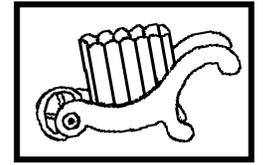


Salty Comments



Facts and Opinion about Open Salt Collecting

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Flint Glass

When an antique dealer is selling a salt, he or she sometimes describes it as “flint glass”. This is like calling it “Sandwich” – it supposedly makes it worth a lot more. Proving that it is flint is easier than proving it is Sandwich, but not something you can do on the spot. You have no sure way to test their assertion.

First, what is meant by “flint” anyway? It implies that it is old (the modern version is called “Lead Crystal”), and that it contains lead. Before 1865, glassmakers did not know how to produce a crystal clear glass without using this material. The old formula called for lead oxide and potash along with the pure silica sand. The ingredients were expensive, so much so that broken glassware was sold back to the factory rather than discarded. The “cullet” was mixed with fresh ingredients to make a new goblet, decanter or whatever. It has the name “flint” because early British glassmakers used ground flint (stone) instead of sand to avoid impurities which would discolor their product.

In 1865, someone discovered a way to make a clear crystal glass using sodium bicarbonate and lime, the modern formula. The glass looked just as good and the ingredients were a lot cheaper. Not only that, it cooled faster in the mold so the pressing crew had to work faster, which saved even more money. This made glass objects much more affordable, and the age of glass tableware was launched. Today lead glass is still made because of its high refractive index. This makes it sparkle more in the sun and lets it do a better job in optical lenses. Because it is softer, it is much easier to cut, so it is preferred by companies who do hand cutting, like Waterford, Orefors or Pepi Herrmann.

So how can you tell if glass is really “flint” or not? There are two ways we know of – measure the refractive index or measure the specific gravity (Sp.Gr.). The former requires an instrument which we don’t have. The latter harks back to Archimedes, and may be familiar to those who have studied physics. The Sp.Gr. of glass depends on what is in it. Soda-lime glass uses lighter ingredients and will measure about 2.4-2.5. Lead glass will measure higher – 3.0-3.3 – depending on the lead content. When Archimedes thought of this idea (for gold, not for glass), he is reputed to have leaped out of his bath and run through the streets shouting. “Eureka, I Have Found It!”. When we thought of it, we displayed a calmer attitude. We cobbled together a crude, labor-intensive apparatus which would give us some answers for our salts.

The apparatus we use is shown in the picture. It is a balance which will hold a salt on one side and a pan for our weights on the other. We don’t need a laboratory scale, because Sp.Gr. is measured by the weight of the salt divided by the weight of the water displaced (the water that buoys up the salt). We can use any weighing system that suits our fancy. In our case we use BB shot as our measure. A salt might weigh 300 BB’s in air and 200 BB’s in water. The displaced water weighs 100 BB’s, so the Sp.Gr. is 300 divided by 100, or 3.0. Eureka – a lead glass salt! The process is a little cumbersome, but with patience and 2 people to work the balance, it is useful.



So we went to work on the collection to see what was what. First we measured a couple of masters to test the “If it rings, it’s flint” idea. We picked the NEW ENGLAND PINEAPPLE – it rings nicely and it tested at 3.0 Sp.Gr. Then we tried the RIPPLE pattern, a much later one made during the soda-lime era. It measured 2.5, right in the middle of the soda-lime range. It gives a pleasant “ding”, but the tone is not sustained. We’ve found that we can be fooled by ringing a single salt – sometimes we can convince ourselves that the ring is sustained, like a bell, when it really is not. We’ve switched our testing so that we use a known flint salt of similar shape and compare the rings to decide about a new acquisition. We tried another salt that we thought might be lead glass because it is so heavy – a French pedestal with an oval bowl. It is not – it measures 2.5, so it’s ordinary glass.

We chose several old salts that deserved testing. The first is an old English style with a blown and cut bowl and a pressed foot. This kind is supposed to be early 1800’s. Sure enough, it is lead glass, measuring 3.0. The foot must be lead glass as well as the bowl – it makes up at least half the weight of the salt. Two other salts we bought as old are a cobalt pedestal with white trim on the rim and a knopp stem (has a bulge halfway up) and an amethyst glass pedestal with threading around the bowl. We have taken them to a Winterthur Museum appraisal session and were told they were consistent with the early 1800’s, but they could not tell us more. We also took the latter one to the Jones Museum, and Dorothy Lee Jones advised it was probably Phoenix Glass Works, Bristol, England 1800-1810. Their Museum has a wine and a pitcher which match it. Our measurements establish that both of these salts are lead glass – 3.2 and 3.0 respectively.

Moving on to the old individual sizes, we got a surprise. We have two OLD MOON AND STARS salts, and one is lead glass (3.0) and one is not (2.5). We’re not sure why the difference, but the Sandwich Museum says the shape was made by the Cape Cod Glass Works as well as Boston & Sandwich. Perhaps this explains things – if so, who made which?



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We have two BELLFLOWER master salts, one heavier and slightly larger than the other. The lighter one rings like a bell, while the other does not. Surprisingly they both are lead glass, measuring 2.9. They are obviously from different molds because of the size, but why the difference in ring? Welker indicates that both Boston & Sandwich and McKee made this pattern in the 1860's. Wish we knew how to tell which was which.

We found two old patterns that surprised us – the LINCOLN DRAPE and the POWDER & SHOT. Both are Sandwich around 1870 or just before. They measure 2.8 – in between the lead and the soda-lime. Perhaps Sandwich was combining the two types by mixing broken pieces of lead glass with the soda-lime ingredients, since it is not clearly one or the other.

A surprise in the individual size was the MORNING GLORY salt. It's heavy, and it's old too, so we thought it had to be lead glass. Nope! It measures 2.4 – definitely soda lime, even though the book says it was made in the 1860's. We also weighed our Mount Washington crown milano salt with decorations by the Smith Brothers (it has their mark). It comes in at 2.4, which is really no surprise.

We checked out 4 art glass salts from the early 1900's. We found that Tiffany used lead glass – the salt shown measures 3.3 – lots of lead in it. If you invert one of his round-ruffled-rim salts on your thumb and strike it, it will ring like a bell. On the other hand, Frederick Carder seems to have used both types for his Steuben glass. We have an Aurene pedestal that is lead, and a Calcite pedestal that is soda-lime. Clearly we need to do some more research in this area. We also have an unidentified salt of a similar type whose Sp.Gr. is 3.4. We've asked many people who made it. Someone suggested early Tiffany, but that was only a guess. If you can shed any light on its origin, please let us know.

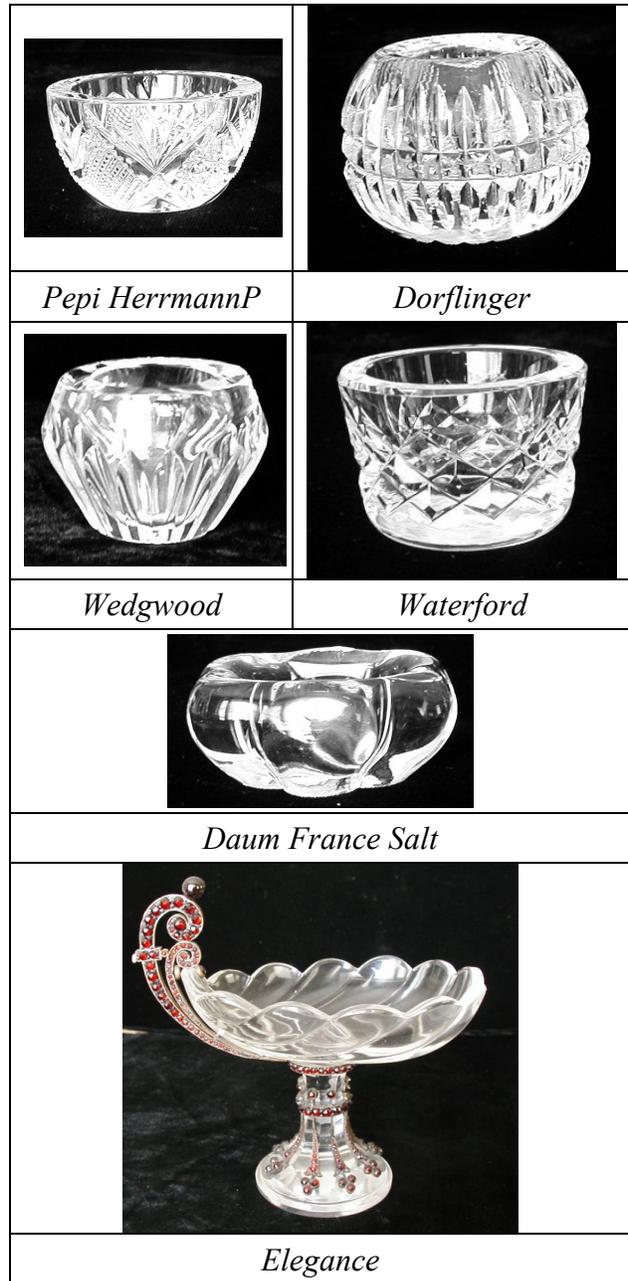
Moving on to current glass artists, we measured a Crider salt and the 4th National Convention salt from Lundberg Studios. Both are soda-lime formula – 2.5 and 2.6 respectively. Although they make art glass they have no reason to use a more expensive formula

	
<i>BELLFLOWER</i>	<i>LINCOLN DRAPE</i>
	
<i>POWDER & SHOT</i>	<i>MORNING GLORY</i>
	
<i>Mount Washington Crown Milano</i>	
	
<i>Tiffany Art Glass</i>	<i>Steuben Aurene</i>
	
<i>Steuben Calcite</i>	<i>Unknown Art Glass</i>
	
<i>Crider Threaded</i>	<i>Lundberg Convention Salt</i>

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Cut glass is a different story. Since the softer lead glass is much easier to cut, it is preferred for this purpose.. We measured salts from Pepi Herrmann, Dorflinger, and Wedgwood, and each has a Sp.Gr. of 2.9 to 3.0. We tried a modern Waterford, and it is slightly heavier at 3.1. We also measured a modern Daum France salt – not cut, but a heavy design (H&J 3443). It came in at 3.0. We guess they use lead glass because of its brilliance. The finished product looks much better this way.

In a related area, we were lucky to find an extraordinary salt in one of the collections we purchased. It is polished and has over 200 tiny garnets in a metal frame that is mounted on it. We call it “Elegance”. We took it to the Corning Museum to see if they could help us identify its maker. Their first reaction was that it could be rock crystal (carved quartz stone), which is very special and very expensive. They took it to their lab where they measured the refractive index, and advised that it was glass after all. They didn’t specify what kind of glass, but we suspect it is lead crystal because it has been hand cut to shape. In any event, the refractive index measurement identified it quickly. We wish we had one of those instruments but, like Archimedes, we have to make do with what is readily available.



We hope you have a nice selection of lead glass salts in your collection, and that you can see its added brilliance. And remember – if you “ring” a piece to test for flint glass (gently, please), do so beside a known flint piece with a similar shape to compare the sounds. Boyd makes bells from soda-lime glass. All that rings is not flint.