

The Dating Game

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Owens-Illinois Glass Co.

A few years back, I was asked to conduct the analysis of a fairly large assemblage of amber bottle glass that was excavated by the University of Texas at El Paso. Most of the artifacts were fragmentary and mostly consisted of amber beer bottle glass. This provided me the opportunity to observe a large sample of amber beer bottle bases from the 1933-1941 period. I noticed an interesting pattern in the Owens-Illinois bases that did not fit the description from Toulouse's *Bottle Makers and Their Marks*.

That set me on a quest to look at as many Owens-Illinois bottles as I could (mostly beer, soda, and milk) to see if the pattern occurred regularly. What I discovered was a more refined way to date Owens-Illinois bottles from the 1940-1946 period with information provided by their marks. While I was looking, I discovered that Pepsi-Cola bottles made by Owens-Illinois followed a still different pattern in their markings.

There are at least three different types of marks embossed on returnable bottles by the manufacturer. These are probably not placed on the containers at the behest of the purchaser (the actual bottler) but reflect the needs of the glass house. The first type is the manufacturer's mark. These are usually symbols and/or letters embossed on the heel or base of the bottle that identify the maker of the container. These were used at least as early as 1821 by Henry Ricketts on his now well-known style of mold that included what was probably the first plate mold (often called slug plates) on the base of his bottles.

Date codes are usually one- or two-digit numerals that indicate the year the bottle was made. This idea appears to have been conceived in conjunction with machine-made bottles. At this point, I have not seen date codes embossed on any blown-in-mold bottles. Date codes are often integral with manufacturer's marks, embedded in mold codes, or they stand alone. They probably originated as tracking devices for returnable bottles. Manufacturers and bottlers alike wanted to know the number of round trips a bottle would make in typical use.

Mold codes are cryptic marks embossed on the heels or bases of bottles. According to Miller and Jorgensen (1986), "bottle mould [a "u" in the word mold is correct in British and Canadian English] numbers serve several functions," including the following:

1. Identification of the bottle, particularly for customers placing orders.
2. Mould and inventory control of the factory.
3. Quality control for bottle production, i.e. bottles with defects can be used to identify the defective moulds that produced them.
4. Production liability, e.g. should a bottle burst, the mould number, in combination with trademarks and date codes, can tell how old the bottle was and what company produced it.

Although Miller and Jorgensen provided a thorough understanding of the marks from Dominion Glass Co., we have little evidence for the meanings of mold codes from most companies. In some cases these codes identify the individual plants that produced the bottles. Mostly, we have little or no information about the meaning of mold codes.

Sometimes, all three types of markings are combined. The Owens-Illinois Glass Co. marks provide a good example. Owens-Illinois was formed in 1929 by a merger between the Illinois Glass Co. and the Owens Glass Co. Both companies were well established in the bottle-making industry by that time. The Owens Bottle Co. grew out of the Toledo Glass Co., originally opened in 1896. The company was renamed the Owens Bottle Machine Co. in 1903 to reflect the importance of Michael Owens' invention of the automatic bottle machine and was again renamed the Owens Bottle Co. in 1911. The Illinois Glass Co. was even older, established in 1873. Both companies continued to expand until their merger, eventually controlling a large share of the bottle business (Toulouse 1971:264-268; 393-397; 403-406).

A letter from Toulouse to May Jones, published in Volume 5 of *The Bottle Trail* (1965), was the first to identify (at least

in print) the relationships between the Owen-Illinois mark and the numbers surrounding it. Toulouse (1971:406) later explained in more detail that the Owens-Illinois manufacturer's mark also contained additional information in the form of company, date, and mold codes. The trade mark is an I inside an oval (or an "O" for Owens) superimposed on an elongated diamond (sometimes called the diamond IO mark). To the left of the mark is a one- or two-digit number that identifies the plant that produced the bottle. Toulouse provided a table on page 395 (reproduced in this article) that identified all the Owens-Illinois plant codes. To the left of the mark is a one- or two-digit date code, and a mold code (also numerals) appears below the mark.

Both archaeologists and collectors, however, have been perplexed that the single-digit date codes could reflect either the 1930s or 1940s. For example, a date code of 2 could indicate 1932 or 1942. In some cases, other ways of dating the container (such as the presence of an Applied Color Label – a technique not perfected until 1934) could determine which decade a bottle was manufactured in. According to Toulouse, however, bottle production apparently began in 1930, so that eliminates the question of whether a single 9 would indicate 1929 or 1939.

While looking at the amber beer bases from the El Paso excavation, I noticed an interesting change in bottles marked with a zero (0). The site was the old distribution center for Grand Prize Beer, and the Grand Prize Distributing Co. occupied the site from 1939 to 1943. Because Prohibition was not lifted until 1933, this meant that bottles marked with a zero were probably from 1940. However, many of the bottles had a zero followed by a period. These also had embossed stippling (in the form of numerous tiny dots) on the bases. All bases marked 1. or 2. also had stippling, and none of them were missing periods. As noted by Toulouse (1971:403), the Duraglas (script) mark first appeared in 1940. On beer bottles, it was used in conjunction with stippling.

Subsequent observation revealed that this combination of one-digit numbers and periods were to be found on soda and milk bottles as well. Eventually, a pattern emerged with the following results. At some point in 1940, someone in the

Owens Illinois Glass Co. seems to have realized that a zero could indicate either 1930 or 1940, so a new code needed to be developed. The answer was to add a period indicating a manufacture of 1940 or later. The stippling idea (presumably to help keep bottles from sliding on wet surfaces) appears to have evolved about the same time, and all this was conceived in conjunction with the Duraglas process.

Owens-Illinois continued the single-digit numeral/period system until 1946, although the company began integrating a two-digit system as early as 1943. That means 1940s bottles may have either a 0 or 0. marking, but 1941 and 1942 are almost always marked 1. or 2. Occasionally, these periods are difficult to see because they are concealed in the stippling, but periods are generally larger than the stippling dots. Bottles made in 1943-1946 may contain either single-digit numerals followed by periods or double-digit markings, such as a 4. or 44 for 1944 [see **Figure 1**].

In several cases, the initial 4 has been added as an afterthought, frequently slightly out of alignment with the other digits associated with the logo. Occasionally, a mold engraver forgot to change the code. The initial bottle used by the Illinois Brewing Co. of Socorro, New Mexico, for example, was made in 1946 but has a single 6 to the left of the Owens-Illinois manufacturer's mark but with no period after the number. However, I have found few exceptions to the period rule. By 1947, the change to double-digit date codes appears to have been completely adopted by all the plants.

Owens-Illinois changed to a new variation of its manufacturer's mark during the mid-1950s. The new mark was identical to the old one except that the elongated diamond was eliminated leaving only an I in an oval. The dating scheme, however, remained the same with the company code to the left of the mark and the date code to the right. Other combinations of letters and numbers often appeared on some part of the base, possibly identification numbers for the bottle style (catalog numbers), although they could have other meanings.

The timing of the change is subject to a bit of controversy. According to Toulouse (1971:403), the older mark (with diamond) was used from 1929 to 1954, and the new mark (without the diamond) was used "since 1954." Peterson

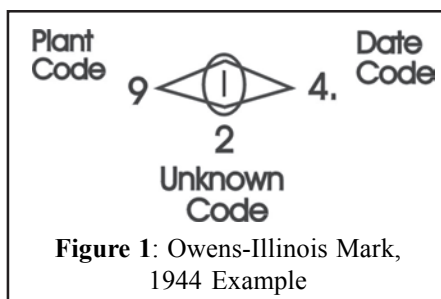


Figure 1: Owens-Illinois Mark, 1944 Example

(1968:49) agreed with a beginning date of 1954 for the new mark. Giarde (1980:80), however, noted that the "diamond and circle mark appears on milk bottles through 1956 with the new circle mark appearing on 1957 milk bottles." In looking through my soda bottles, I discovered the older diamond-oval-I marks with date codes up to 58 (1958) and David Whitten found one from 1959 (from factory #7)! The newer, I-in-an-oval marks, however, began at least as early as 1956 (a 56 date code), so there was a minimum of a three-year overlap. If we could find enough bottles with both types of marks from 1954 through 1958, it would be interesting to see which factories changed at which times. It may be that some plants adopted the new system earlier than others.

As a slight aside, Giarde (1980:77-94) devoted 17 pages to discussion about the Owens-Illinois Glass Co. Along with specifics about dating, he included a section on the lightweight milk bottles (invented by Julian Harrison Toulouse), tables about the dates on the lightweight bottles, discussions about each individual plant, and a section on coffee creamers. Giarde is by far the best reference for manufacturer's marks on milk bottles.

Owens-Illinois also used the older mark (with the diamond) in three slightly different variations. All three differences center around the I inside the diamond. The first is a simple vertical line (called sans serif lettering). The second style has two horizontal bars, one attached to the top and one to the bottom of the "I" (these are serifs). The final style has the serifs but they are slightly upswept and attached to the oval [see **Figure 2**]. At this point, I have not been able to find a specific connection between factories or time periods. These seem to have been used at the whim of the engraver rather than as identifying marks from factories. The newer mark appears in the first two styles but not the one with the serifs attached to the oval.

An interesting exception is the date (and plant) codes on the bases of Pepsi-Cola bottles. The two major soft drink companies (Coke and Pepsi) have both required bottle makers to adhere to specific requirements in marking their respective Coke and Pepsi bottles. For a good survey of manufacturer's marks, date codes, and other information associated with Coke bottles, see the *Coke Bottle Checklist* (1996) by Bill Porter. Porter discussed where date codes and other marks are found and what to look for.

I have seen no comparable work on Pepsi bottles, so I include my observations here (although Stoddard's most recent book [2003] contains many helpful dating and historical information). Prior to Pepsi's adaptation of Applied Color Label bottles (often called painted-label bottles or pyroglazing, in the case of milk bottles), the company did not require any special coding, so all early bottles are marked just like any other bottle from the respective glass companies. However, beginning with the first ACL fountain syrup bottle in 1943, all Pepsi bottles followed a specific format.

Although I will use the Owens-Illinois marks as examples, the same basic format applies to other companies as well (although the earliest bottles followed the older formats). On Pepsi bases, a line of numerals and a single letter appears above the logo. The first one or two digits is the company code (that normally appears to the left of the logo on other Owens-Illinois bottles) followed by a single letter (all I have seen so far are either A or B)

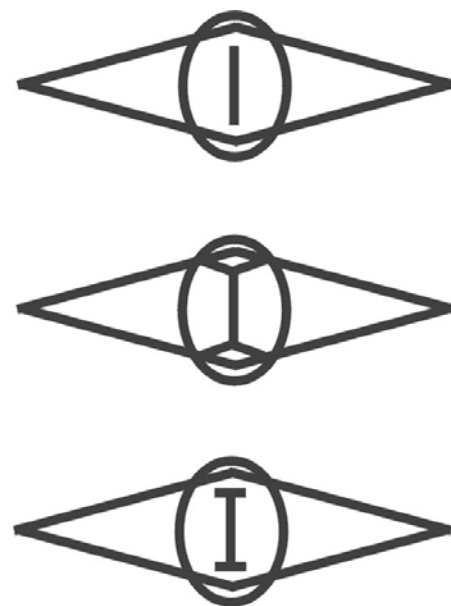
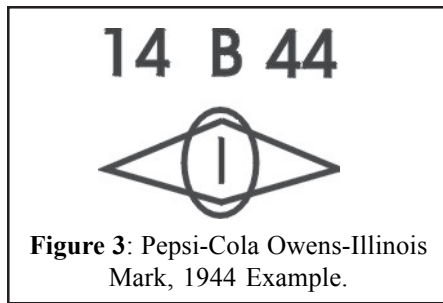


Figure 2: Owens-Illinois Variations



followed by a two-digit date code. Generally, another single-digit number will appear to the left of the logo, and a single- or double-digit number will be placed at the right [see **Figure 3**]. The right-hand number is often (but not always) identical to the date code or to the last digit of the date code. Also, either above or below the logo and the line of code above it is a single letter followed by a four-digit number. This is probably a mold code, although the meaning is currently unknown.

From looking at El Paso soda bottles, it appears that plants 9 and 6 were the most active in making soda bottles with the older logo (1929-1959) (although soda bottles were also made at plants 3, 18, 19, and 23), and plants 5, 7, 9, 15, and 20 made soda bottles with the newer logo (after 1955). Oddly, Toulouse (1971:403) claimed that "there were no plants 5 and 19." However, those numbers appear (with highly-legible embossing) on El Paso soda bottles. Two different bottles bearing the I-in-an-oval-superimposed-on-an-elongated-diamond manufacturer's mark bear a "19" in the space to the left of the logo. Similarly, one container with the later I-in-an-oval mark shows a distinct "5" to the left of the logo. It is clear that Toulouse was confused about plant #5. In his table (Toulouse 1971:395; reproduced here as Table 1), he lists plant #5 in Charlotte, Michigan, opened about 1963. Although he calls it an "old number reassigned," it is obviously a new plant number that was skipped earlier. Could he have also missed a plant #19?

In a personal communication, Mike Elling noted that ca. 1944-1945 Owens-Illinois seems to have run short of red pigment. Mike has a Royal Crown pyramid bottle that is missing the red that was typically used on the label. Billy Grice offered a yellow-only Squirt bottle on eBay with a 1945 Owens-Illinois mark and date code embossed on the base. He stated that "During the war many west coast bottlers went to single colors." It is

possible that red dye was in short supply during the end of World War II. Owens-Illinois may have only experienced the shortage for the final year or so of the war.

One additional discrepancy is worth mentioning. In very small bottles, Owens-Illinois often left off the date, plant, and mold codes completely; only the logo remained. Another exception was provided by David Whitten. He sent information on several pharmaceutical bottles with OI logos and dated paper labels, one of which had the OI logo (no diamond) but only had a single-digit date code. The date code (5) matched the prescription date of 11/23/55. Apparently, on small (but not tiny) bottles, the company reverted to a single-digit date code to save space. David also has several more small bottles with the OI logo and a single-digit date code. That was apparently pretty common on small bottles.

Thus, we find that the Owens-Illinois coding system is a bit more complex and revealing than we originally thought. The transition period between one- and two-digit date codes is usually clearly marked. This research confirms Toulouse's date of 1940 for the use of the Duraglas mark and also sets a date (1940) for the use of stippling on bottle bases by Owens-Illinois. In addition, Pepsi-Cola required a slightly different date coding on Pepsi bottles between 1943 and 1958. Pepsi-Cola used a slightly-altered date system, and date codes were either eliminated or abbreviated on smaller bottles.

Research Group

I would like to take this opportunity to introduce a research group that has somewhat developed on its own and will be showing up more and more often in future columns. A few years ago, Mike Miller and I met at a bottle show in Albuquerque, New Mexico, when I was looking for more information about local bottles. A long time collector of Arizona containers, Mike is the author of *A Collector's Guide to Arizona Bottles & Stoneware: A History of Merchant Containers in Arizona*. He and I were both interested in the Southwestern Coca-Cola Bottling Co., a corporation with branches in both New Mexico and Arizona. We are in the process of writing a small book on the company and its bottles. As part of the process, we began looking at manufacturer's marks that were

not covered or were not *well* covered in currently-available sources. Our involvement spurred my interest in research on manufacturer's marks.

Next, I was contacted by Bill Lindsey. Bill was beginning his massive undertaking of creating a bottle-identification website for the Bureau of Land Management. The site is still in process. In seeking information, Bill discovered my e-books and asked me to comment on his partially-developed site. We soon discovered that we had many interests in common, the most important of which is looking at marks on bottles (including mold lines, manufacturer's marks, and many other small details). Bill is a longtime collector and has worked with numerous archaeologists for the BLM in Oregon, Nevada, and California.

Carol Serr, an archaeologist located in Southern California, was next to enter the group and actually caused its formation. I was in touch with both Mike and Bill but had not brought them together. Carol runs the lab for a cultural resource management (CRM) firm trying to make sense from the artifacts excavated by their field crew. She has fairly recently been involved with glass artifacts and began corresponding with me after finding information about a Clysmic bottle described on my e-book on soda bottles. She later had further contact with me through a listserve for historical archaeologists. Carol is incredibly good at finding data about bottles on the internet and in archaeological collections. I introduced her to Bill Lindsey, and the group was formed.

Our most recent addition, David Whitten, is our only current member from the central section of the country. He read my article on keystone marks (winter 2004 issue of *Bottles and Extras*) and e-mailed me about his webpage on manufacturer's marks. David has been researching marks longer than the rest of us and has provided excellent information both from his research and his personal collection. David is remarkably versed in finding information from eBay. His site is available at: <http://www.myinsulators.com/glass-factories/bottlemarks.html>

Questions for Our Readers

The research group is looking for some information from *Bottles and Extras* readers.

1. On some soda bottles, a mold code appears in the form of (date code) S (single-digit number). We have found 16 S 1 (or other numbers); 17 S 2 (or other numbers); 18 S 1; 20 S 3; and 21 S 2. The final number may vary.

a. Has anyone seen this mark on bottles other than soda or beer bottles?

2. An S G Co (letters are enclosed in a segmented parallelogram with S, G, and Co in three separate segments) mark has been found on soda bottles.

a. Has anyone seen this mark on bottles other than soda bottles?

b. Does anyone have a bottle or bottles with this mark that you can pretty well date?

3. We have found two-digit date codes in conjunction with the S-in-a-star mark.

a. Has anyone seen this mark with any two-year date code other than 28, 29, and 30?

b. Has anyone seen a date code on the crown of bottles with this mark other than 31?

4. We are finding other marks, such as S in an elongated diamond and, S G Co (not in a parallelogram) found on both

heels (the bottom part of the side) and bases (the very bottom of the bottle).

a. Does anyone have a bottle with any of these mark that you can pretty well date?

b. Has anyone seen these marks with date codes or numbers of any sort?

If you can help us, please let us know where the mark is placed (heel or base) and as much information about the bottle or bottles as possible.

Thanks in advance for your help.

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References:

Giarde, Jeffery L.
1980 *Glass Milk Bottles: Their Makers and Marks*. Time Travelers Press, Bryn Mawr, California.

Jones, May
1965 *The Bottle Trail, Volume 5*. Nara Vista, New Mexico.

Miller, George L. and Elizabeth A. Jorgensen
1986 *Some Notes on Bottle Mould Numbers from the Dominion Glass Company and its Predecessors*. Parks Canada, Ottawa.

Peterson, Arthur G.
1968 *400 Trademarks on Glass*. Washington College Press, Takoma, Md.

Porter, Bill
1996 *Coke Bottle Checklist*. Privately printed, n. p.

Stoddard, Bob
2003 *The Big Nickel Drink: The Pepsi-Cola Story and a Lot More*. Double Dot Enterprises, Claremont, California.

Toulouse, Julian Harrison
1971 *Bottle Makers and Their Marks*. Thomas Nelson, New York.

Table 1 - Owens-Illinois Glass Co. Plant Numbers and Dates of Operation* (from Toulouse 1971:395)

Plant Number	Plant Location	Dates of Operation	Plant Number	Plant Location	Dates of Operation
1	Toledo, Ohio	1930-1937	15**	Waco, Texas	1938-present †
2	Fairmont, West Virginia	1930-present †	20**	Oakland, California	1946-present †
3	Huntington, West Virginia	1930-present †	23	Los Angeles, California	1949-present †
4	Clarksburg, West Virginia	1930-1944	10**	Atlanta, Georgia	1960-present †
6	Charleston, West Virginia	1930-1963	21	Portland, Oregon	1960-present †
7	Alton, Illinois	1930-present †	4**	Rockport, New York	1962-present †
8	Glassboro, New Jersey	1930-1939	8**	New Orleans, Louisiana	1962-present †
9	Streator, Illinois	1930-present †	22	Tracy, California	1962-present †
10	Newark, Ohio	1930-1939	11**	North Bergen, New Jersey	1963-present †
11	Evansville, Indiana	1930-1940	5	Charlotte, Michigan	1963-present †
12	Gas City, Indiana	1930-present †	16**	Lakeland, Florida	1967-present †
13	Chicago Heights, Illinois	1930-1940			
14	Brigeton, New Jersey	1930-present †			
15	Okmulgee, Oklahoma	1930-1940			
16	Cincinnati, Ohio	1930-1932			
17	Clarion, Pennsylvania	1932-present †			
18	Columbus, Ohio	1932-1948			
20	Backinridge, Pennsylvania	1932-1940			
25	Terre Haute, Indiana	1934-1950			
26	Muncie, Indiana	1936-1949			

* All dates are approximate; Toulouse used a graph that was not precise.

** Plant numbers with two asterisks are ones where the number was reassigned after the original plant ceased operations.

† Present = 1971, the date of Toulouse's book *Bottle Makers and Their Marks*