

HUES OF HISTORY



THE STORY OF THE COLORFUL CD 565.1



The story of the 565.1 is also a story of geopolitics, and really begins with the creation of an independent Second Polish Republic after World War I. The new country prioritized rebuilding its industrial might, and glass-making was an obvious fit. The area had numerous glasshouses before the war, and retained extensive glass-making knowledge as well as an extensive supply of high-purity silica sands and fuel for furnaces – wood, soft coal, and later natural gas.

With both the greater WWI conflict and the Polish-Soviet War resolved by 1921, Poland set to rebuilding its national infrastructure. A critical part of that was telecommunications and railways.

Poland is unusual for the region in that it used a large number of glass insulators. Its neighbors – notably Germany and Austria, and to a lesser extent Russia – much preferred porcelain for its technical superiority. From the November 1933 issue of *Wiadomości Teletechniczne* (a Polish technical journal that translates as "Telecommunications News"), page 129:

Glass insulators are used for economic reasons, as they are more than twice as inexpensive as porcelain ones. In addition to their low cost, glass insulators offer another advantage over porcelain ones: telecommunication lines constructed using glass insulators are less conspicuous—a factor of significance from a military standpoint. Porcelain insulators are particularly prominent in aerial photographs; conversely, glass insulators—being greenish in color—blend into the background and are almost invisible. Furthermore, glass insulators are less likely to catch the eye of boys amusing themselves by throwing stones; moreover, because they are transparent, insects do not build their nests inside them—something they are prone to doing within the dark interiors of porcelain insulators.

Glass insulators are becoming increasingly widespread, partly due to the fact that all the raw materials used to manufacture glass are found domestically, whereas the raw materials used for the production of porcelain must be imported from abroad.



The Polish Postal Administration currently utilizes glass insulators as its standard choice for construction purposes; porcelain insulators are employed only on junction, testing, and corner poles—as well as in any other locations where greater mechanical strength or enhanced line insulation is required.

THE FIRST STANDARD POLISH TELECOMMUNICATIONS DESIGNS

The Ministerstwo Poczt i Telegrafów (Poland's Ministry of Post and Telegraphs, or MPiT) was founded on February 5, 1919. It was responsible for unifying and managing the country's postal, telegraph, and telephone networks across the newly founded country. Initially their work focused on the country's areas that were occupied by the Austrians and Germans during WWI.¹ When the Treaty of Riga was signed in 1921 to end the Polish-Bolshevik war, it gave Poland much of western Belarus from the Soviet Union. With the massive expansion in territory in which to rebuild communications networks, MPiT's need for materials expanded commensurately.

Partly as a result of the expansion, in 1922 MPiT issued tenders for producing large numbers of telecommunications insulators. These would be of three standardized designs established by MPiT, which in concept would continue throughout the 18 years that the Second Polish Republic would exist:

- Type 1 - The largest, and "are used on intercity lines; copper conductors with a diameter of 4 to 5 mm and steel conductors with a diameter of 2 to 6 mm are attached to them."
- Type 2 - Medium-sized, and "are used on pole-mounted lines and subscriber lines in Zone II; copper wires with a diameter of 2 to 4 mm and steel wires with a diameter of 2 and 3 mm are attached to them."
- Type 3 - The smallest of the three, and "are used on feeder lines leading to offices and on subscriber lines in Zone I; copper wires with diameters of 1.5 mm and 1.2 mm are attached to them."²

The first iteration of these designs would be what we now refer to as the CD 578.1 (type 1), the CD 566.1 (type 2), and the CD 566.5 (type 3), as we will find out from later articles.



A contract for a million of these glass insulators was issued to Stolle's Niemen glassworks.³ Contracts were clearly also let to other glass houses as well, as the hobby has examples of these same designs from Vitrum Wołomin, Falenica, and Huta Szklana Jabłonna, as well as J. Stolle.

PNT-400 AND PNT-404: THE SECOND STANDARD POLISH TELECOMMUNICATIONS DESIGNS

What we now know as the 565.1 starts in mid-1928, with a call for insulator standardization for glass and porcelain communication insulators across not only MPiT, but all insulator-using segments of the Polish economy. Engineer Kazimierz Kłyż stated the following in an April 1928 article:

Anyone who deals with telecommunications line insulators has undoubtedly noticed that Polish networks feature insulators of the most diverse shapes, dimensions, and electrical and mechanical properties. This state of affairs creates significant difficulties during the construction and maintenance of these lines. To confirm the above, one need only look into the technical storehouses of the Ministry of Posts and Telegraphs, the communications depots of the Ministry of Military Affairs, and others; there, one will find dozens of insulator variants—dozens of distinct entries in the materials ledgers, each with dozens of subcategories. Add to this the several—and sometimes even dozens—of variants of mounting pins, which are occasionally difficult to match to a specific insulator, and the full scope of the difficulties encountered becomes starkly apparent. (...) As the ultimate result of this state of affairs, we have many lines where communication is hindered due to faulty insulators, and maintenance is troublesome and costly.

There can be only one answer, namely: it is necessary to establish a few essential types of insulators that meet the required specifications and are binding upon all parties.⁴

Kłyż went on to describe this new standardized insulator, including a drawing of its general design as Fig. 1, which is reproduced here.

A telecommunication insulator (Fig. 1) is bell-shaped, featuring two skirts—an outer and an inner one—and is topped with a head. The head of a standard insulator is not finished flat— as



was the case with older insulators—but rather spherically. This head shape prevents snow from accumulating on the insulator's crown, thereby preventing a degradation of its insulating properties during winter. The interior of the insulator is threaded; The threading allows the insulator to be screwed onto a hook (or pin) wrapped with oil-saturated packing material. Viewed in cross-section, the insulator features a groove located laterally—between the outer skirt and the head—which facilitates the side-tying of the conductor to the insulator. The upper attachment of the conductor is facilitated by a groove that divides the crown into two sections; to ensure the conductor makes contact with the insulator over the smallest possible surface area—thereby enhancing the quality of the conductor's insulation—the upper groove in standard insulators is rounded, such that the attached conductor sits tangentially against this curvature. The shape of the insulator ensures effective insulation by providing a long leakage path for current flowing from the conductor, across the two skirts, to the hook (or pin). Furthermore, rainwater flows exclusively down the outer skirt of the insulator, leaving the inner skirt and the entire interior completely dry. A stationary layer of air trapped within the recess between the insulator's skirts inhibits the ingress of fog—which would otherwise degrade the insulating properties—into the insulator's interior.

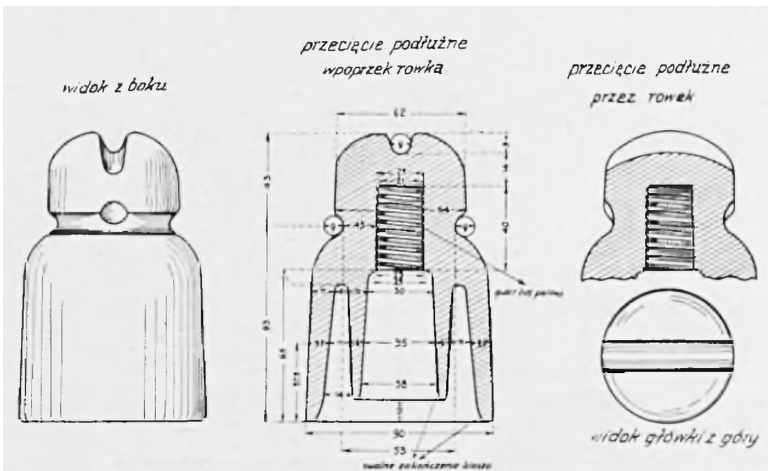


FIG. 1 DRAWING OF KAZIMIERZ KŁYŻ'S PROPOSED STANDARDIZED INSULATORS FROM PRZEGLĄD TELETECHNICZNY, APRIL 1928, PP. 30-31

Kłyż proposed standard telecommunications insulators would go on to become two national standards, known as Polskimi Normami Technicznymi or PNT ("Polish Technical Standard"). The standard for glass insulators (izolatory szklane) was officially ratified as PNT-400 by July 1931. PNT-404, which covered porcelain insulators (izolatory porcelanowe), was ratified somewhat later due to some nagging debates about glazed vs. unglazed bases.^{5,6}



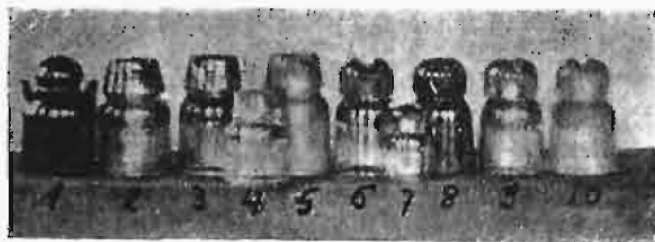
PNT-400 standardized insulator designs in Poland into what we as collectors now call CD 565.1 (type 3), CD 578.7 (type 2), and CD 579 (type 1). However, MPiT had already made this their standard several years earlier. When the standard was being discussed in 1930, one article notes, "As for the glass insulator, the design adopted as the basis for the standard is a type that has already been in use for several years by the Ministry of Posts and Telegraphs." Thus the CD

565.1/578.7/579 seems have to gone into production possibly around 1928.⁷ Versions marked with the PNT circle logo, however, were likely produced after the specification was ratified, or at least very close.

THE THREE SIZES OF GLASS INSULATORS
FROM THE PNT-400 SPECIFICATION



Further proof of the 565.1/578.7/579 being the standard successors to the 566.5/566.1/578.1 comes from an article titled "Badanie izolatorów linjowych niskiego napięcia" (Testing of Low Voltage Line Insulators) in *Przegląd Elektrotechniczny* back in September 1934. I've included a small picture from page 298, showing the insulators being tested.



Rys. 7.
Wzory badanych izolatorów:

1. Francuski P. T. T.
2. i 4. Stary typ teletechniczny Nr. 1 i Nr. 3, szkło białe
3. jak 2, szkło półbiałe,
5. jak 3 lecz matowany.
6. i 7. Nowy typ N. I. T. 1 i 3, szkło półbiałe,
8. jak 6, szkło brudne,
9. jak 6, szkło alkaliczne,
10. jak 9, lecz matowy.

When the caption is translated (and CD numbers added), it reads:

- 1 – French P.T.T. (a CD 642 gingerbread man)
- 2 & 4 – Old telecommunications type 1 and 3, clear glass (CD 578.1 and 566.5)
- 3 – Same as 2, but semi-clear glass (CD 578.1)
- 5 – Same as 3, but frosted (CD 578.1)
- 6 & 7 – New type 1 and 3, semi-clear glass (CD 579 & 565.1)
- 8 – Same as 6, dirty glass
- 9 – Same as 6, alkaline glass
- 10 – Same as 9, but frosted.

Frosted, in this case, means that the insulator was frosted in a hydrofluoric acid bath to etch the surface, in order to simulate the aging effects of alkaline soda-lime glass. The article also notes that several special samples were manufactured by the J. Stolle Niemen glassworks using improperly refined glass or glass of a special faulty alkaline composition, to artificially induce what collectors today would call "glass sickness."

Note that the 578.1 and 566.5 are specifically referred to as the "old type" and 579 and 565.1 as the "new type."⁸

The standard was fairly rigorous, allowing little deviation between manufacturers. While I haven't found an actual copy of PNT-400 yet, drafts of the porcelain insulator specification indicate that insulator dimensions state the following: "The dimensions of an insulator may differ from the dimensions indicated in the drawing within a tolerance of $\pm 5\%$, with the exception of the outer skirt diameter, where a deviation within the limits of $+8\%$ is permitted."

In addition, PNT-400 also imposed a glass color specification. Clear was originally desired, but based on consultation with the glass manufacturers, it was decided that it was too hard to achieve economically. Thus, "insulators must be high quality glass exhibiting a "blue-green coloration" or clear and that their color must correspond to the color of the master sample kept at the Ministry of Posts and Telegraphs." In addition, physical quality was explicitly called out: "Cracks, blisters, and defects are impermissible; only minor bubbles are permitted, provided they occur in small quantities. The surface of the insulator must be completely smooth, and it must not become rough due to atmospheric influences. The insulator's thread should be smooth and of correct form."⁹

This standardization effort also explains markings often found on Polish insulators. Since they do show up on only very few of the first standardized types, my assumption is that this NIT-1-S nomenclature was likely introduced near the changeover between the early standard glass types (578.1/566.1/566.5) and the second standardized glass types (579/578.7/565.1).

NIT-1-S

NIT - Normalny Izolator Teletechniczny
(standard communications insulator)

1 or 2 or 3

Type 1 - CD 578.1 1922-1928, 579 1928-1939, or U-1735
Type 2 - CD 566.1 1922-1928, CD 578.7 1928-1939, or U-1710
Type 3 - CD 566.5 1922-1928, CD 565.1 1928-1939, or U-1654

S or P - Szkłane (glass) or Porcelanowe (porcelain)

Note: The glass or porcelain indicator seems to have been added later, as it does not appear on units of the first standardized types, but only on PNT-400 style insulators



THE J. STOLLE - NIEMEN FACTORY WHERE MANY 565.1 INSULATORS WERE MADE. NO, I CAN'T TELL WHAT KIND ARE ON THE POLE TO THE LEFT.

PHOTO CREDIT: ZBIERACZSTAROCI.PL

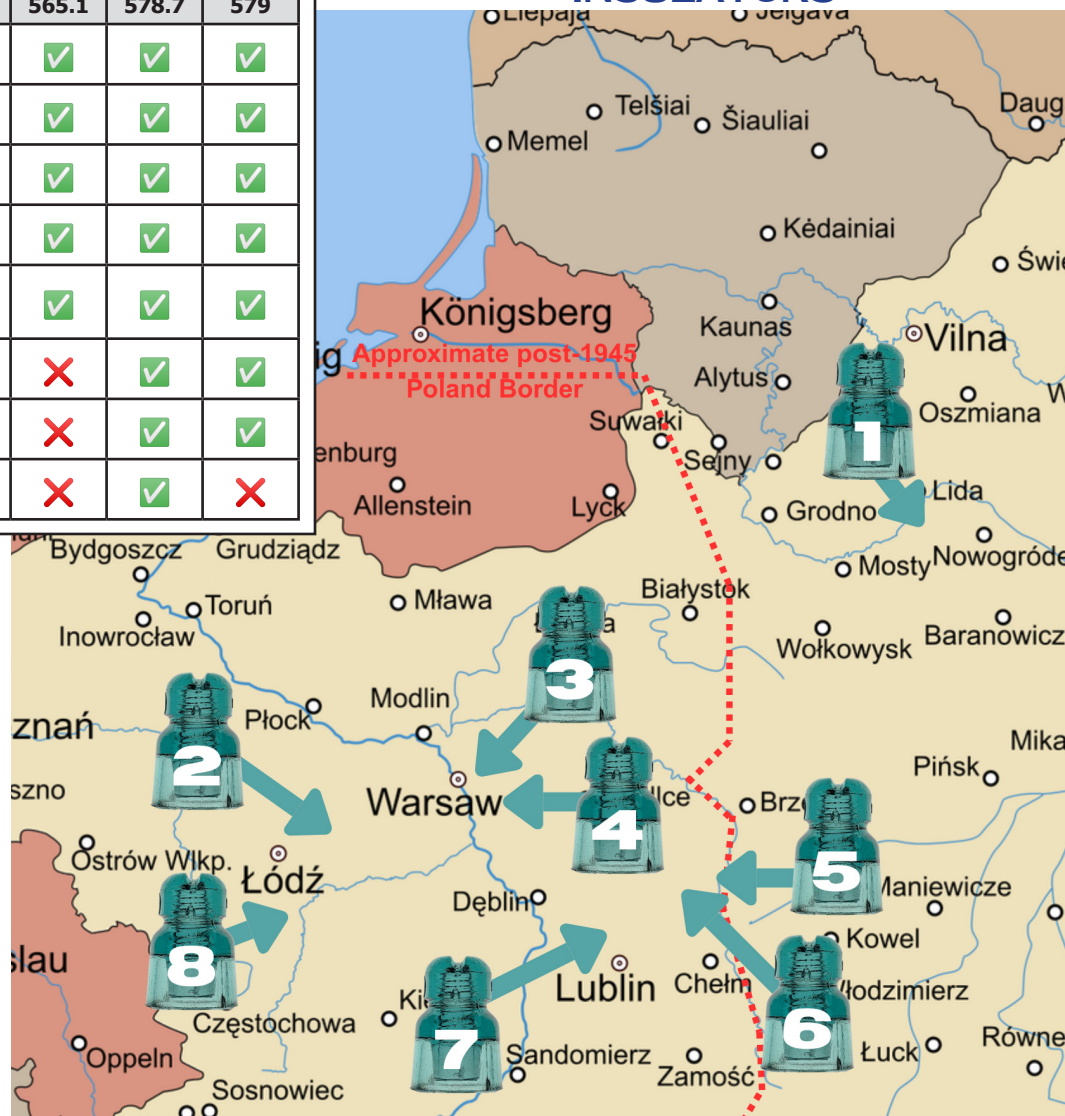


Manufacturer	CDs Known to Exist		
	Type 3 565.1	Type 2 578.7	Type 1 579
1 - J. Stolle - Niemen	✓	✓	✓
2 - Huta Rogow (circle R, circle ROGOW)	✓	✓	✓
3 - Vitrum Wołomin (V.W.)	✓	✓	✓
4 - Falenica	✓	✓	✓
5 - Huta Robotnicza Nadbużanka (H.R.N. or H.N.)	✓	✓	✓
6 - Huta Dubeczno (Dubeczno)	✗	✓	✓
7 - Huta Lubartów (HL)	✗	✓	✓
8 - Huta Hortensja	✗	✓	✗

Thus, given the rigid standards of PNT-400, it would be expected that any CD 565.1s manufactured in Poland (~1928-1939) to be of high quality, and very consistent across years and manufacturers in terms of markings and colors. It is unlikely any particularly colorful 565.1s date from this era.

Eight individual glass factories are known by collectors to have made PNT-400 style insulators in any of the three sizes. ("huta" or "guta" is the Polish word for factories that have big furnaces, which often confusingly and hilariously mis-translates as "steel-works" without context.) Those eight are shown on the map to the right. Of those, collectors have found examples of the CD 565.1 from five of them - Stolle, Rogow, Vitrum Wołomin Falenica, and Huta Robotnicza Nadbużanka. It is reasonable to think that Dubeczno, Lubartów and Hortensja may have also made 565.1s, but so far, none have surfaced.

POLISH GLASS HOUSES THAT MADE PNT-400 STYLE INSULATORS



VITRUM WOŁOMIN
(CROWN)

V.W.



HUTA FALENICA
(CROWN)

HUTA FALINICA



HUTA ROBOTNICZA
NADBUŻANKA
(CROWN) **H.R.N.**



J. STOLLE NIEMAN
(CROWN)
FRONT



ROGOW



(VITRUM WOŁOMIN AND FALENICA EXAMPLES
COURTESY NIA WEBSITE & BOB BERRY)



AN EARLY EXAMPLE
WITH ONLY J. STOLLE
NIEMAN EMBOSING IS
KNOWN AS WELL

THE SOVIET ERA

If it wasn't for the Soviets, the story of the 565.1 would likely be relatively dull. It would be a blue-aqua or clear telecommunications insulator produced for about twelve years, with a small array of collectible embossings. What it would definitely not be is the rainbow of weird colors and shapes that make it hugely collectible today.

J. Stolle had produced a huge number of colorful domestic glass items before WWII. Their 1911 catalog showed over 1800 items, such as dishware, vases, bowls, lamps, and art glass, available in an array of beautiful colors. So it's not like they only made boring industrial glass. However, the plant made insulators for the Russian army in 1914, and they were all boring aqua. The PNT-400-style insulators closely adhered to the colors set forth in the standard. (Author's note: The CD 599 and 609 are a baffling mystery. Amber, purple, and bright blue examples exist with early J. STOLLE "NIEMEN" embossing indicating they were made in the late 1920s, instead of the later J/S/N circle and lightning bolt logo from the 1930s.)

The Byelorussian Soviet Socialist Republic (BSSR) actually took possession and nationalized the plant after the Russian invasion. This lasted from the invasion in September 1939 until the plant was captured by the advancing Third Reich in the summer of 1941. It was subsequently destroyed in 1943 by Soviet partisans to deny it to the Germans. It's unknown if insulators were made in this period, or what they would be. It's unlikely the Germans would have been interested given their preference for porcelain, so any production would likely have been in late 1939 - early 1941.¹⁰

After the Germans had been repelled and it was back in control of the BSSR, the plant was rebuilt in 1944 to supply essential industrial glass products to the Soviet Union, such as window glass and lamps. Shortly thereafter, dishware and art glass production resumed, and in 1946, the Soviets established a school at the works to train glass workers and glass artists. Throughout the 1950s and 1960s, the Soviets concentrated glass artists and craftsmen at the plant, and art glass from Heman became known throughout the world.

What we can say with reasonable certainty is that the old J. Stolle 565.1 molds were reworked and production continued after the war. The original J/S/N 565.1 mold was reworked to have the letters C/3/H instead. This stands for **СТЕКЛОБЫЙ ЗАВОД НЕМАН**, or "Glass Plant Neman". (*That's not a "3" - it's the Cyrillic letter Ze, roughly pronounced as the z in Zulu.*) Using examples that match up well to the pre-war J/S/N units, several display similar mold nuances on the dome and skirt.

However, the C/3/H-marked 565.1s range from those that closely match the pre-WW2 JSN mold, to fairly crude examples. I think this shows a timeline. The quality examples that match up well have a similar skirt profile, a crisp notch shape, generally very tight mold lines with little flashing, and a nearly legible C/3/H mark. Lower quality units have a more flared skirt, sloppy mold lines with lots of flash (glass leakage), a more rounded and muted notch, and a barely legible mark. I believe show the molds aging and wearing, probably repaired/reworked as they're pushed far beyond their lifespan by the Soviets. I've included three examples above showing the

Niemen, Neman, or Неман?

Part of the problem in writing this article is figuring out which spelling and alphabet to use for the names of various persons, companies, and places.

This region is a mix of cultures and languages, and because of that, there are generally ways to spell things in Polish, Russian, Lithuanian, and usually a couple more.

The Nieman is actually the name of a river that flows through the region where Juliusz Stolle and Wilhelm Krajewski built their glass plants. The river arises south of Minsk, and flow out to the Baltic Sea through Lithuania. Depending on who you're asking, that might be **Неман** in Russian Cyrillic, **Neman** in romanized Russian, **Nieman** in Polish, or **Nemunas** in Lithuanian. It's all the same, spelled differently.

In general, I've tried to spell things based on the political power at the time. So it's **Nieman** when I'm talking about Polish-made pieces, and **Неман** once it was under control the Byelorussian Soviet Socialist Republic or Soviet Union.



POLISH 1928-1939
J. STOLLE NIEMAN



BSSR (EARLY PRODUCTION?)
Heman



BSSR (LATE PRODUCTION?)
Heman



progression from a Polish piece on the left to one of the poor examples of a Heman on the right.

However, this just accounts for one of the five major variants of 565.1 - what we'll later call Variant 3 in the collector era. (Read on for details about all the variants.) It's the only one where we absolutely, positively know the lineage and can prove it's a Heman product. What about the others? The others have no embossing that helps us identify the manufacturer.

I think there is some evidence that two more major styles - which we'll later call Variants 1 & 2 - were also made by Heman. We know that Heman made both variants of the CD 569.2, because they're marked. The crown styles on CD 565.1 Variants 1 & 2 match reasonably well with the two styles of 569.2. Despite the crazy array colors, the glass quality and molding on these is quite good. The crown and dome style is extremely similar to the flat Heman 569.2 and the embossing style of mold numbers on the crown is similar, which leads me to believe these are possibly one of the last styles of 565.1 made by Heman before it was replaced - likely by the 569.2, and likely around 1967, since that's the date on the dome of the 569.2.





"BACKWARDS 4" EMBOSSED
VARIANT 1 CD 565.1



HEMAH CD 569.2
SHORT DOME



HEMAH CD 569.2
TALL DOME



UNMARKED VARIANT 2
CD 565.1

You can decide for yourself, based on the pictures above. I've shown both variant 1 and 2, as well as what I believe are likely their CD 569.2 counterpart. It's not conclusive proof, but I think it's reasonable to continue the hobby's assumption that these are likely *Неман* products.

So what about the rest? Variants 4 & 5? They're almost certainly Soviet production somewhere. They were found in similar parts of Belarus and Ukraine. They come in all sorts of wacky colors. In fact, I'd say they're even more out there than any of the rest.

Some have attributed them to *Неман* and I think it's definitely possible. However, the molds are just very different from the ones that I know or suspect are *Неман*. They have straight sides, large crude domes, and are very stout in the "shoulders" below the wire groove. Could they have been a re-machining of the variant 3 molds once they really wore out? That's a possibility, given their outer profile is marginally larger.

Maybe someday we'll find the records in Belarus to conclusively say one way or the other.

THOSE COLORFUL SOVIETS

Generally, when we think of the Soviet Union, we don't think colorful. Part of that is the way the West portrayed it (a lovely aesthetic I like to call "totalitarian chic"), but in a planned Communist economy definitely valued function over form with little room for individuality.

However, remember that the Soviets placed a high value on international prestige and the arts. Post-war *Неман* was set up as a school for glass artists to flourish as well as to make colorful glassware for home and export, and doubtless there was an amazing amount of colorful extra glass and cullet left over. If you're making insulators and you don't have a specification to meet, do you really care what color glass you use?

Among the Belarus-made pieces, there are a nearly endless rainbow of colors. There are some that are far more common than others, however. By far, the least common color is any sort of amber. Lots of pieces contain amber swirls, but very, very few true ambers are known. Behind that is likely perfect clear. Greens are uncommon. Cobalts and purples are by far the most common.

By far the strangest is the bizarre white glass-ceramic that is also found in the CD 247.5 and 541.5. The appearance and texture of the material is not that of normal milk glass. I suspect it's a magnesium aluminosilicate glass ceramic. The interesting part is that the power insulators made from this material (CD 247.5 and CD 541.5) bear dates from the mid-1960s. If we assume the 565.1s were made during similar years, that might date variant 5.

USAGE

The original Polish PNT-400 was designed for low voltage work, and found applications on both telephone lines and on house-voltage utility drops (240V or similar). Many were recovered from scrapped telephone circuits, but many were also found on hooks and brackets

THE COLLECTOR ERA

Marilyn Albers originally announced the original assignment of CD 565.1 in her "Foreign Insulators" column, published in the December 1994 issue of *Crown Jewels of the Wire*. This assignment was to the original 1920s-era Polish type 3 insulator – what today we would call a CD 566.5.¹¹

Around 2000, thanks to the growth of the web and creation of sites like eBay, a couple sellers from Belarus, Ukraine, and Poland discovered the US insulator collector market. The first cobalt pieces that came out often had damage and went for big money – one of the early cobalt 565.1s in 2002 went for \$860.¹² That proved to the sellers that there was good money to be made, opening the floodgates to a huge variety of colorful glass from the former Eastern Bloc that was previously unknown to the hobby. Obviously as more were discovered, the price on the cobalts collapsed. Only about 6 years later, lots of 3 were selling for \$40, with \$30 in shipping.¹³

Five general variants of these new arrivals were initially lumped in with the 565.1. However, the original 565.1 remained scarce and was notably and distinctively different. Because most collectors were far more familiar with the styles coming off eBay, the original 565.1 was broken out to its own CD, the new 566.5. It became the 566.5 somewhere around 2008-2009.¹⁴

THE FIVE VARIANTS

Rudy Gargioni made the first effort to identify the variations of 565.1s in his June 2011 *Crown Jewels of the Wire* article, "From Belarus with Borscht: Mold Variations of the Neman Glassworks' Most Colorful Insulators". Similar to how EC&M insulators are categorized by mold letters, Rudy applied the same approach to 565.1 variants. He identified ten discrete mold styles, which he labeled A-J. He broke out each individual embossing as a different mold, which is great for analysis

Today, the NIA Worldwide Glass insulator identification guides breaks the CD 565.1 up into five variations.¹⁵ Variation 1 encompasses mold letters A-E. Variation 2 is mold letter I. Variation 3 is mold letter J.

Variation 4 consists of molds G and H, and variation 5 is mold letter F.

The next page shows all five variants, as well as Rudy's subtypes, and examples of each from my collection.



VARIANT 1

Variation 1 comes in several different embossings, all marked on the side of the crown. Gargioni breaks them down into five different distinct sub-types, mold letters A-E. In general, despite the crazy array colors, the glass quality and molding on these is quite good. The crown and dome style is extremely similar to the flat *Неман* 569.2 and the embossing style is similar, which leads the author to believe these may be one of the last styles *Неман* made before retiring the CD 565.1.



(CROWN) ①

VARIANT 1 - MOLD A



(CROWN) II

VARIANT 1 - MOLD B



(CROWN) III

VARIANT 1 - MOLD C



(CROWN) 3

VARIANT 1 - MOLD D



(CROWN) +

VARIANT 1 - MOLD E

VARIANT 2

Variant 2 is uncommon. It's very similar to Variant 1, but has a taller, more pointed crown and dome. They mostly occur in shades of purple ranging from burgundy to grape, with some cobalt examples known. All are unembossed.



(UNEMBOSSSED)

VARIANT 2 - MOLD I



(CROWN) ①

VARIANT 3 - MOLD J



(CROWN) ②

VARIANT 3 - MOLD K



(UNEMBOSSSED)

VARIANT 4 - MOLD G



(CROWN) ✦

VARIANT 4 - MOLD H

VARIANT 3

Variant 3 encompasses all original Polish PNT-400 type 3 pieces that were made by variety of manufacturers with embossings that were covered previously. It also encompasses the pieces made after the Soviets resumed production at *Неман* in 1944, and reworked the J/S/N logo to be C/3/H. C/3/H pieces can match the original Polish mold quite closely with a legible logo, or be more flared on the skirt with significant mold seams and a less defined notch.

VARIANT 4

Variant 4 has a crown and dome resemble a Variant 3, but the skirt is a straight taper and the shoulder below the wire groove is much stouter. Surface finish and general molding quality is generally quite crude. These come in two embossing variants – unembossed and with a small four-pointed star on the crown side – and some truly wild colors. There's no conclusive evidence as to who made these, though they come out of similar regions around Belarus and Ukraine as others.

VARIANT 5

Variant 5 is the “chunkiest” of the 565.1 variants. It has a large crude top with lots of dome glass and often has slumped off to one side during cooling. Like Variant 4, the sides of the skirt are a straight taper (though usually more vertical than a Variant 4). All are unembossed. Quality ranges from reasonably good to quite crude in terms of surface, shape, and flash.

These are also the only examples that come in the strange pseudo-milkglass that is also found in CD 247.5 and 541.5. Based on color and texture, I suspect it's a magnesium aluminosilicate glass ceramic designed for high thermal shock resistance.

They're similar to Variant 4 in terms of general crudeness and glass surface finish, so they may have a common manufacturer.



(UNEMBOSSSED)

VARIANT 5 - MOLD F



(UNEMBOSSSED)

VARIANT 5 - MOLD G



(UNEMBOSSSED)

VARIANT 5 - MOLD H

AUTHENTICITY

Every since these first showed up on eBay in 1999, there have been lingering questions about authenticity. Certainly it's a reasonable thing to ask. These come in a bewildering array of weird colors that are only achievable by blending specific additives into the glass batch, for which there is no technical reason to do so. So, are they real?

In my opinion, there's no doubt that they're authentic pieces. There are photos of them in service. Multiple different individuals have retrieved them and sold them. They're not all of a single style, and many examples have been recovered secured to weathered pins, sometimes with wire intact. The glass is generally of usable quality, if colorful. They show an evolution of designs from the original Polish units to what I think are the successors – such as the 569.2. Also, we know that at least some were made by a company (J. Stolle Neimen or Нема́н, depending on era) whose other primary business was making domestic glassware – lamps, tableware, vases, bowls, etc. - in a huge variety of colors, and later evolved into the Soviet Union's premiere hub for art glass manufacturing. It seems plausible that leftover glass from other products would have been used in insulator manufacture.



A PHOTO OF COBALTS AND AQUAS ON AN ABANDONED POLE. BOB SCAFE POSTED THIS TO ICON MANY YEARS AGO.

Paul Greaves, who was the NIA Authentication & Classification chair at the time (and still is), offered a similar opinion based on similar arguments in the Winter 2009 issue of *Drip Points*.

Is there a chance that somebody found an old mold and started pouring crazy colors into it? Sure, there's a chance. I can't disprove that. At this point I also haven't seen any evidence of it. What I have seen is quite a few different individuals coming up with an occasional oddball color on top of the usual aquas, purples and cobalts.

To me, the scales are tipped in the direction of authentic insulators produced under unique circumstances, giving us collectors a rainbow to choose from.



DESPITE BEING ORIGINALLY CREATED AS A "TELECOMMUNICATIONS INSULATOR", THE 565.1 FOUND ANOTHER LIFE IN LOW VOLTAGE SERVICE.

MANY PICTURES EXIST OF THEM BEING USED ON POWER DROPS TO BUILDINGS. THESE THREE PURPLE VARIANT 1S ARE SEEN ON THE SIDE OF A BUILDING IN BELARUS. THEY ARE NOW IN MY EXHIBIT.

PHOTO IS FROM ONE OF THE ALEXANDERS, COURTESY DAN WAGNER



CROSSARMS FULL OF COBALT 565.1S REMOVED FROM TELEPHONE SERVICE. PHOTOS FROM ALEXANDER BULBA AT USSRINSULATORS.COM



A BRIEF HISTORY OF THE J. STOLLE NIEMEN GLASS WORKS

No history of the 565.1 is complete without a short history of the Stolle Niemen glass works. Unfortunately, primary sources about the company accessible from the US are limited, so the history below is assembled from a variety of secondary sources.

The original company was created in 1883 by Zenon Łęski to make bottles. It was located near Nowogródek. By 1885, the plant was booming, employing 16 men, 6 women, and 6 children. At this point, the area is part of the Russian empire.

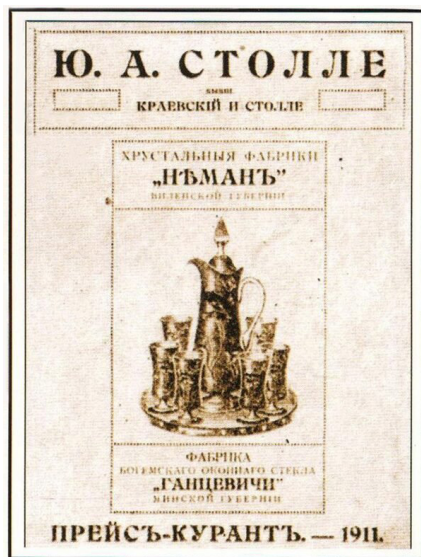
In 1891, Łęski decided to retire from actively running the plant, and puts out an offer to lease it to new operators. This is where our main character, Juliusz Stolle, enters the story. Juliusz came from a Czech glassmaking family, had been working in Russia for industrialist Sergei Ivanovich Maltsov at the Dyatkovo glass plant. (Sergei was the uncle of Yury Nechaev-Maltsov, whose factories produced CD 547, CD 579.3 and CD 579.5 with embossings like H.M. and E.ГОЛЧЕВЪ.) Juliusz met Wilhelm Krajewski, who was serving as the chief engineer at the works. The two decided to become glass entrepreneurs, and put in a successful bid to lease Łęski's plant under the name "Stolle & Krajewski." The pair modernize the old plant, installing a new furnace and other improvements. The plant expands its line to produce domestic crystal and glassware, such as tableware, vases, cups and saucers, bowls, etc.

Business is so good that in 1895, the two build the Nowa Huta ("new factory") about four kilometers from the original plant. The new plant – Neman B - was constructed at Byarozawka/Berezovka, near the Nemunas/Nieman river. The old plant becomes Neman A.

Around 1900, Łęski finds himself in need of funds. He lets the partnership buy out the old plant, which is eventually demolished. Neman B is renamed to Neman A, and the company also acquired a third glassworks. Everything is converted to natural gas.

Tragically, Krajewski died in 1905, drowning in the Nieman River. His widow, Casimir, sold her stake in the business to Juliusz Stolle. Two of Juliusz's sons - Felix and Bronislav - marry the daughters of the late William, Stanislaw and Janina, thus preserving family ties.

In 1910 alone, the plants and their 1050 employees produce 1.2 million pieces of glass, including 400,000 glass lamps and six thousand boxes of window panes. The 1911 catalog shows nearly two thousand items for sale, ranging from mundane dishware to lamps and beautiful vases. "The objects were designed in the Art Nouveau style and could compete with Bohemian glass in the brightness of color and originality of shapes," states one Russian antiques website. A whole company town sprung up around the works. Stolle invested



A 1911 NIEMEN CATALOG, IN RUSSIAN
SINCE THE PLANT IS STILL WITHIN
THE RUSSIAN EMPIRE



(ABOVE) WILHELM KRAJEWSKI
(LEFT) JULIUSZ STOLLE AND WIFE
JOSEFA

heavily in the town and his workers, setting up a hospital, schools, and even a special school dedicated to glassmaking, which attracted top talent from all over.

The first mention of insulators in the company history is in 1914, when they received a contract from the Russian army to produce insulators. This new business helps offset some of the lost business due to World War I beginning. These are likely Russian-style pieces like CD 547, 579.5, and possibly the 571. Most bear the HEMAHB markings, except the 571 and and a rare few 579.5 that have J. STOLLE „NIEMEN” embossing.

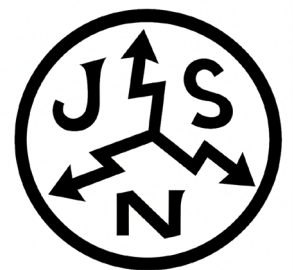
This only last a bit over a year, however. The front line for conflict between the Russians and Germans pushes through the area, and the Russians destroy the glassworks as part of their retreat. Much of the equipment, however, is moved off-site and saved.

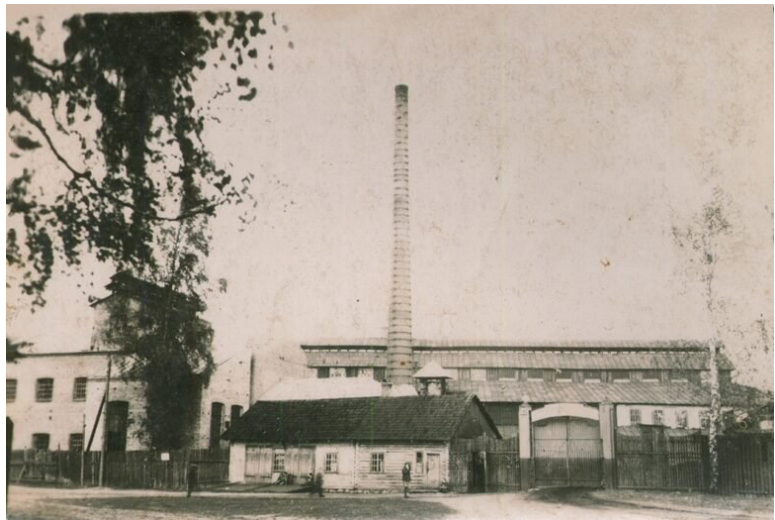


AN EARLY NIEMEN INSULATOR
PRODUCED TO A RUSSIAN DESIGN,
PROBABLY PART OF THE 1914
ORDER. CD 579.5 HEMAHB

After the signing of the Treaty of Riga in 1921, granting the newly-founded Polish Second Republic rights to most of western Belarus, including the Berezovka region, Stolle rebuilt the factory. In 1922, the Ministerstwo Poczt i Telegrafów (Poland's Ministry of Post and Telegraphs, or MPiT) granted the company a contract to produce a million insulators for rebuilding the country's communications network. Also in 1922, Stolle brings on his two sons as partners and the business becomes J. Stolle & Sons. Unfortunately, Juliusz passes away the next year.

The plant continued making insulators of various types (including the 565.1 after 1928 or so) for the next 18 years. Pieces are marked J. STOLLE „NIEMEN” until about 1929 or so, when the circle J/S/N mark appears. Some pieces, like the CD 599, have an overlap period with both markings.





THE MAIN NEMAN PLANT, PROBABLY IN THE 1920S

Production continued solidly, even through the depression years of the 1930s. However, in September 1939, Poland was invaded by two bordering powers - Germany from the west and the Soviets from the east. The two had made a secret non-aggression pact, known as the Molotov-Ribbentrop Pact, to invade and divide Poland and other eastern European countries. The Soviet occupation encompassing the Berezovka area and the glassworks. The plant was nationalized, and Felix and Bronislav sent off to Stalin's gulags, where Felix is confirmed to have died within two years, and Bronislav just disappears.

The non-aggression pact between the two invading powers failed in 1941, with Germany mounting an eastward offensive and capturing the area. Since the Germans were using the plant for making industrial glass products, such as windows, Soviet agents sabotaged the plant and burned it again in 1943.

The Germans were repelled in late 1944, and the area once again became part of the Byelorussian Soviet Socialist Republic. The plant was quickly rebuilt to supply essential industrial glass products to the Soviet Union, such as window glass and lamps. The next year, dishware and art glass production resumed, and in 1946, the Soviets established a school at the works to train glassworkers and glass artists. Throughout the 1950s and 1960s, the Soviets concentrated glass artists and craftsmen at the plant. Art glass from HEMAH became known throughout the world, being exhibited and winning awards at many international art shows. Those artisans also designed and manufactured day-to-day items, such as the plant's staples before the war - lamps,



SOME OF THE AMAZING GLASS PIECES THAT HEMAH MAKES - THESE ARE CALLED "THAW" (FROM THEIR FACEBOOK PICTURES). AND YOU WONDER WHERE THE CRAZY-COLORED CULLET COMES FROM...



THE MODERN PLANT, STILL IN THE SAME SPOT IN BEREZOVKA, SHOWING NEMAN / HEMAH ON THE ROOF (FROM GOOGLE MAPS)

vases, dishware, bowls, etc. - and exported it throughout the Soviet sphere of influence and even into the West. It was one of the products that the Soviets made that was competitive with Western products, and as such in demand everywhere.

It's during this period that we suspect the colorful 565.1s and 578.7s were made. All of that colorful art and domestic glassware would have doubtlessly created massive piles of cullet, and likely left-over glass. The plant also is known to have gone on to produce CD 569.2 insulators, likely after 1967 (since that's the date embossed on them) and on into the 1970s.

Belarus established its independence from the Soviet Union in August of 1991. The HEMAH plant was still a going concern, and started marketing their products worldwide. It's not known when insulator production ceased, but it's likely significantly prior to this date.

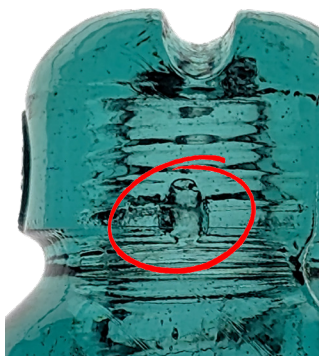
The HEMAH Glassworks went into bankruptcy in 2005. The plant employed two-thirds of the town's population and was considered a national treasure, and so the Belarus government stepped in to prop up the company with loans. The plant still manufactures handmade crystal, art glass, and domestic glassware, but also has launched into other industrial concerns such as manufacturing fiberglass insulation. Notably, it's still marked HEMAH on the roof.

HEMAH CREAMER AND VASE FROM MY COLLECTION. THE CREAMER HAS A SMALL „Hemah” EMBOSSED THAT LOOKS JUST LIKE THE CD 569.2.



THE "NIEMEN NOTCH"

Many Eastern European and Russian insulators have a notch located at the bottom of the crown, directly below the dome wire groove. Collectors gave it a nickname – the “Niemen Notch” - likely because it was a notable feature occurred on a large number of the Niemen pieces that first appeared in the hobby, when collectors were still struggling to try to categorize and understand these strange insulators, for which there was little background information.



The problem is that's a misleading misnomer. The notch really has nothing to do with J. Stolle or subsequent Niemen / Нема́н production. Many Niemen pieces do not have the notch, and many non-Niemen pieces do.

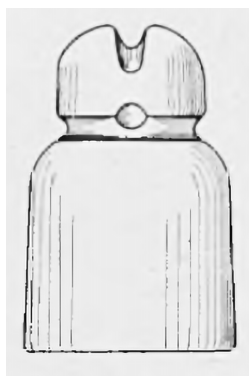
WHERE DID IT COME FROM?

The earliest instances of it seem to be on Russian pieces. We see it on CD 579.3 and 579.5 pieces from the E. Голубев (E. Golubev) and Мальцовское (Nechaev-Maltsov's glass factories near St. Petersburg, Russia) that were pre-1917. Also, early domestic Polish glass from J. Stolle - Niemen, such as CDs 566.5, 566.1, 571, and 578.1, does not have it.



AN EARLY RUSSIAN-TYPE HEMAHH CD 579.5 ON THE LEFT WITH NO NOTCH, AND TWO RUSSIANS - A Мальцовское CD 579.5 IN THE MIDDLE AND E. Голубев CD 579.3 ON THE RIGHT - BOTH WITH THE NOTCH

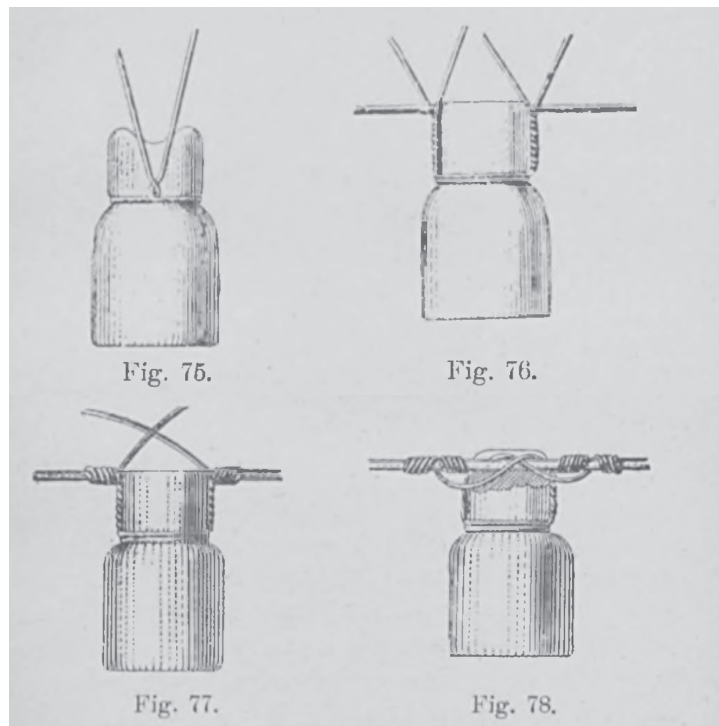
The 1931 Polish PNT-400 specifications include this feature. It seems like the feature was likely adopted from their eastern neighbors when the Polish came up with their new standard. Insulators produced to the PNT-400 standard (CDs 565.1, 578, 579) from other manufacturers in Poland possess the same feature, as do some porcelain samples such as the U-1654, U-1710, and U-1735 with PNT markings produced under the PNT-404 standard.



THE PNT-400 STANDARD DRAWING, SHOWING THE NOTCH

WHAT WAS IT FOR?

What was it for? That's still a matter of speculation, but I think we have some evidence. I found a post on a Russian forum dedicated to old electrical gear where the author stated that it was to run the tie-wires through before looping them around the neck, to prevent things from rotating. It seemed likely, but didn't actually rise to the level of evidence of actual use.



AN 1898 POLISH BOOK SHOWS A UNIQUE METHOD OF SECURING THE WIRE TO A TOP GROOVE

As I was doing research for this display, I found pictures in *Światło elektryczne : urządzenie i działanie instalacji prywatnych o prądzie stałym* (translated: “Electric Lighting: Design and Operation of Private Direct Current Installations”) published back in 1898. On pages 153-155, it showed a unique way of securing the conductor to the insulator.

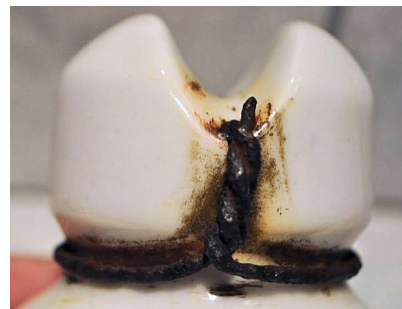
“Figures 75–78 illustrate the binding method. The conductor is laid upon the crown of the bell insulator, while the binding wire - cut in half - encircles the neck, as shown in Fig. 75; subsequently, it is twisted together on both sides in the manner depicted in Fig. 76; its two ends are then wrapped tightly around the conductor (Fig. 77), while two others—only after crossing (Fig. 78).

(...)

For thick cables, special insulators with deep grooves in their heads are used; in such cases, it is necessary to employ the first binding method.”

I then found an old picture showing exactly this method being employed, though the main conductor is long gone.

Does this answer the question of what the notch was for? Yes, I think we've now got some decent evidence this was to allow this unusual tie wire style without passing over a sharp ridge on the crown, creating a stress point that could damage the conductor or insulator.



Did Niemen pioneer it? In my opinion, it seems unlikely. There's evidence of it on insulators from other Russian manufacturers where the comparable Niemen model does not have it. It seems to me like a feature that was adopted by Niemen and other manufacturers from their neighbors as either a good idea or by engineers writing it into insulator standards.

SOURCES

- 1 "Ministerstwo Poczty i Telegrafów" Wikipedia (Polish). pl.wikipedia.org/wiki/Ministerstwo_Poczty_i_Telegraf%C3%B3w
- 2 Banaś, Paweł. *Glass Huta Niemen*, Muzeum Mazowieckie, 1984, as translated to German and republished in *Pressglas-Korrespondenz* PK2016-2, July 28, 2016, pp 9-11.
- 3 "Izolatory Teletechniczne." *Wiadomości Teletechniczne*, November 1933, Issue 11, pp. 128-130
- 4 Kazimierz, Klyz. "Normy na izolatory teletechniczne porcelanowe." *Przegląd Teletechniczny*, April 1928, pp. 30-31
- 5 "Sprawozdanie z działalności Rady Teletechnicznej za okres od dnia 1 kwietnia 1930 r. do dnia 31 marca 1931 r." *Przegląd Teletechniczny*, July 1931, pp 229-235
- 6 "Izolatory Teletechniczne. Izolatory szklane." *Wiadomości Teletechniczne*, Dec. 1934, Issue 12, pp. 142-143
- 7 "Z Rady Teletechnicznej." *Przegląd Teletechniczny*, Feb 1930, p. 78
- 8 "Badanie izolatorów linjowych niskiego napięcia." *Przegląd Elektrotechniczny*, Sept. 1934, p. 298
- 9 "Izolatory Teletechniczne. Izolatory szklane." *Wiadomości Teletechniczne*, Dec. 1934, Issue 12, pp. 142-143
- 10 "Bohemian Rhapsody Stole: how the Czech guest worker created a glass empire in pre-revolutionary Belarus" web.archive.org/web/20191115122020/https://news.tut.by/economics/609084.html
- 11 Albers, Marilyn. "Foreign Insulators." *Crown Jewels of the Wire*, December 1994, pp. 11-12
- 12 Greaves, Paul. "Re: russian blue item" on ICON email list, September 8, 2002, 2030h CDT
- 13 Mulvey, James. "Re: ICON: Have you got the Russian blues ???" on ICON email list, October 31, 2009, 21:37h CST
- 14 Personal email exchange with Bob Berry
- 15 National Insulator Association, "CD 565.1: Belarus" *Glass Insulators from Outside North America* www.nia.org/general/gifona/text/cd565_1_belarus.htm

Sources for Niemen Glassworks History:

- Niemen Crystal website - niemencrystal.com/en/history-of-the-glassworks/
- "Revival of the Gusevsky Crystal Tradition," mus-col.com/en/events/34544/
- "Julius Stolle-Niemen glass factory history chronicle" ussrinsulators.com/stati/julius-stolle-neman-glass-factory-history-chronicle-years-1983-1998.html
- "Neman Glass Works - Our History" www.neman.by/o-predpriyatii/nasha-istoriya
- Kaluzny, Dominik, and Bob Berry. "History of Glass Insulators in Poland." *Drip Points*, Winter 2019, pp. 24-27
- "Lukashenko Plays Major Role in Neman Glassworks Turnaround." www.belarus.by/en/press-center/news/lukashenko-plays-major-role-in-neman-glassworks-turnaround_i_0000171320.html
- "Bohemian Rhapsody Stole: how the Czech guest worker created a glass empire in pre-revolutionary Belarus" - web.archive.org/web/20191115122020/https://news.tut.by/economics/609084.html
- "History of the Famous Glassworks of Nemunas" - niemencrystal.com/en/history-of-the-famous-glassworks-of-nemunas/



BIOGRAPHY

I grew up in eastern Iowa, and started collecting in 1987 at the age of 10. Within a year of finding my first beehives and 42s out next to the old Rock Island mainline, my supportive parents found me a copy of Milholland's book, and then *Crown Jewels* and the NIA. Through those I found nearby shows and other collectors. Jack Bateman was really my earliest mentor, living only a few miles away from where I grew up. You couldn't ask for a nicer gentleman than Jack, and his infinite patience for a kid with so many questions about insulators and the hobby.

My first National was the 1991 Cedar Rapids show, and I was hooked. From there, thanks to influences by Bernie Warren and Marilyn Albers in those early collecting years, I quickly became enamored with the huge world of unusual insulators from outside North America. At the time, it was a very niche segment of the hobby, with most folks having little interest in it.

Like many of us, my collecting slowed down considerably through college and my early professional years. Cars, girls, college, and jobs all fought for attention. I would pick up a new piece here or there and get to a show every couple years, but most of the collection stayed in storage through a series of moves. My fiancé at the time and I both found jobs in Colorado Springs after college, and I've lived for the last 26 years.

My career with FedEx's IT/Engineering department took me all over the world. My co-workers came to dread the last night of any international trip. I'd always be wandering around, room to room, trying to hand off the last of the insulators that my luggage didn't have capacity to take. Leave no glass behind!

I jumped back into the hobby head-first in 2015, and was thrilled to see that insulator collecting was still going strong. My early love of global insulators persisted, and I still primarily specialize in worldwide glass today, with side collections of power glass, threadless, and railroadiana.



Having recently retired from 25 years of corporate life in, most of my time these days goes into my company – Iowa Scaled Engineering – or volunteer work for various non-profits, including the NIA. I've been Doug's minion on *Drip Points* for the past four years, and also have served as the Directory Committee chairperson for the last six. I'm also actively involved with the Triple Ridge club and our annual show, and I decided I'd also run for NIA Secretary this year because I clearly need more to do.

I'd just like to extend some special blame to Bob Berry, Tom Katonak, and Dan Wagner for my current 565.1 addiction. I told myself for years I wasn't going to start into a color run of these things, and now look at me. You all know what you did. Also, some blame goes to Doug Rusher as well, for prodding me into putting together my first display. I'm lucky to count all of you as friends.

Nathan Holmes
NIA #4002

