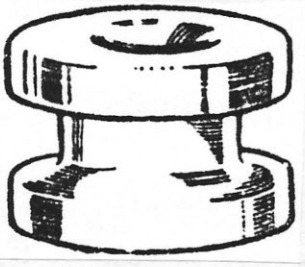


Figure 8

Type IV

The fourth type of compression insulator is the "spool." When a spool insulator is used, one conductor passes through the body of the insulator and the other wraps around the outside (see Figure 8). Spools are used for many purposes including house wiring and electric fences. My RCA antenna kit came with spools factory-soldered to the ends of the antenna.

Conclusion

The next installment will describe end and body features that differentiate tension insulators from one another. I know that there are lots of really strange designs out there. If you can send a description or line drawings of unusual tension-type insulators from your collection, I would like to include them in the article.

To date, a scheme for grouping tension insulators into families has eluded me. Once we have pooled our resources, I am sure that patterns will emerge which will lead to placing the insulators into families. By all means, if you have had some success in this area already, please let me know.

Steve Watkins recently offered an ingenious way of describing rib patterns that I will enjoy sharing in the next issue.

Sources:

Young, L.C. and Reinartz, John et al 4 "Some Tests of Amateur Antenna Insulators," "QST", May, 1923 pp. 24 - 30.

Figure 1,3,4,6: Allied Radio Catalog #110, 1943, Chicago, IL, pg. 56.

Figure 2: QST November, 1923, pg. 134. Used by permission.

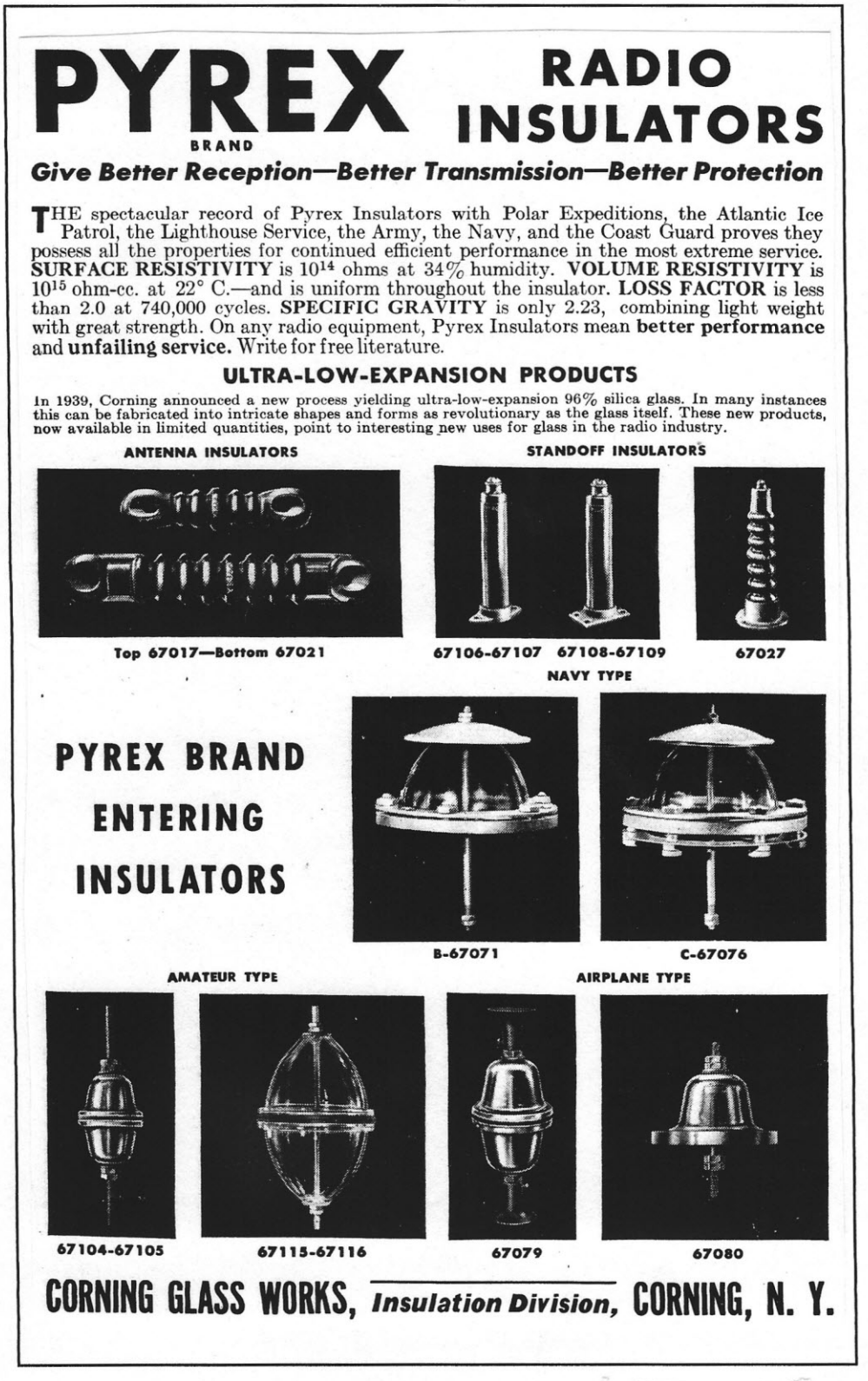
Figure 5: Radio's Master 19th Edition, 1955, pg. S-44.

Figure 7: QST October, 1924, pg. 60. Used by permission.

Figure 8: Amarillo Hardware Co. Catalog, 1970, pg. F-1 (Courtesy of Jimmy Burns.)

A Brief Look at Pyrex Insulators

by Dan Howard



PYREX BRAND **RADIO INSULATORS**

Give Better Reception—Better Transmission—Better Protection

THE spectacular record of Pyrex Insulators with Polar Expeditions, the Atlantic Ice Patrol, the Lighthouse Service, the Army, the Navy, and the Coast Guard proves they possess all the properties for continued efficient performance in the most extreme service. **SURFACE RESISTIVITY** is 10^{14} ohms at 34% humidity. **VOLUME RESISTIVITY** is 10^{15} ohm-cc. at 22° C.—and is uniform throughout the insulator. **LOSS FACTOR** is less than 2.0 at 740,000 cycles. **SPECIFIC GRAVITY** is only 2.23, combining light weight with great strength. On any radio equipment, Pyrex Insulators mean **better performance** and **unfailing service.** Write for free literature.

ULTRA-LOW-EXPANSION PRODUCTS

In 1939, Corning announced a new process yielding ultra-low-expansion 96% silica glass. In many instances this can be fabricated into intricate shapes and forms as revolutionary as the glass itself. These new products, now available in limited quantities, point to interesting new uses for glass in the radio industry.

ANTENNA INSULATORS

Top 67017—Bottom 67021

STANDOFF INSULATORS

67106-67107 67108-67109

67027

PYREX BRAND ENTERING INSULATORS

NAVY TYPE

B-67071

C-67076

AMATEUR TYPE

67104-67105

67115-67116

AIRPLANE TYPE

67079

67080

CORNING GLASS WORKS, ***Insulation Division,*** **CORNING, N. Y.**

Pyrex glass insulators were made by Corning Glass Works of Corning, New York. According to Carol McDougald's book, "Corning Glass Works produced...radio insulators from 1924 to 1951."

Units produced for the military may bear Corning's military source code, CBI.

In August, Jim Overstreet wrote inquiring about a Pyrex insulator with "flukes" on the end. Jim, is the insulator similar to the model 67021 shown in these ads?

Sources:

Chessen, F.W., "Electronic Military Equipment: Naval Equipment Manufacturers," The AWA Review Vol. 7, 1991: Holcomb, NY pp. 69-89.

Corning Glass Works, "Pyrex Radio Insulators," 1929: Corning, NY, pp. 12-13. (Courtesy of Jim Singleton).

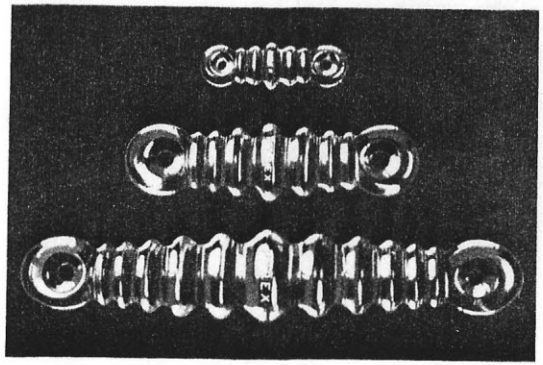
McDougald, Carol and McDougald, John, Insulators A History & Guide to North American Glass Pintype Insulators Vol. 1, 1990: St. Charles, IL, pp. 129-132.

"Radio News" January, 1942, pg. 76.

Thanks to Jeff Hogan.

Standard PYREX Radio Insulators

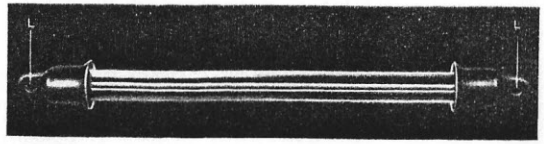
PYREX ANTENNA INSULATORS



	Broadcast Reception Insulators	*Amateur Transmitting*	*Strain Insulator*
Number	67007	67017	67021
Length (overall)	3 5/8 in.	7 1/4 in.	12 1/4 in.
Developed leakage path	3 9/16 in.	6 in.	11 3/16 in.
Average flashover value (Kv.) Wet	22.5	32	84
Average flashover value (Kv.) Dry	38	75	124
Weight	3 oz.	13 1/2 oz.	1 lb., 14 oz.
Strength	450 lb.	1,000 lb.	1,000 lb.
Suitable for powers up to		250 watts	1 1/2 kw.
Price, each	$0.30	$1.50	$3.50
Packing	One in carton 12 in display box 12 display boxes in case	One in carton 36 cartons in case	12 in case
Galvanized Shackles, complete, one for each end (extra)	$1.00		$1.00

PYREX STRAIN INSULATORS—NAVY TYPE SE-2193

Every Type SE-2193 PYREX Radio Insulator is actually tested to 3,200 pounds pull strain.

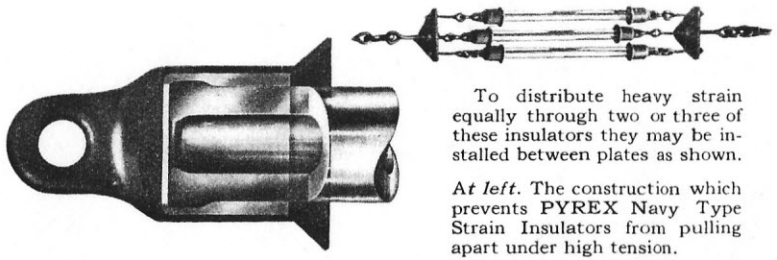


No.	*Average Length (L. to L.)*	*Outside Diameter of PYREX Part*	*Weight*	*Developed Leakage Path*	*Average Flash-over Value (Kv.) Wet*	*Dry*	*Price Each*
67045	12 in.	1 7/8 in.	8 lb. 10 oz.	3 7/8 in.			$18.50
67044	16 in.	(same for	9 lb. 6 oz.	7 7/8 in.			18.50
67043	18 in.	all Type	9 lb. 12 oz.	9 7/8 in.			18.75
67052	20 in.	SE-2193	10 lb. 2 oz.	11 7/8 in.			19.00
67053	22 in.	Insulators)	10 lb. 8 oz.	13 7/8 in.			19.50
67046	24 in.		10 lb. 14 oz.	15 7/8 in.			20.25
67054	26 in.		11 lb. 4 oz.	17 7/8 in.			21.00
67055	28 in.		11 lb. 10 oz.	19 7/8 in.			21.75
67008	30 in.		12 lb.	21 7/8 in.	129.5	219	22.50
67048	32 in.		12 lb. 6 oz.	23 7/8 in.			22.50

Made in Corning, New York, U.S.A. by Corning Glass Works

PYREX

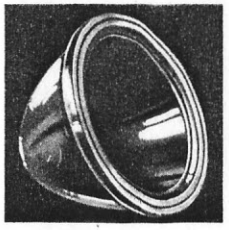
The world's largest manufacturer of Technical Glassware



To distribute heavy strain equally through two or three of these insulators they may be installed between plates as shown.

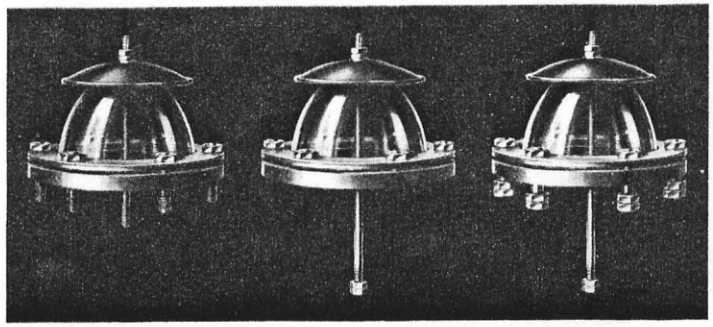
At left. The construction which prevents PYREX Navy Type Strain Insulators from pulling apart under high tension.

PYREX ENTERING INSULATORS—NAVY TYPES



No.	67009	67037
Navy Type	SE-1846	SE-2202
Weight	1 lb. 11 oz.	2 lb.
Height overall	4 3/8 in.	4 3/8 in.
Outside diam. at base	6 1/16 in.	6 15/16 in.
Price, each	$1.50	$1.50

Type SE-2202 can be furnished with three types of brass fittings and aluminum shield as shown herewith.



Type A—No. 67070 $15.00 | Type B—No. 67071 $16.50 | Type C—No. 67076 $16.50

Average flashover value—Type A—(Kv.), Wet, 27.5; Dry, 43.

All types have flanges 8 1/4-in. diam. with six 1/2-in. studs equidistantly spaced on 7 3/8-in. bolt circle, and are approximately 6 in. high from bottom of lower flange to top of center pin. Center pin is 3/8-in. diam., with 16 threads per in. at the ends.

Type A has studs 2 7/16-in. long and 8 1/2-in. center pin.

Type B has studs 1 7/16-in. long, 11 1/2-in. center pin and in the bottom flange three equidistantly spaced countersunk 11/32-in. holes on 7 7/8-in. center circle.

Type C is like Type A except that two 3/8-in. jamb nuts for the center pin and two 1/2-in. nuts for each stud are furnished and the center pin is 11 1/2-in. long.

Made in Corning, New York, U.S.A. by Corning Glass Works

PYREX

The world's largest manufacturer of Technical Glassware

Bud Transposition Blocks

Made from high grade grey ceramic and impregnated against absorption. Size 2⅛" x 2⅝". For use on 1½" spaced transmission line. Packed 10 to box.

Cat. No.	List Price	Your Cost
953	$.15	$.09 ea.

"Bud Log Book", 1938, pg. 46

Old Familiar Strains 2016 PDF edition scanned from originals in the OFS archives.