

The Owens Bottle Co.

Part 2 – Dating Logos and Codes

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Because both the history and the study of the marks and logos of the Owens firms were so large, we have presented the study in two parts. Part 1 deals with the history of the entire Owens Bottle Machine Co. (1903-1919) and the Owens Bottle Co. (1919-1929) as well as histories of each individual factory. Although plants that were owned by Owens but operated under their own names are included in this study (e.g., the American Bottle Co. or the Graham Glass Co.), each also has its own section in the Encyclopedia. The very complex system of logos, factory identification codes, date codes, and other markings is presented in Part 2.

The Owens marking system may be divided into two parts, each concurrent with the corporate structure of the period – Owens Bottle Machine Co. and Owens Bottle Co. As discussed in Part 1, the Owens Bottle Machine Co. began in 1903 as a manufacturer of machines rather than bottles. Despite that intention, the “experimental” plant began commercial production of bottles for the American Bottle Co. in 1905, and Owens continually increased such manufacture throughout the firm’s history. Many of the early bottles were unmarked except for Owens scars – notably liquor bottles – but soon the firm began embossing single small letters, usually in the center of the bases to identify individual plants. During 1917, Owens added an additional code system with a single-digit numeral to indicate the year (generally above the plant code) and a series of dots in a circle to show the month of manufacture.

During the Owens Bottle Co. period, the system changed. Owens adopted a “Square O” logo, again placed in the center of the base. After a brief transitions period, the firm added a new code system consisting of two numerals. Initially, both were on one side of the Square O, with the left number indicating the factory, the right one showing the last digit of the year. Although the transition was not consistent between factories, most soon shifted the plant code to the left of the Square O, the date code to the right. An identical system migrated into the Owens-Illinois Glass Co. system, when Owens merged with the Illinois Glass Co. in 1929.

Owens Suction Scars

The Owens suction scar (also called a “cut-off” scar) is unique to bottles made using Owens automatic bottle machines. The suction scar can be thought of as having two components. First, there is a round or oval mark on the bottle base that is usually somewhat off-center. This is created by the blank mold. Second, there is feathering around the periphery of the circular/oval mark made by the blank mold. The feathering results from dragging of glass across the base by a knife that cuts the glass off once the blank mold is full (Miller & McNichol, 2012). The “feathering” component of the Owens suction scar is unique to the Owens automatic bottle machines and can generally be used to identify bottles made by the Owens process.

However, there is considerable variation in the overall degree of scarring and visibility of the feathering on suction scars (Figure 1). This is determined by a number of factors. For example, the suction scarring tends to be more obvious on early Owens bottles, on larger bottles, on bottles without a round base, and on bottles for which a dull or dirty knife was used to cut the glass (Miller & McNichol, 2012). Suction scars are usually fairly conspicuous on the single letter code bottles because they were made during the early Owens years using older machines. However, on smaller, round bottles the feathering can sometimes blend into the border area between the bottle heel and the periphery of the bottle base or may be seen along the heel of the bottle. If the knife had just been cleaned and sharpened, then the feathering of the suction scar may be difficult to see.



Figure 1 – Variation in Owens scarring

Owens Bottle Machine Co. - Single Letter Period (1905 - 1919)

A “Square-O” is the most widely recognized Owens bottle mark. However, before Owens adopted the “Square-O” in April 1919, bottle bases were embossed with a single letter code to identify which Owens factory had produced each bottle. As detailed below, we have

been able to definitively show that Owens used the letters F, G, H, N, and O by linking mold numbers on the heels of bottles with each letter to an Owens catalog index from the Square-O period.

We have also used the combination of Owens bottle machine scars and a unique Owens digit-dot code indicating bottle production year and month on the base to show that the letters C, K, S, and W were almost certainly used by Owens. In subsequent sections of the paper that cover each single letter code, we have also mapped the letters to specific Owens factories based on meaningful correspondence with factory names and geographic locations, the years that each factory was in operation, and the types of bottles that each factory made, as well as other considerations such as economic influences like Prohibition that impacted production at some Owens factories but not others.

Owens Digit-Dot Codes

The Owens digit-dot system was used during the last few years of the single letter code period and characterized by a single digit for production year with anywhere from one to 12 dots to indicate production month that appeared on the bottle base along with the single letter code for factory name or location (Figure 2).

Based on analysis of over 80 bottles with digit-dot codes, the Owens digit-dot code bottle dating system was in effect from at least as early as July 1917 until April 1919, when the Square-O trademark was adopted by Owens. To our knowledge, Owens was the only bottle manufacturer that used this type of dating system at that time.

The digit for year appears to have been consistently placed above the single letter on round bottles. However, on bottles with a rectangular base, the digit-dot codes are sometimes embossed elsewhere due to spatial constraints. There is considerable variability in the relative size of the digit and distance of the digit from the letter. This is important because small digits far from the letter code may be obscured by the Owens suction scar. We have seen multiple



Figure 2 – Owens Digit Dot Codes

patterns for the spatial arrangement of the dot codes for production month. On the base of most Owens bottles, the dots begin to the right of the digit for year and move clockwise around the letter. However, on some Owens bottles with digit-dot codes, the dots encircle only the digit and the entire digit-dot code is widely separated from the letter. Moreover, the dots sometimes move around the digit in a counterclockwise pattern.

Depending on the amount of scarring on the bottle base and relative placement of the digit-dot code, accurate identification of the base marks can be difficult or impossible. The scarring on Owens letter code bottles is worse, on average, than scarring on Owens bottles made during the later Square-O period. In addition to scarring, other factors such as mold wear or the presence of small amounts of residual glass stuck to the mold can also make it difficult or impossible to distinguish base marks.

Owens Bottle Co. - Square-O Period (1920 - 1929)

At the annual meeting of the Owens Bottle Machine Co. in Toledo, Ohio, on April 9, 1919, the company changed its name to the “Owens Bottle Co.” because bottle production had become its primary concern, and licensing of Owens bottle machines to outside companies had become a secondary focus (*National Glass Budget* 1920:1). Coincident with the name change, Owens also adopted a new trademark called the Square-O, which was the letter “O” within a square. It was underscored that the Square-O trademark would be of interest to the stockholders because “they can easily identify Owens bottles, for practically every bottle will have this trade-mark blown into the bottom” (*National Glass Budget* 1920:1). The U.S. Patent Office registration for the Square-O was effective March 16, 1920. The registration indicates that the Square-O trademark had been continuously used by the Owens Bottle Company since April 14, 1919 (Figure 3). An October 1922 Owens advertisement in the *Glass Container*

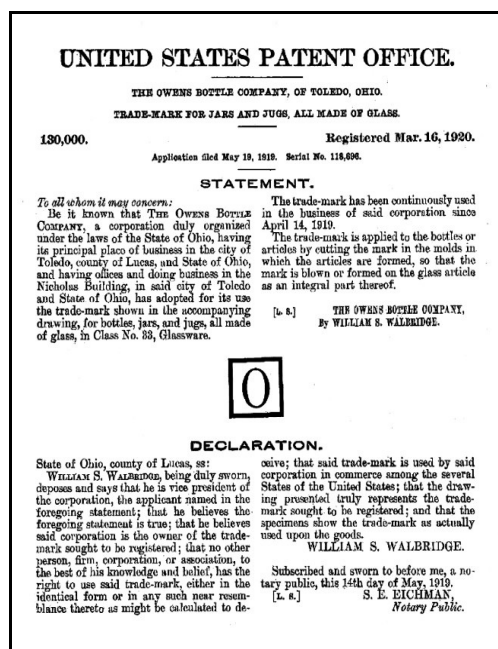


Figure 3 – U.S. Patent Office registration for the Square O

explained that “the “O” is for Owens, and the “Square” symbolizes our policy of square dealing with everyone” (Figure 4).

During the Square-O period, which covered the decade from 1920 to 1929, Owens marked bottle bases with a single digit to indicate production factory and a single digit to indicate production year. The digit for factory was always to the left of the digit for year.

However, in the early Square-O years, the factory-year



Figure 5 – Placement of plant and date codes

code digit sequence variably appeared with both numbers to the left of the Square-O, with both numbers to the right of the Square-O, or with the factory number to the left of the

Square-O and the year number to the right of the Square-O. By the mid-1920s, the latter approach seems to have become standard, and, after 1925, most bottles have the factory code on the left side of the Square-O and the year code on the right side – a configuration adopted by the Owens-Illinois Glass Co. that succeeded the Owens Bottle Co. in 1929 (Figure 5).

During the Square-O period, the Owens Bottle Co. operated seven factories numbered 1, 2, 3, 4, 5, 6, and 8. Based on our analysis, all seven produced bottles with their respective factory numbers on the bottle base for at least part of the Square-O period. Each of the numbered Owens factories could be linked with a corresponding Owens letter from the single letter period. Bottle production at these factories is discussed below in the context of corresponding letter codes.

Owens Square-O Transitional Period (April 1919 - December 1919)

Although the Square-O was adopted as the trademark of the Owens Bottle Co. in April 1919, it appears that there was a transitional period before factory-year codes were added to the Owens bottle base in 1920. To our knowledge, a bottle with a factory code digit on the left and a



Figure 4 – 1922 Owens ad

year code of “9” on the right that definitively corresponds to 1919 has not been identified. We have, however, identified two apparent Square-O base mark patterns that appear to have been transitional between use of single letter codes for factory with digit-dot codes for production year and month and subsequent use of the Square-O in combination with a left-sided single digit factory code and a right-sided single digit year code.

Owens Square-O Bottles with a Ghost-9

The most striking transitional pattern is a Square-O that appears to have been etched directly over factory letter codes with digit-dot codes indicating production in 1919. A faintly etched “9” that is most often found just above the top line of the Square that encloses the O is the most conspicuous feature. Part of the “9” is sometimes obscured by the top line of the Square. Dots can often be seen starting to the right of the “9” and moving clockwise. One or more dots can often be seen inside the Square, or just outside the Square, on the right side (Figure 6). If the “9” cannot clearly be seen, it is sometimes possible to follow the dots back to find it. The O inside the Square sometimes appears to have been etched directly over old single letter codes for factory.

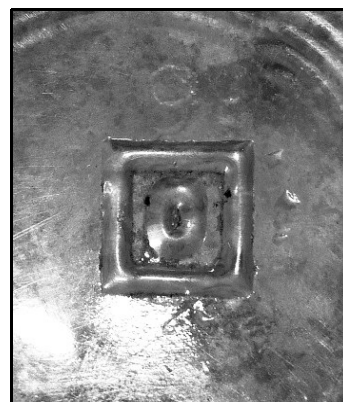


Figure 6 – Ghost-9 transitional bottle.

The majority of ghost-9 bottles do not have any factory-year codes associated with the Square-O. However, as discussed below, on a few of the ghost-9 bottles it was not only possible to identify an old single letter code underneath the Square-O but factory-year codes typical of the Square-O period were also seen on the base. This offers the most compelling evidence linking Owens factory letter codes to Owens factory number codes. Nearly all of the ghost-9 bottles that we have seen have mold numbers on the heel that correspond to mold numbers in the Owens catalog index. Additionally, nearly all of the ghost-9 bottles have an apparent mold cavity number on the heel opposite the mold number. These mold cavity numbers, which are single digits from 0 to 9, are encircled by seven or more dots.

Owens Square-O with Heel Code Encircled by Dots

A second transitional pattern is similar to the first one, except that there are no apparent ghost nines or dots on the bottle bases. So, these bottle bases have a Square-O and nothing else. But as seen for the ghost nine bottles, mold numbers are found on the bottle heels, many of which correspond to mold numbers in the Owens catalog index. Also, as seen for the ghost-9 bottles, on the opposite side of the heel from the mold number there are single digit or low double digit heel codes that are encircled by at least seven dots (Figure 7). These are apparent mold cavity numbers.



Figure 7 – heelcode – circle of dots around number

Owens Mold Codes

There are at least two types of mold codes that appear on Owens bottles. The first type of mold code is the mold number, which directly corresponds to mold numbers that appear in the Owens catalog index. It is by matching mold numbers on the heels of Owens single letter code bottles to identical mold numbers in the Owens catalog index that we have been able to definitively attribute the single letter codes on these bottles to Owens. The second type of mold code is the mold cavity number, which corresponds to a particular mold cavity in the arm of the Owens machine that made the bottle.

Owens Catalog Index

The Owens catalog index that we have is undated. However, the index is clearly from the 1920-1929 Square-O period because the Square-O trademark appears at the top of every page. Altogether, the catalog index lists 836 mold numbers that have been grouped into 10 sections. Within each section, multiple bottle types are listed, and one or more mold numbers are associated with each bottle type. The first and largest section of the index is for condiment bottles, which includes 55 bottle types associated with 284 mold numbers. However, Owens seems to have used the term condiment loosely because the condiment section includes grape

juice bottles, water bottles, candy jars, and other types of bottles made to contain food and beverages that are not usually considered to be condiments.

All Owens bottle mold numbers that we were able to link with the catalog index corresponded to bottle types listed in the condiment section. Altogether, we were able to link 31 mold numbers found on the heels of Owens bottles. At least one mold number was found for each of the following 11 bottle types: octagon shape catsup, sixteen panel catsup, chili sauce/salad, and mayonnaise dressing, mayonnaise jar, olive and preserve jar, pickle bottle, bell shape pepper sauce, champagne shape grape juice, fluted shape vinegar, cruet shape jug, and fluted jug.

Of 31 different mold codes on nonproprietary Owens bottles with a Square-O in the BRG database, we were able to match 25 (81%) to the index. Of the six mold numbers that could not be matched, four were on bottles produced from 1920 to 1922, and two were on bottles made in 1927. All eight mold numbers found on the heels of nonproprietary bottles made from 1923 to 1926 could be matched to the index. This suggests that the index was generated sometime between 1923 and 1926. Mold numbers on the 1920 to 1922 bottles that could not be matched were likely outdated; whereas, mold numbers on the 1927 bottles were probably new.

Of 39 different mold codes on nonproprietary bottles from the single letter code period, 13 (33%) could be matched directly to the catalog index. Direct matches were made for bottles with single letter codes of F, G, H, N, and O. Although there were no visible mold codes on the K, S, and W bottles, all of these bottles had characteristic Owens digit-dot codes to indicate the year-month of production, similar to those seen on bottles with the other letter codes. Many, but not all, of the C bottles had digit-dot codes.

Although, there were eight different mold numbers on proprietary bottles from the Square-O period and 14 different mold codes on proprietary bottles from the single letter code period, only two proprietary mold codes could be matched to the Owens catalog index. One was mold number 432 on 12-ounce Premier chili sauce bottles, and the other was mold number 932 on a 4-ounce Welch's Junior champagne shape grape juice bottle. Because we also found identical nonproprietary bottles of both types with the same mold numbers on the heels, it is likely that Owens used the same mold for both proprietary and nonproprietary bottles. Even though most proprietary bottle mold numbers could not be found in the Owens catalog index,

these numbers provide valuable linkage information because the same number was sometimes seen on identical bottles from both the Owens single letter code period and the Owens Square-O period or was seen on identical bottles with different letter codes.

Mold Numbers

On each page of the Owens catalog index that we have for the Square-O period, specific types of bottles are associated with one or more numbers comprising three or four digits (rarely two digits). The column heading for these numbers is “Mold No.” Although we have found matching mold numbers on the heels of many types of Owens condiment bottles we have not seen mold numbers on the heels of other bottle types (Figure 8).



Figure 8 – mold number heelcode

Interestingly, we have found on some Owens bottles that letters (and sometimes dots) occasionally follow (or precede in the case of dots) the mold numbers on the Owens bottle heels.

We have seen the following mold number variants: 225B, 383D, Dot 393, 456B, 471B, and 1294D. We have also seen bottles with mold numbers 225, 383, and 471 that did not have a letter suffix and bottles with mold number 393 that did not have a dot prefix. In every case, the bottles with a letter or dot accompanying the mold number were identical to those bottles with the same mold number but no letter suffix or dot prefix. In each case, the bottles with a letter or dot accompanying the mold number were identical to those bottles with the same mold number but no letter suffix or dot prefix. Bottles with the 225, 393, 456, 471, and 1294 codes all matched the Owens catalog index. It is likely that the letters and dots accompanying the mold numbers represented multiple copies of the same mold. Miller and Jorgensen (2010) found:

From examination of the mould lists associated with the Dominion Glass Company and its predecessors, it is clear that a mould number represents a bottle shape and capacity rather than just one mould. The 1926 mould list, for example, has 3-ounce American panels as mould number 148. This mould number had five hand moulds, six Owens machine moulds and two O’Neil semi-automatic moulds. . . . From the evidence it would appear that bottle shape and capacity are the two determining elements for a mould number.

Mold Cavity Numbers

On most Owens bottles, a mold cavity number can be found on either the heel or the base of the bottle. Mold cavity numbers that we have seen range from 1 to 25 and may be associated with one or two dots that are variably found before, after, above or below the numbers. Based on our examination of more than 400 Owens bottles, the earliest bottles made during the single letter code period had only single digit mold cavity numbers. However, by the mid-1910s, two-digit mold cavity numbers began to appear, and, by the early 1920s, dots began to appear in association with the mold cavity numbers (Figure 9).

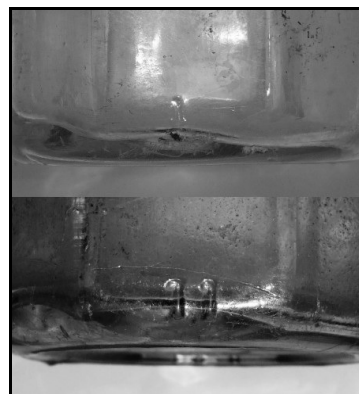


Figure 9 – mold cavity numbers

This likely reflects the increasing complexity of the Owens automatic bottle machine over more than 20 years of continual development. The first Owens machines used for commercial production in 1905 had only six arms, each of which contained a single mold cavity (US DOL 1927:38). By 1909, Owens had developed a 10-arm bottle machine, and, by 1914, a 15-arm bottle machine was in commercial use (Cable 1999).

By no later than 1920, Owens had modified the 10-arm AR bottle machine to run with two blow heads per arm and one mold cavity for each blow head (US DOL 1927:70). Machines with two blow heads per arm were referred to as “doubles”; whereas, machines with only one head per arm were known as “singles” (US DOL 1927). By no later than 1925, Owens had also converted the 10-arm AN, 15-arm AQ, and 15-arm AV machines from singles to doubles (US DOL 1927). By the end of 1921, Owens was using machines with plural and triple cavity molds, that is each blow head contained molds with two or three cavities (Six, Dean. 2010). The most sophisticated automatic bottle machine developed by Owens was the CA double triplex, which was in use by no later than 1925 (US DOL 1927).

The CA double triplex had 10 arms with two blow heads on each arm and a three cavity mold within each blow head and was, therefore, capable of making 60 bottles per revolution (US DOL 1927). The CA was designed for small prescription ware only, and the twenty plural cavity molds were not interchangeable with any other machine (Bredehoft & Bredehoft 2010). This contrasts sharply with earlier Owens machines on which the molds were interchangeable. An Owens CA was used to make Owens Ovals at the Charleston, West Virginia, plant and had a

capacity of 432,000 bottles per day (Bredehoft & Bredehoft 2010). Dots were probably added to mold cavity numbers to indicate location of the mold cavity in each head/arm unit of the Owens bottle machine that produced the bottle. No dots would indicate the first mold cavity, one dot would indicate the second mold cavity, and two dots would indicate the third mold cavity. All five of the Owens bottles that we have seen with mold cavity numbers accompanied by two dots were made at the Charleston, West Virginia, factory between 1925 and 1928.

Miller and Jorgensen (2010) noted that the earliest numbers on bottles produced by automatic bottle machines were probably mold cavity codes. The importance of mold cavity identification for Owens quality control purposes is underscored by an anecdote from the *Life of Mike Owens* (Bredehoft & Bredehoft 2010): “Mike (Owens) watched a bottle machine in the Fairmont plant one day, and then turned to the operator. ‘Number four is holding the bottle too long during the blowing cycle,’ Mike said. ‘Speed it up.’”

A 1971 Owens-Illinois patent application (U.S. Patent Office 1973) further explains:

It is well known in the bottle making art that many defects are cavity oriented. That is, a particular mold, of a plurality of molds, will tend to continue to produce a particular defect once the conditions are present to create the defect. It is thus necessary to determine which mold out of multiple molds is producing a defective bottle so that corrective measures may be taken. To this end, it is a common practice to mold into the bottom of containers a digital representation of the mold of origin; i.e., a bottle produced by mold number 7 will have a small numeral 7 molded into the bottom of the bottle.

The IMACS User’s Guide (June 1992), noted that Owens-Illinois used the following system:

Underneath the trademark, another number identifies the mold in which the bottle was made. Holscher (1967) explains the mold numbers as follows: These numbers would go up to the number of mold cavities made which might be, say from 1 to 22. They would be plain numbers if there was one mold cavity in each mold casting. However, many of our bottles are made in mold castings which contain two or three cavities. A plain number could also indicate the front cavity

of a two or three cavity mold. A dot after the number indicates that the bottle is made in the rear cavity of a two or three cavity mold. If two dots follow the number, this would indicate quite recent production in which the bottle is made in the middle cavity of a three cavity mold.

Although it was noted that two dots indicated “quite recent production” in a three cavity mold, the Owens machines had three cavity molds by the early 1920s (Six 2010; US DOL 1927).

As mentioned above, mold cavity numbers on Owens bottles appear to have been embossed on either the bottle heel or the bottle base. The greatest variability is evident during the Owens single letter code period when both the heel and the base were common locations for the mold cavity number, but many bottles did not have any mold cavity number. During the Square-O period, virtually every Owens bottle had a mold cavity number. On the vast majority of Square-O bottles, the mold cavity number is somewhere on the bottle heel, but, occasionally, a mold cavity number can be found on the bottle base. In contrast to the mold cavity numbers, the Owens mold numbers appear to have been consistently embossed on the bottle heel, although it appears that they were only embossed on condiment bottles. When both a mold cavity number and a mold number were embossed on the bottle heel, they were placed on opposite sides.

Although the Owens catalog index uses the term mold number in reference to numbers that can be found on the heel of Owens bottles, and the bottle making industry uses the term mold cavity in reference to numbers that can be found on either the base or heel of Owens bottles, these terms are confusing because it is not clear that they both refer to molds used to make the body of the bottle. Namely, the mold number in the catalog index refers to the “finish” mold; whereas, the mold cavity number refers to the “blank” mold. The mold cavity, itself, is simply the open space within the blank mold.

A 1927 report on Productivity in the Glass Industry (US DOL 1927) eloquently describes formation of the parison: “The Owens machine consists of a number of working units, each one complete in itself. . . . Each unit or arm carries a vertical mold called a ‘blank mold’ placed directly under and accurately fitted to another mold called a ‘neck mold.’” The report continued, noting that after the parison is formed, “the two halves of the blank mold open and the glass ‘parison’ (or partly formed bottle), now partly solidified, is seen hanging suspended by the neck portion inclosed [*sic*] in the neck mold. From below now arises the finishing mold . . . [that]

closes around the suspended parison. Another valve opens and compressed air is forced through the opening in the neck mold and distends the blank glass until it fills completely the pattern in the finishing mold.”

The use of mold cavity numbers to identify the head/arm of an Owens bottle machine that produced a particular bottle may beg the question of why there would not have been any numbers to identify the bottle machine itself. However, a number to identify the machine was likely superfluous. First, because of their massive size, operational costs and tremendous production capacity, the number of machines at Owens factories was limited. For example, Factory No. 1 and Factory No. 2 in Toledo, Ohio, never had more than two machines, and the Greenfield, Indiana, plant operated with only three machines. Although the Fairmont, West Virginia, factory had 12 bottle machines, this factory produced a wide variety of bottles. Second, different model machines were made for different sizes of bottles (Bredehoff & Bredehoff 2010). Third, because it was a time consuming process to switch molds on a machine, specific machines were designated for specific bottle types.

Individual Factories

Although the use of Manufacturer’s Marks in the glass industry was decades old by the time the Owens factories came into being, Owens may have been the first firm to use initial factory codes on its bottles. This *may* have been required by the Curtice Bros. Co. – a catsup manufacturer – that required manufacturer’s marks on the bases of all catsup containers made for its use. Although we have not discovered the year that Curtice Bros. instituted the requirement, it was almost certainly in place when the Owens Fairmont, West Virginia, factory began producing catsup bottles in 1909.

Regardless of the reason, Owens began embossing individual initials – representing specific factories – about 1911, almost always in the center of the base of the bottles. During 1917, the firm added single-digit date codes (indicating the year of manufacture) above the plant initials – with a circle of one to twelve dots radiating from the date code to show the month of production. Owens eliminated the dot system in 1919, although some codes migrated to the bottle heels during the transition period. The factory codes and logos below will be presented in alphabetical – rather than chronological – order.

Owens Factory C

The BRG database includes 16 Owens single letter C bottles. Five of the C bottles were proprietary, five were prescription ware, three were packer jars, two were ink bottles, and there was one broken bottle base. Five of the C bottles had Owens digit-dot codes indicating manufacture dates ranging from December 1917 to January 1919 (Figure 10). Of 10 C bottles that could be examined for heel codes, two had very faint single digit heel codes. There were no Owens mold numbers on the heels that could be used for linkage with the Owens catalog index. However, this is not surprising as mold numbers on the heel of Owens bottles appear to be limited to condiment bottles and none of the single letter C bottles appear to have been made to contain condiments.



Figure 10 – C factory codes

Additionally, compared with other Owens factories, a disproportionate number of bottles produced by Owens Factory C may have had digit-dot codes and heel codes that were obscured by the Owens scar. This is in part because many bottles were small and/or had a noncircular base. With small bottles, the Owens scarring can cover most of the bottle base and, with noncircular bottles, the Owens scar tends to move up along the heel (Miller and McNichol, 2012).

The Owens single letter C almost certainly indicates production at the Owens factory in Clarksburg, West Virginia (Factory No. 4), which was opened in 1913 to produce prescription ware and proprietary bottles. First, the letter C could only correspond meaningfully to either the Owens factory in Clarksburg or the Owens factory in Charleston, West Virginia. Because the Owens digit-dot codes on C bottles include 1917, it is unlikely that they would correspond to the Charleston, West Virginia, factory (Factory No. 6), which was not fully operational until 1918. Furthermore, when the Charleston factory was opened, it was actually located in Kanawha City (see section on Owens K bottles). Second, the distribution of Owens C bottles closely corresponds to the types of bottles produced by Factory No. 4 in Clarksburg. In the February 14, 1914, *National Glass Budget*, a report from Clarksburg, West Virginia is quoted as:

The Eastern Owens Bottle Machine Co. are making successfully a full line of prescriptions from half-ounce to thirty-two ounce ware. They are always making five different kinds of ware at a time, as follows: French square, Boston round, crown, Philadelphia and Owens ovals. . . . A full line of toilets and panels, including the famous ball-neck, has been made here. On the amber tank the machines are making peroxides successfully.

In the Owens Annual Report for the fiscal year ending September 30, 1915, Factory No. 4 was described as “operating upon prescription and proprietary ware” (*National Glass Budget* 1915b:1). Third, we have found no Owens Factory C catsup bottles. In contrast, we have found multiple catsup bottles produced by Owens factories F, G, H, N, O, and S. Fourth, the Owens C factory and Owens F factory are the only two for which we have seen amber bottles during the single letter code period, and the Clarksburg factory had an amber tank (*National Glass Budget* 1914:8).

Although the Clarksburg factory was opened in 1913, the “C” may not have been used until late 1914 or early 1915, after the Owens Bottle Machine Co. absorbed the Owens Eastern Bottle Co. The Owens Annual Report for the fiscal year ending September 30, 1915 (*National Glass Budget* 1915b:1), noted for Factory No. 4 in Clarksburg, West Virginia that:

the six-machine factory at Clarksburg was formerly known as the plant of the Owens Eastern Bottle Co. Your company was a majority stockholder in that company. During December of 1914, holdings of the minority stockholders were purchased, giving your company complete ownership, and immediately thereafter the property and the identity of the Owens Eastern Co. were merged with this company.

If the C was first used in January 1915, C bottles would have been made for 2 years and 7 months before the digit-dot codes were first used. The digit-dot codes were used from about July 1917 to April 1919, or about 1 year and 10 months. This is consistent with the somewhat larger number of C bottles without digit-dot codes compared with the number of C bottles with digit-dot codes.

It is noteworthy that the design of the single graduated oval medicine bottle we have seen from Factory C differs significantly from the Owens Ovals that were made at Factory K/6. Since the Owens Oval was made by the Owens Clarksburg plant at least as early as 1914 (*National Glass Budget* 1914:8), it may have been redesigned before production was subsumed by the Charleston, West Virginia, plant after it opened in 1918 (see Factory K/6 section of paper).

Owens Factory No. 4

We have identified 14 Square-O bottles with an Owens factory code of 4, indicating production at the Clarksburg, West Virginia, factory. These include four proprietary medicine bottles, three ball-neck panels, a long neck oval castor oil bottle, three catsup bottles, a toilet bottle, and two broken bottle bases. Two of the catsup bottles had mold number 1174 embossed on the heel, a number linked to the Owens catalog index. Production years represented in our sample were 1920, 1921, 1922, 1923, and 1924. Most of the Factory No. 4 bottles had both the factory code and the year code on the right side of the Square-O. However, a few bottles had the factory code on the left side of the Square-O and the year code on the right (Figure 11). It is not clear exactly when the Clarksburg factory was closed permanently. Six (2010) noted in the History of the Owens Bottle Machine Co. that



Figure 11 – Factory code 4

In 1925 . . . the Clarksburg, WV factory was closed all during that year. . . . In 1926 . . . the Clarksburg, WV factory remained idle and During 1927, the Clarksburg plant remained idle.

Toulouse (1971:396) states that the Clarksburg factory closed in 1921. However, this is clearly incorrect because we have seen Owens Factory No. 4 bottles with year codes indicating production as late as 1924.

Owens Factory F

We have collected detailed information on 80 Owens bottles with a single letter code of F (Figure 12). This number is greater than the total number of single letter code bottles that we have seen from all other Owens factories combined. The Owens F bottle group includes many types of proprietary and nonproprietary condiment bottles as well as several amber medicine bottles. Eight different mold numbers found on the heels of the F bottles could be linked to the Owens catalog index.



Figure 12 – F factory codes

These included a 14-oz. octagon shape catsup bottle with mold number 225, a 9-oz. champagne shape Royal Purple grape juice bottle with mold number 374, a 16-oz. champagne shape grape juice bottle with mold number 378, an 8-oz. 16-sided catsup bottle with mold number 456B, seven 8-oz. octagon shape catsup bottles with mold number 708, a 10-oz. octagon shape catsup bottle with mold number 711, a 4-oz. Welch Junior champagne shape grape juice bottle with mold number 932, and a 26-oz. champagne shape grape juice bottle with mold number 1167. All of these bottles had an Owens digit-dot code indicating production between 1917 and 1919, except for one of the 8-oz catsup bottles with mold number 708, the 16-oz grape juice bottle with mold number 378 and the 9-oz. grape juice bottle with mold number 374.

Nearly half of the F bottles had digit-dot codes (36/80=45%). Production dates ranged from July 1917 to April 1919 and included 15 of the 22 months (68%) covered during the time period defined by this range (Figure 13).

Proprietary bottles included P.J. Ritter catsup, Yacht Club, Sprague-Warner catsup, Heinz catsup, Pride of the Farm catsup, Curtice Brothers catsup, Premier chili sauce, Snider's chili sauce, J.F. Howard of Haverhill, Massachusetts, Royal Purple grape juice and Welch's grape juice.



Figure 13 – F plus dot codes

The Owens letter code of F was almost certainly used to identify bottles made at Factory No. 3 in Fairmont, West Virginia. The alliteration of the letter F for Fairmont is compelling in and of itself because there were no other likely associations for F at that time. However, the sheer number of Owens single letter F bottles and the wide range of bottle types represented, provides further support. As detailed below, the cumulative volume of bottle production at the Owens Fairmont plant far exceeded the number of bottles produced by any other Owens factory in operation during the single letter code period.

Owens built the Fairmont, West Virginia, plant under the umbrella of the Owens West Virginia Bottle Co., which it incorporated during the last two months of 1909 (Scoville 1948:110). Construction of the Fairmont plant was completed by the end of September 1910 (Scoville 1948:110). Fairmont was equipped with six new 10-arm Owens bottle machines, which significantly increased bottle production compared to 6-arm machines that had been used until that time (Walbridge 1920:88). In the last quarter of 1911, the Owens West Virginia Bottle Co. was consolidated with the Owens Bottle Co., and the Fairmont factory became Owens Factory No. 3 (Scoville 1948:110).

In the Owens annual report for the fiscal year ending September 30, 1912, it was reported that two additional 10-arm machines had been installed at the Fairmont plant, and production for the year had been 64,962,720 bottles compared with 15,841,440 for the Owens experimental factory (Factory No. 1) and the Northwestern Bottle factory (Factory No. 2) combined (*Commercial & Financial Chronicle* 1912:2475). The Owens annual report for the fiscal year ending September 30, 1913, reported that the Fairmont plant had been enlarged during the preceding year and was equipped with a dozen 10-arm bottle machines (*National Glass Budget* 1913:1). Production at Fairmont during Owens Fiscal Year 1913 was 88,285,104 bottles, compared with 21,244,176 bottles for Factory No. 1 and Factory No. 2 combined (*National Glass Budget* 1913:1).

During Owens Fiscal Year 1915, by which time Factory No. 4 in Clarksburg, West Virginia, was fully operational, the Fairmont plant made 77,981,472 bottles compared with 30,144,096 at Clarksburg, 6,719,040 at Northwestern and 9,332,640 at the Owens experimental factory (*National Glass Budget* 1915:1). There was a relative increase in bottle production at the Clarksburg factory over the next two years, but production at Fairmont remained unsurpassed. In Fiscal Year 1917, the Owens annual report showed bottle production numbers of 118,562,544 for

Fairmont, 102,223,152 for Clarksburg, 13,763,232 for Owens experimental, 10,189,584 for Northwestern and 7,139,520 for the new Greenfield, Indiana, factory (Factory No. 5) that had only been operational for part of the year (*National Glass Budget* 1917:8).

In short, the Owens Fairmont factory was where Owens made its debut as a contender in the bottle-making industry, in addition to its established role in manufacturing automatic bottle machines and licensing them for use by other companies. Compared to a single machine used at the Owens experimental factory and two machines at the Owens Northwestern factory, Factory No. 3 in Fairmont started off with six 10-arm bottle machines in 1910 and was operating a dozen 10-arm bottle machines by 1913.

As noted in Proceedings of the Thirty-Fourth Annual Convention of the Glass Bottle Blowers Assn. (GBBA) in 1910, the Fairmont mission was production of “all bottles the right of which has not been leased to other firms, such as catsups, round and square prescriptions.” However, Proceedings from subsequent conventions of the Glass Bottle Blowers Assn. indicate that bottle production at Fairmont included “a general line of catsups from 6 oz. to 32 oz, pint and one-half pint flasks, brandies, grape juice, etc.” (Glass Bottle Blowers Assn. 1911, 1912) or “catsup, grape juice, salad dressing, peroxides, shoe polishes, brandies and liquor ovals” (Glass Bottle Blowers Assn. 1916, 1917, 1919).

At Owens Factory No. 1, bottle production was limited to two machines that made catsup bottles, gallon packers and syphons (*National Glass Budget* 1916:1). Therefore, catsup bottles would likely have been the predominant type of bottle produced. At Owens Northwestern Factory No. 2, production seems to have changed over time. In July 1909, GBBA noted that The Northwestern Co. operated two machines, making 8-ounce catsups and whisky bottles (Glass Bottle Blowers Assn. 1909, 1910, 1911). However, in 1912, GBBA noted that Northwestern was making 8 oz. ware, catsups and brandy bottles (Glass Bottle Blowers Assn. 1912). Bottle production at Owens Factory No. 4 in Clarksburg, West Virginia was limited to prescription and proprietary ware (*National Glass Budget* 1915:1).

At Owens Factory No. 5 in Greenfield, Indiana, three machines were exclusively dedicated to catsup bottles (Voll 1917; Glass Bottle Blowers Assn. 1919). Owens Factory No. 6 in Kanawha City/Charleston, West Virginia made a full line of prescription and proprietary ware on 15-arm machines (Glass Bottle Blowers Assn. 1919). Owens Factory No. 8 in Glassboro,

New Jersey, made a prescription and proprietary line of ware (Glass Bottle Blowers Assn. 1919). So, a unique niche of the Fairmont factory appears to have been production a very wide range of proprietary and nonproprietary condiment bottles, including grape juice bottles, during the single letter code period. It is unclear when Owens started using an F on the base of bottles produced by the the Fairmont factory. However, it was likely around the last quarter of 1911, when the Owens West Virginia Bottle Co. in Fairmont was subsumed by the Owens Bottle-Machine Co. and became Owens Factory No. 3.

Before digit-dot codes were used on the bottle base, it appears that Owens may have briefly experimented with a combination of Arabic and Roman numerals on the bottle finish to indicate production year and month. We have seen three Owens F bottles which all have a backward Arabic 7 above a Roman numeral VI on the bottle finish (Figure 14). Because the earliest digit-dot code that we have seen was July 1917, and these bottles all had digit-dot codes on the base indicating production in late 1917, it seems likely that these bottle finish codes had been used to indicate bottles made in June 1917, but the engraver forgot to peen them out given their rather inconspicuous location on the finish.



Figure 14 – Backward Arabic 7 above the Roman numeral VI on the bottle finish

Owens Factory No. 3

There were 64 Owens bottles with a Square-O on the base and a factory code of 3 indicating production at the Fairmont, West Virginia, factory during the Square-O period (Figure 15). All years from 1920 to 1929 are represented. From 1920 to 1925, both the factory code and the year code were usually to the right of the Square-O (the factory code is always on the left side of the year code). On almost all Factory No. 3 bottles made from 1926 to 1929, the factory code was to the left of the Square-O with the year code to the right.



Figure 15 – Factory code 3

The range of bottle types made at Fairmont during the 1920s was similar to the distribution we saw for the earlier F bottles, including a wide variety of proprietary condiment bottles such as H.J. Heinz Co., P.J. Ritter, Curtice Brothers, Premier, Yacht Club, and Welch’s grape juice. We discovered eight different Heinz “catsup” codes including 57, 162, and 251 for catsup, 96, 111, and 184 for vinegar, 191 for chili sauce/salad dressing, and 223 for olive oil. There was also a California Fig Syrup bottle and a Dodson’s Liver Tone bottle. All of the Factory No. 3 bottles that we have seen were colorless. During the Square-O period, production of amber medicine bottles was apparently subsumed by Factory No. 8 in Glassboro, New Jersey (see section on Factory No. 8).

Virtually all of the Owens Factory No. 3 bottles had at least one heel code, and many of the condiment bottles had two heel codes, on opposite sides of the heel. For bottles with a single heel code, the code was typically a single digit or low double digit number and often associated with a single dot. It is noteworthy that these numbers ranged from 1 to 11, and all 11 numbers showed up at least once. These would appear to be mold cavity numbers. For the Owens Factory No. 3 condiment bottles with two different mold codes on opposite sides of the heel, the larger number corresponded to the mold number, and the smaller number corresponded to the mold cavity number. A majority of the nonproprietary condiment bottles with mold numbers matched those in the Owens catalog index. We found matches for bottles with mold numbers 83, 225, 376, 378, 1216, 1294, and 2590.

Owens Factory G

We have identified 24 Owens bottles with a single letter code of G, although 10 were limited to just a bottle base (Figure 16). All 14 of the intact G bottles were made for condiments, and all but one had a clearly legible mold number on the heel. However, only one of the G bottles had a mold number that matched the Owens catalog index from the Square-O period. This was an 11-ounce octagon shape catsup bottle with mold number 865. The other 13 bottles included three Yacht Club Salad Dressing, one Airship Vinegar, four champagne shape catsup, two sixteen-panel catsup, and three sauce bottles. Over 80% of the G bottles (20/24) had digit-dot codes although for several bottles it was

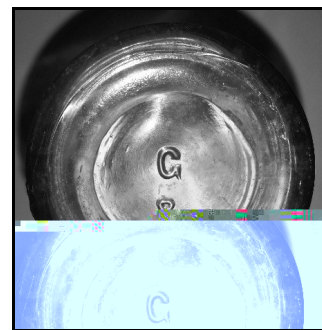


Figure 16 – G factory code

not possible to determine the exact number of dots (Figure 17). Among those G bottles for which production months could be determined, the manufacturing dates included November 1917, February 1918, April 1918, June 1918, July 1918, September 1918, and October 1918.



Figure 17 – G plus dot codes

Eighteen of the G bottles with some or all elements of the Owens digit-dot code had a second single digit or low double digit number below the G, which in some cases was a fair bit larger than the digit for the year code. Two bottles had a digit-dot code above the G but no single digit number below the G, and three G bottles had a single digit number on the base below the G but no apparent digit-dot code for year and month above the G. The numbers below the G are likely to be mold cavity numbers that correspond to the location of the mold cavity in relation to the blow head/arm unit of the Owens machine that made the bottle.

Alliteration of the Owens letter code G suggests either the Owens Greenfield, Indiana, factory or the Owens Glassboro, New Jersey, factory. For several reasons, however, the G almost certainly corresponds to Owens Factory No. 5 in Greenfield, Indiana. First, some of the G bottles had digit-dot codes indicating production in 1917. The Greenfield factory opened in May 1917; whereas, the Glassboro factory did not begin operation until about January 1918, and it was not subsumed by Owens until July 1918. Second, bottle production at the Greenfield factory was exclusively limited to catsup bottles; whereas, the Glassboro factory focused primarily on prescription ware and proprietary medicine bottles, although the plant also made some catsup bottles. None of the G bottles that we have seen were in the prescription ware or proprietary medicine categories.

Third, although the range of production dates for the G bottles was limited to November 1917 through October 1918, the Owens 12th Annual Report for the Fiscal Year ending in December 1918 (*National Glass Budget* 1920:1) underscores that at the Greenfield factory:

During January, 1919, the furnace was completely rebuilt and all equipment was thoroughly overhauled. With the exception of a few week's shut-down during the

month of December, due to the shortage of coal during the miners' strike, this plant has been in continuous operation since about February 1st.

Taken together, this indicates that the Greenfield plant was out of commission in December 1918 and January 1919, which would explain the relative paucity of bottles with production dates between October 1918 and the adoption of the Square-O as the Owens trademark in April 1919. Fourth, we have found a Yacht Club bottle produced by Factory No. 5 in 1920 that has the Square-O engraved directly over a large G of the type used on the single letter code Yacht Club bottles. Lastly, the Owens letter code of W was probably used for the new Whitney Glass Co. factory in Glassboro, New Jersey that was taken over by Owens in July 1918.

The Tenth Annual Report of the Owens Bottle-Machine Co. for the Fiscal Year ended September 30, 1917, noted that "Factory No. 5 at Greenfield, Ind., was purchased during the year and equipped with three Owens machines commencing operation in May 1917." The Eleventh Annual Report covering the period from October 1, 1917, to December 31, 1918, reported that the Greenfield factory had three Owens machines, all of which were dedicated to making catsup bottles. Although, the Greenfield plant had only three Owens machines, productive capacity was apparently substantial. In the June 9, 1917, issue of the *National Glass Budget*, a story on "Making Catsups at Greenfield" noted that two Owens machines were producing a general line of catsup bottles (the third machine may have been used for proprietary bottles or for bottles used to contain other condiments), and, according to the *Greenfield Democrat*, the plant had "a capacity of upwards of 500 gross of bottles every 24 hours," which translates to 72,000 bottles per day.

In the Owens Tenth Annual Report for the Fiscal Year Ending September 30, 1917, Greenfield was reported to have produced 7,139,520 bottles which would reflect only five months of production at most. Even if production capacity only increased modestly as manufacturing processes became more streamlined during the remainder of the first year in operation, by the end of calendar year 1917, the Greenfield factory would likely have produced at least 12 million bottles. Projected to the 1918 calendar year, we could anticipate a figure closer to 20 million bottles.

Owens Factory No. 5

We have only seen three bottles that clearly have a factory code of 5 indicating production at the Greenfield, Indiana, factory during the Square-O period. All three Factory No. 5 bottles have a year code of 0. Interestingly, one of these bottles is a Heinz 57 catsup bottle with an Owens factory code of 5 and a year code of 0 indicating production in 1920. However, the bottle base does not have a Square-O (Figure 18). There is also an octagon shape catsup bottle with a factory code of 5 and a year code of 0 on the base to the left of the Square-O, as described above. Lastly, there is a small Yacht Club sauce bottle with factory code 5 and year code 0 on the left side of the Square-O.



Figure 18 – Factory code 5

Toulouse states that “in 1921 Owens Bottle closed the plant and moved the equipment to other locations.” This is consistent with the lack of any Factory No. 5 bottles after 1920. Transfer of the catsup bottle molds to other locations may explain the subsequent appearance of catsup bottles with either an “N” or an “S” in the factory code position during 1922 and 1923, which likely indicated the American Bottle Company’s Newark, Ohio, factory and Streator, Illinois, factory, respectively. The Newark factory was about 200 miles east of Greenfield and the Streator plant was about 250 miles west.

Owens Factory H

The BRG database includes five bottles with a solitary H on the base (Figure 19). Although none of the bottles have a digit-dot code as seen for other Owens letter bottles, all of the H bottles show a characteristic Owens heel code pattern with a mold code embossed on one side of the heel and a single- or double-digit number embossed on the opposite side of the heel. Two of the bottles are octagon shaped with mold number 150. The 150 mold number is an exact match to the Owens catalog index that we have for the Square-O period.



Figure 19 – H factory code

A third bottle has mold number 588 on the heel. The 588 mold number does not appear in the Owens catalog index. However, mold number 588 is an exact match to 588 mold numbers on the heels of two identical Owens F bottles with digit-dot codes on the base and two identical Owens G bottles with digit-dot base codes. All of the bottles with 588 mold numbers have a champagne catsup shape and an 8-ounce capacity. Two of the solitary H bottles have a mold number of 1175 on the heel, a champagne catsup shape and a 10-ounce capacity. Although mold number 1175 does not appear on the Owens catalog index, the two nearest codes are both for condiment bottles (1174 = “Octagon Shape Catsup” bottle; 1179 = “Chili Sauce, Salad and Mayonnaise Dressing”). Therefore, all five solitary H bottles were almost certainly made by Owens.

To our knowledge, the letter H does not correspond to the geographic location of any Owens factory during the single letter code period. However, the Owens single letter H may indicate the Huntington, West Virginia, factory, a branch of the Charles Boldt Co. As we discussed in the section of the Encyclopedia that covers Charles Boldt, one of the company’s first business ventures was to produce a large number of catsup bottles at their Cincinnati, Ohio, plant in 1900. So, the company had experience producing catsup bottles. Most significantly, however, the Charles Boldt Co. was hit hard by prohibition because the company primarily made liquor bottles. The August 14, 1915, issue of the *National Glass Budget* underscores that economic depression and “passage by state and counties of prohibition and local option laws” rendered 10 of Charles Boldt’s 14 bottle machines idle; whereas, four machines were in operation steadily making all kinds of liquor ware (*National Glass Budget* 1915:1). So, Bolt was operating at less than 30% capacity. *Lost Huntington: The Boldt Bottle Factory* noted that

the Boldt Co. operated its Huntington plant for only four years. In 1918, Owens, who had formed the Owens Bottle Machine Co., took control of the plant and removed the Boldt name from it (*Huntington Herald-Dispatch* 2014).

The Owens Annual Report for the fiscal year ending December 31, 1918, stated that “during the past year orders in the condiment line have exceeded the manufacturing capacity of our condiment factories.” The Owens Annual Report for the 1919 fiscal year, noted that “in December, 1919, your company acquired a controlling interest in [Boldt]” and added that the plants of the Boldt Co. “will manufacture a certain class of glass containers such as condiment, fruit juice.” It is noteworthy, that Charles Boldt was one of the directors of the Owens Bottle Co.

(*Glass Worker* 1922:29), indicating that he was an Owens inside man. Given that none of the Owens H bottles have digit-dot codes, and considering that Owens did not acquire a controlling interest in the Charles Boldt Co. until December 1919, if the H bottles were made at the Huntington plant they were probably made after the Owens Bottle Co. adopted the Square-O trademark.

Owens Factory No. 2

We have identified nine Owens bottles with a Square-O on the base and a factory code of 2, indicating production at the Huntington, West Virginia, plant (Figure 20). The years represented by the Huntington Factory No. 2 bottles that we have seen are limited to 1926, 1927, 1928, and 1929. For all nine bottles, the factory code and year code are on opposite sides of the Square-O (always with the factory code on the left side). With the exception of a proprietary FLY-TOX bottle, all of the Factory No. 2 bottles were for condiments.

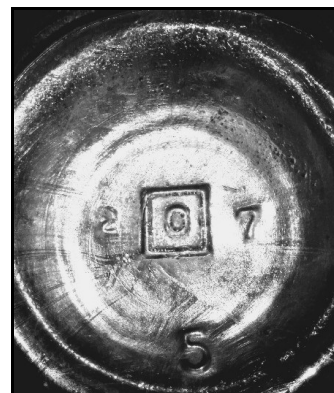


Figure 20 – Factory code 2

We found Mold numbers on the heel for six of seven Factory No. 2 bottles that could be examined for heel codes. All of the mold numbers linked to the Owens catalog index (1293, 1642, 5251, 5271). Five of the six bottles with a mold number on the heel also had a mold cavity number on the opposite heel. The exception was a 1928 bottle with a mold cavity number underneath the Square-O. There also appeared to be a mold cavity number underneath the Square-O on a 1929 bottle for which no heel codes could be seen. Additionally, there appeared to be a mold cavity number underneath the Square-O on a 1927 bottle that could not be examined for heel codes.

Since Owens had gained a controlling interest in the Boldt company by December 1919, but the earliest Huntington Factory No. 2 bottle that we have seen was not made until 1926, it is unclear when the Huntington plant of the Charles Boldt Co. became the second Owens Factory No. 2 (the original Owens Factory No. 2 was the Northwest Bottle Co., closed in October 1918). However, if the Owens H bottles were made at Huntington, they were most likely made between 1920 and 1926.

Owens Factory K

We have identified four bottles embossed with a K on the base along with an Owens digit-dot code. One is a Citrate of Magnesia bottle with a K at the center of the base, an 8 above the K, an 8 below the K, and 11 dots encircling the K. The second bottle is a four-ounce graduated oval with a K at the center of the base, an 8 just above and to the left of the K, three dots above the K beginning at twelve o'clock and moving clockwise, and an 8 below the K. A third K bottle is also a graduated oval with a K at the center of the base and an 8 below the K (Figure 21). A fourth bottle is shown in Betty Zumwalt's book on bottles used for ketchup, pickles, and sauces (Zumwalt 1980). This is an octagonal Heinz bottle. At the center of the base is Heinz code 162. There is an 8 above the Heinz code and a K encircled by 8 or 9 dots below.



Figure 21 – K factory code

The K almost certainly indicates manufacture at Owens Factory No. 6 in what is now known as Charleston, West Virginia, but was actually Kanawha City, West Virginia, at the time the factory opened. The December 16, 1916, issue of the *National Glass Budget* noted that “the Owens organization has definitely decided to erect a new bottle plant at Kanawha City, near Charleston, W. Va.” (*National Glass Budget* 1916b:5). The April 1917 issue of the *American Bottler*, noted that “the Owens Bottle Co. is building a \$2,500,000 plant at Kanawha City, W. Va. The plant which will occupy 40 acres . . . is to be equipped with 20 Owens bottle machines. It will be the largest plant of the Owens Company.” Venham (2018), noted that

in 1917, the Owens Bottle Co. opened a plant at the upper end of Kanawha City, which is now part of Charleston By the 1930s, the Kanawha City plant was the largest bottle-making factory in the world. However, production declined in the 1950s, and the factory closed its doors in 1963. The former glass factory site is now part of a shopping center.

Even after the Owens Bottle Co. had merged with the Illinois Glass Co. in 1929, Kanawha City and Charleston were still used interchangeably. In his 1937 thesis on Charleston and the Great Kanawha Valley, Cecil Anderson wrote:

The foremost bottle-making works in the Kanawha Valley is the Owens-Illinois Company at Kanawha City. Organized originally as the Owens Bottle Company, the concern was merged with the much older Illinois Glass Company in 1929 The Charleston plant is plant No. 6 of the Owens-Illinois Glass Company.

The Kanwha City/Charleston, West Virginia factory probably opened sometime in mid-to late 1917, although it may not have been fully operational until 1918. Toulouse states that “the first Charleston furnace opened in 1918” (Toulouse, *Bottle Makers*, p. 397). However, the 10th Annual Report of the Owens Bottle Machine Co. for the fiscal year ending September 30, 1917, noted that at the Charleston, West Virginia factory “but three machines have been in operation at this new plant as yet,” making “a general line of prescription ware, etc.”

Although the K bottles had no mold codes on the heel that could be used to compare with the Owens catalog index from the Square-O period, there are several other reasons why it can be concluded that these were Owens bottles, in addition to the obvious alliteration of K with Kanawha City. First, all of the K bottles that we have seen have Owens digit-dot codes on the base. Second, although our sample size is limited, the K bottles include two proprietary bottles (Citrate of Magnesia, Heinz catsup) and two prescription ware bottles (Owens Ovals), which corresponds to the bottle types produced by the Kanawha City/Charleston, West Virginia, factory. The 11th Annual Report of the Owens Bottle Machine Co. for the fiscal year ending December 31, 1918, noted that the Charleston factory made a “full line of prescription and proprietary ware.”

Third, the digit-dot codes on the K bottles all indicate production in late 1918, after the Kanawha City Owens factory had become fully operational. Fourth, the graduated ovals with a K are identical in design to the Owens Ovals produced during the Square-O period. Fifth, both graduated ovals with a K have mold cavity numbers on the lower left chamfered corner of the heel. Single- or double-digit codes in this location, with or without dots, are characteristic of the graduated Owens Ovals that we have seen from Factory No. 6 during the Square-O period. Sixth, every one of over 30 graduated Owens Ovals that we have seen from the Square-O period (1920-1929) has a factory code of 6, indicating production at the Kanawha City/Charleston factory.

Owens Factory No. 6

We have recorded information on 82 Owens bottles with a Square-O on the base and a factory code of 6 indicating production in Kanawha City/Charleston, West Virginia. All years of the Owens Square-O period are represented, from 1920 to 1929 (Figure 22). From 1920 to 1923, the position of the factory and year codes relative to the Square-O was variable. However, for nearly all Owens bottles made at Factory No. 6 from 1924 to 1929, the factory code was on the left of the Square-O, and the year code was on the right. The exceptions were a 1924 bottle which had both the factory and year codes to the right of the Square-O and seven Owens Ovals with [O]WENS at the top of the base and factory-year codes underneath. Over 40% of the Factory No. 6 Square-O bottles were Owens Ovals (graduated = 32, plain = 5). A wide range of other prescription ware and medicine bottles were represented including ball-neck panels, blakes, tablets, corn cures, fluid extracts, French squares, and decorative talcum bottles – as well as a variety of condiment bottles.



Figure 22 – Factory code 6

Owens Ovals

The BRG database includes 32 graduated Owens Ovals with a Square-O that were manufactured from 1920 to 1929. The December 1919 *Bulletin of Pharmacy* presented an Owens ad for Ovals (Figure 23). The Owens Bottle Co. received Trademark No. 166,961 for the “OWENS OVAL” with “OWENS” above “OVAL” on April 17, 1923, claiming the first use of the term on January 1, 1919. Although the firm had produced similar bottles, probably a year or so earlier, this was the first use of the name. These became the flagship prescription bottle for the Owens company and for Owens-Illinois to follow (for more information, see the section on Owens-Illinois).



Figure 23 – Owens Oval ad (*Bulletin of Pharmacy* Dec 1919)

All of the Owens Ovals have a factory code of 6 indicating that they were produced by the Owens plant in Charleston, West Virginia. Of 12 Owens Ovals dating from 1920 to 1923, all but one have both the factory code and year code embossed on either the left side or the right side of the Square-O. The single exception is a 1921 Owens Oval with the factory code of 6 on the left side of the Square-O and the year code of 1 on the right. All eight Owens Ovals produced in 1924 and 1925 have the factory code of 6 on the left side of the Square-O and the year code on the right.

Three of four 1926 Owens Ovals also show the same base mark pattern. However, one 1926 Owens Oval features an embossed [O]WENS with a square surrounding the “O” and factory-year codes that appear below the [O]WENS (Figure 24). As the same base mark pattern is present on all six of the graduated Owens Ovals that were made after 1926 (1927=3, 1928 n=2, 1929=1), it appears that Owens transitioned to the new [O]WENS manufacturer’s mark for the graduated Owens Oval sometime in 1926. All of the graduated Owens Ovals have a mold cavity number on the heel. This is usually on the left front chamfered panel immediately adjacent to where the graduation marks begin. Owens Oval bottles were produced both with and without graduations.



Figure 24 –[O]WENS base

Owens Factory N

We have found 14 bottles with an Owens scar and a single letter code of N on the base, including one that was just a bottle base (Figure 25). The combination of base codes and heel codes evident for the Owens N bottles is somewhat more complex than what we have seen for the other single letter codes. Moreover, scarring on the bottle bases is, on average, worse than we have seen for any other letter.

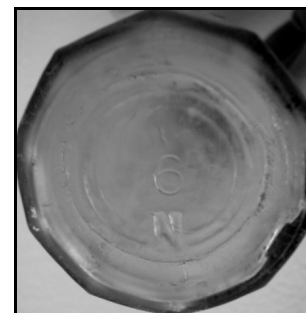


Figure 25 – N factory code (TUR)

Six of the Owens N bottles had digit-dot codes (Figure 26). Five of these showed production in 1918, and, on the sixth bottle, the digit code for year was obscured by the Owens scar. Four of the N bottles with digit-dot codes had a mold number on the heel matching the

Owens catalog index, including a 13-oz octagon shape catsup bottle with mold number 150, a 16-oz champagne shape grape juice bottle with mold number 378, an 8-oz octagon shape catsup bottle with mold number 471, and an 8-oz octagon shape catsup bottle with mold number 711. There were two 8-oz catsup bottles made in 1918 that had mold numbers of 228 on the heel. Several atypical dot patterns were seen that differed from the standard pattern of dots starting to the right of the digit code for year and moving clockwise to encircle the letter code. On the 1918 bottle with mold number 711, there were three dots that started from the top of the digit code and moved counterclockwise to encircle only the digit code. The entire digit-dot code was well above the letter code.



Figure 26 – N plus dot code

On one of the 1918 N bottles with mold number 228, the year code of 8 was well above the letter code and encircled by tiny dots so faint they could hardly be seen. The circle of dots was partially obscured by background scarring in some places. On the other 1918 N bottle with mold number 228, the upper half of the year code was obscured by the Owens scar; the circle of dots moved clockwise from the year code but ended at the middle of the N rather than encircling the N. On the catsup bottle with heel code 471, the digit code was obscured in the Owens scar, and the lower dots encircling the N were not visible.

All but one of the N bottles with digit-dot codes had a second numeric code below the N. The numeric codes included the numbers 2, 4, 8, and 10. These are clearly not year codes because the year code is included as part of the digit-dot code. Likewise, they are not factory codes because the letters were used to indicate the factory. As discussed earlier in the subsection on mold codes, they are most likely mold cavity numbers used for quality control purposes to indicate the blow head/arm that contained the mold cavity on the machine that made the bottle.

Eight of the N bottles had no apparent digit-dot codes on the base. Six of these bottles had a single digit on the base along with the N, one had two single digits next to the N, and one had a double digit and a single digit under the N. On three bottles with a 3, 3, and 5 on the base, respectively, the digit was above the N. On one bottle with an 8 on the base and on two bottles with either a 6 or a 9 on the base, orientation of the digit in relation to the N could not be determined due to symmetry. On one bottle, there were either two consecutive nines preceding the N or two consecutive sixes following the N. The digits were far enough apart that they were

clearly separate from each other. On a proprietary Yacht Club salad dressing bottle, there was a 10 below the N and a 2 below the 10. Because this bottle had a capacity of exactly 10 ounces, the “10” on the base probably indicates capacity.

Mold numbers were evident on the heels of all but one of the intact bottles without digit-dot codes. The only match with the Owens catalog index was a 16-oz champagne shape grape juice bottle with mold number 378. However, three of the bottles with no digit-dot codes were proprietary, so a match with stock mold numbers from the Owens catalog index would not have been expected. The other two bottles had heel codes of 2 and 51. These heel codes were probably very early mold numbers. It is noteworthy that one of the bottles without a digit-dot code was a 10-sided proprietary catsup bottle made for the Williams Brothers Food Products of Detroit, Michigan. Since the Williams Brothers went out of business in July 1916 (*Michigan Manufacturer and Financial Record* 1918) this bottle would have been made no later than 1916, which was before the Owens digit-dot code system appears to have been implemented.

Alliteration of the letter N suggests two possible Owens factories. One is the Owens Northwestern Ohio Bottle Co. plant, which was the first Owens Factory No. 2. The other is the Newark, Ohio, plant of the American Bottle Co., which became an Owens subsidiary in January 1916 when Owens acquired a controlling interest by way of stock absorption (*National Glass Budget* 1916:8). For a number of reasons, the Owens N bottles from the single letter code period most likely correspond to the Owens Northwestern factory.

First, the proprietary Williams Brothers catsup bottle with a factory code of N would not have been made after the Williams Brothers went out of business in July 1916, and the American Bottle Co. did not become an Owens subsidiary until January 1916. Although it is possible that Owens was able to implement an immediate change in machine molds and types of bottles produced within just months after gaining control of the American Bottle Co., this is unlikely as it was noted in the *National Glass Budget* that

the American Bottle Co. will not for the present lose its identity . . . [although] under the new regime there would not seem to be anything to prevent a changing of moulds at Newark and Streator, in the event of the lines of ware now being manufactured there becoming top heavy (*National Glass Budget* 1916:8).

Second, all of the N bottles had mold numbers under 1000. Moreover, three of the N bottles without digit-dot codes had mold numbers of 2, 51, and 55, respectively, which are the lowest Owens mold numbers we have identified on any single letter code bottles. The Owens catalog index from the Square-O period lists more than 800 mold numbers ranging from 83 to above 5000. However, only 27 mold numbers are below 1000, and only one mold number is below 100 (all of the mold numbers below 1000 are in the condiment section of the catalog index). Therefore, all of the N bottle mold numbers would appear to correspond to bottles made during the earliest years of Owens bottle production.

A third indicator that the single letter code N bottles were produced during the early Owens years is that one of the bottles without a digit-dot code, with mold number 55, was solarized to an amethyst color. The only other solarized Owens bottles in the BRG database are O bottles with mold numbers of 393 and 750, and an F bottle with a mold number of 265. Fourth, the Owens single letter codes appear to have corresponded to the name of the city where the factory was located unless there was an obvious reason why this would have caused confusion.

For example, as discussed below, a W appears to have been used for the Whitney factory in Glassboro, New Jersey, because by the time Owens took over the Whitney Glass Works, the letter G was already used by the Owens factory in Greenfield, Indiana. Because the Northwestern Ohio Bottle Co. (Factory No. 2) and the Owens experimental plant (Factory No. 1) were both located in Toledo, Ohio, a single letter code indicating geographic location would not have allowed distinction between bottles produced by the two factories. So, the first letter of each factory name (i.e., N and O) was likely used as a single letter code identifier, in lieu of using the same letter (i.e., T) to indicate the city where both factories were located.

Fifth, the bottle types produced at the Northwestern factory are consistent with the Owens single letter code N bottles; whereas, the bottles produced at the American Bottle Company's Newark factory are not. For example, Toulouse noted that the Northwestern Ohio Bottle Co. was making "vinegar, grape juice, catsup, and other narrow-neck bottles" (Toulouse 1971:394). In contrast, bottles produced by the American Bottle Company's Newark factory were limited to "beers, water bottles, malts" (Glass Bottle Blowers Assn. 1916). All of the single letter code N bottles were condiment bottles, mostly catsups.

It is unclear when Owens first used the single letter code of N. Owens gained control of the Northwestern Ohio Bottle Co. on January 1, 1908 (Scoville 1948:108). However, it was not until 1911 that the Northwestern Ohio Bottle Co. was dissolved and became Owens Factory No. 2 (Toulouse 1971:394). This suggests that the N may have been used as early as 1908 but was probably in use by at least 1911. The Owens Northwestern factory was closed in early November 1918 (Owens Annual Report 1918). During its years of operation, the Owens Northwestern Factory No. 2 made a relatively modest number of bottles annually on its two automatic machines. However, combined across the single letter code period years, production would likely have been well over 50 million bottles. Owens annual reports indicate 12,320,640, 14,203,296, 6,719,040, 4,242,240, and 10,189,584 bottles in fiscal years 1913, 1914, 1915, 1916, and 1917, respectively.

In addition to the single letter N bottles, we have also identified three bottles produced during the Square-O period that have a factory code of “N” and a digit code for year indicating production in 1922 or 1923 (Figure 27).



Figure 27 – Factory code N

In contrast to the single letter code N bottles produced by the Owens Northwestern Factory No. 2, these bottles were probably produced by the Newark, Ohio, plant of the American Bottle Co. because the Owens Northwestern factory was closed in late 1918 and because an identical pattern exists for bottles with a factory code of “S,” which probably corresponds to the Streator, Illinois, plant of the American Bottle Co. During 1921, production by the American Bottle Co. reached a nadir. In the Owens Annual Report for the fiscal year ending December 31, 1921, the company reported that:

The general slump in sales extended . . . to the glass container industry. It affected the sales of all our companies and of the American Bottle Company in particular. Its soft drink business was considerably less than of prior years and this, coupled with the entire loss of the beer bottle business, reduced operations very materially. During most of the year, the American company operated at less than one-third of its productive capacity. . . . During the summer months, however, there was a

brisk seasonal demand, due chiefly to a large catsup pack. When the requirements of the packing season had been supplied there was a falling off in orders (*Glass Worker* 1922:29).

Therefore, it is plausible that Owens used the Newark plant to address the inability of Owens core factories to meet demands for catsup bottles (see section on S bottles below). All three of the Square-O bottles with a factory code of “N” were made for catsup. One was an octagon shape catsup bottle with heel code of 1174, which matched to the Owens catalog index. The other two were proprietary catsup bottles made for H.J. Heinz and P.J. Ritter, respectively.

Owens Factory O

We have found 14 bottles with a single letter code of O on the base but without a square (Figure 28). Six of the O bottles have Owens digit-dot codes showing production from 1918 to early 1919. Four of these bottles have an Owens mold number of 393, which matches to the Owens catalog index from the Square-O period. The mold number 393 bottles have an octagon shape and a 10-ounce capacity. Digit-dot codes for three of the mold number 393 bottles indicate production in August 1918. The other mold number 393 bottle with a digit-dot code was made in 1918 and has at least four dots but the 8 and the dots are inside the Owens scar and are difficult to discern. Two of the mold number 393 bottles are preceded by a single dot. Two 16-ounce octagon shape catsup bottles with a mold number of 224 have digit-dot codes indicating production in December 1918 and March 1919, respectively. The Owens catalog index shows a mold number of 225 for an octagon shape catsup bottle. This suggests that mold number 224 had been retired by the time the catalog index was generated during the Square-O period.



Figure 28 – O factory code

All but one of the eight O bottles without apparent digit-dot codes have Owens mold numbers on the heel. Two of these bottles are octagon shaped catsup bottles with mold number 393, which matches to the Owens catalog index, as discussed above. One bottle is a champagne grape juice bottle with a mold code of 818, which also matches to the Owens catalog index.

One thing that stands out about the O bottle mold code numbers is that they are all under 1000. We saw this same pattern for the N bottles. This suggests that both the O bottles and the N bottles may disproportionately represent the early Owens years. Another indicator that the O bottles represent early Owens years is that two of the bottles without digit-dot codes have solarized to an amethyst color.

Although the letter O does not correspond to a specific city where Owens factories were located, it seems plausible that the O code was used for bottles produced by the Owens experimental factory (Factory No. 1), which was located in Toledo, Ohio. The Owens experimental factory (Factory No. 1) and Northwestern Bottle (Factory No. 2) were the first two Owens factories. Therefore, the low mold code numbers for both the O bottles and the N bottles suggests the possibility that the O indicates the Owens experimental factory, and the N indicates Northwestern Bottle. Because both factories were located in Toledo, a single letter code indicating geographic location would not have allowed distinction between bottles produced by the two factories. So, the factory name may have been used as a single letter code identifier, in lieu of factory location. Furthermore, all of the O bottles in the BRG database were found at a Michigan bottle dump, and Toledo is only a few miles from the Michigan state line.

Because Owens Factory No. 1 was referred to as the “experimental factory,” it might erroneously be considered to have been focused exclusively on research and development. However, Factory No. 1 was actively involved in bottle production from at least as far back as 1905, when it made beer bottles and soda bottles for its licensee, the American Bottle Co. (Toulouse 1971:393). In January 2006, the licensee told Owens to stop making bottles for its account (Scoville 1948:109). However, by April 1906, Owens had initiated regular production at Factory No. 1 to supply the needs of local catsup companies (Scoville 1948:109).

The Owens Annual Report for the fiscal year ending September 30, 1912, noted that Plant No. 1 was totally destroyed by fire and “in its stead a greatly improved, modern fireproof plant, equipped with two machines where but one was formerly operated was put in operation early in September and is now working to its full capacity.” In Owens fiscal year 1913 (ending September 30, 1913), the experimental factory produced 8,923,536 bottles, and, in Owens fiscal year 1914, the experimental factory made 13,680,288 bottles.

From 1915-1917, Factory No. 1 maintained an annual output of 10 million to 15 million bottles. In the Ninth Annual Report of The Owens Bottle-Machine Co., covering the 1916 fiscal year, it was noted for Factory No. 1 that “the company’s machine designing department, construction department and principal mold department are located at this plant . . . [the factory includes] two machines, operated in the manufacture of catsup bottles, gallon packers and siphons.” A majority of the bottles produced by Factory No. 1 were probably catsup bottles given their smaller size compared with gallon packers.

Owens Factory No. 1

To our knowledge, an Owens bottle with a factory code of 1 has not previously been reported. However, we have recently identified two bottles with factory-year codes indicating production at Factory No. 1 in 1920 and 1921, respectively (Figure 29). The 1920 bottle is an 8-oz octagon shape catsup with both the factory code and the year code to the left of the Square-O. The bottle base is fairly striking because not only is it a ghost-9 with dots but the Square-O appears to have been etched over the original letter code of O, which was considerably smaller. It is unclear why the original O was insufficient. However, the square appears to have been used to cover up the 9 and cover the dots (just inside the square at two o’clock and three o’clock, and just above the square at twelve o’clock). So, the original O may have been too small relative to the size of the square.



Figure 29 – Factory code 1

The 1921 bottle is a Heinz vinegar bottle. The 1 for factory code and the 1 for year code are both upside down and to the left of the Square-O. We originally missed this because part of the outermost 1 disappears into the dot that follows CO in HEINZ CO. It is possible that a disproportionate number of Owens Factory No. 1 bottles are incorrectly identified because, compared with other single digit numbers, the number 1 can more easily become obscured in the background scarring and other defects characteristic of early machine made bottles. At best, the number 1 shows up to the naked eye as little more than a simple short line, even if a serif is used.

Owens Factory S

The BRG database includes five bottles with a single letter code of S at the center of the base, all of which have Owens digit-dot codes indicating the production year and month (Figure 30). Two of the Owens S bottles are 16-ounce champagne catsups with continuous thread finishes and heel codes of 2. Digit-dot codes show that one of these was made in September 1917, and the other was made in October 1917. The October 1917 bottle has a “6” below the S in addition to the digit-dot code above the S. A third Owens S bottle was round and had digit-dot codes showing manufacture in September 1917. There was a heel code of 2 and a “5” below the S on the base. There are also two bottle bases with an S at the center of the base and Owens digit-dot codes indicating that they were made in August 1917 and September 1917, respectively. On the latter bottle base there is a “24” below the S.



Figure 30 – S plus dot code

The Owens “S” most likely corresponds to the Streator, Illinois, plant of the American Bottle Co., which became an Owens subsidiary in January 1916, when Owens acquired a controlling interest by way of stock absorption. At that time, the *National Glass Budget* (1916:8) noted that

while it is stated that the American Bottle Co. will not for the present lose its identity, it is apparent that factory operations will hereafter be dominated from Toledo under the new regime there would not seem to be anything to prevent a changing of moulds at Newark and Streator, in the event of the lines of ware now being manufactured there becoming top heavy, and because of this fact, it is quite probable that the factories involved in this transaction will not lose as much time in the future as has been the case latterly.

Although the American Bottle Co. typically operated independently of Owens, there are two major reasons why the Streator plant would have been used to make bottles for the core group of Owens Bottle Machine Co. factories. First, bottle production at the Streator plant was limited to beers, sodas, malts, and water bottles (11th Annual Report of the Owens Bottle

Machine Co.), and the factory was not operating at full capacity due to the decline in demand for beer bottles as a result of Prohibition. The 11th Annual Report of the Owens Bottle Machine Co. for the fiscal year covering October 1917 through December 1918, stated that “the American Bottle Co.’s operations have been curtailed, and some additional curtailment must be expected from the enforcement of prohibition.”

Second, the core group of Owens factories was unable to meet demands for condiment bottles. The 11th Annual Report of the Owens Bottle Machine Co. stated that “during the past year orders in the condiment line have exceeded the manufacturing capacity of our condiment factories.” Because the two Owens S bottles for which complete information is available are both champagne shape catsup bottles, the Streator plant of the American Bottle Co., which was operating at less than full capacity due to reduced demand for beer bottles resulting from Prohibition, was likely used to assist the core group of Owens factories which were unable to meet demands for condiment bottles.

Even if the cost of exchanging molds might otherwise have been considered prohibitive, this might have been temporarily cost effective for Owens. Furthermore, Owens went on the New York Stock Exchange in July 1916, and the company was beholden to its stockholders. Additionally, although our sample size is small, it is noteworthy that the production date range for Owens single letter S bottles is limited to the period from August 1917 to October 1917. This suggests that Streator was only used temporarily to help Owens meet the demand for condiment bottles.

In addition to the single letter code S bottles produced in 1917, we have also identified several bottles manufactured during the Square-O period that have a factory code of “S” and a digit code for year indicating production in 1922, 1923, and 1924 (Figure 31). This “S” likely also corresponds to the Streator plant of the American Bottle Co. As discussed above in the section on Factory N, the overall production of bottles by the American Bottle Co. reached a nadir in 1921; whereas, the core Owens factories continued to experience a brisk demand for condiment bottles, particularly catsup bottles. All seven Square-O bottles with a factory code of “S” were made for catsup.



Figure 31 – Factory Code S

Owens Factory W

We have identified five Owens bottles with a factory letter code of W on the base, two of which were limited to the base itself (Figure 32). None of the three intact W bottles had a mold number on the heel. However, all of the W bottles had Owens digit-dot codes on the base. Production dates ranged from June 1918 to December 1918. As seen for other Owens letter code bottles, the digit-dot codes are above the factory letter. Below the factory letter are single digit numbers that are likely mold cavity numbers. All three of the intact Owens W bottles were medicine bottles; two of these were proprietary.



Figure 32 – W plus dot code

Based on alliteration of W, the most logical correspondence for an Owens factory is the Whitney Glass Works in Glassboro, New Jersey. Additionally, all three bottles for which type could be ascertained were medicine bottles, which is consistent with the bottle types produced at Whitney. The Eleventh Annual Report noted that “the balance of the capital stock of the Whitney Glass Works has been acquired by the company on July 1, 1918. That company’s property and assets were merged with those of the Owens company and the Whitney company was dissolved.” The report also noted that during the 15-month period covered by the report (October 1, 1917 to December 31, 1918), a new Whitney factory had been constructed that was devoted to the manufacture of prescription ware and proprietary medicine containers. The original Whitney factory was closed in late October 1919 (*National Glass Budget* 1920).

Owens Factory No. 8

Of 33 bottles that we have identified with Owens factory code 8, 39% (13/33) are amber, and 30% (10/33) are aqua (one was described as amethyst and blue). Factory No. 8 appears to have consistently placed the factory code to the left of the Square-O and the year code to the right (Figure 33). Every production year during the 1920-1929 Square-O period is represented except for 1927 and 1929. A tremendous diversity of bottle types was made by Owens Factory

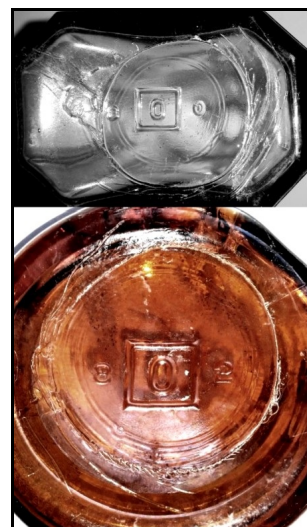


Figure 33 – Factory 8 bottle

No. 8. Proprietary medicine bottles include Richard Hudnut perfume/cosmetics, Wyeth, Merck - Arsenic Trioxide, Frostilla Lotion, Wakefield's Blackberry Balsam, Lysol, Dr. D. Jayne's Expectorant, Hoff's Liniment, Bell-Ans, and Dr. Thompson's Eye Water. Nonproprietary bottles include blakes, homeopathic vials, iodine bottles, packer jars, taper oval perfume bottles, narrow mouth and wide mouth round and oval medicine bottles, rectangular panels and a club sauce bottle.

Discussion and Conclusions¹

Because this was the initial in-depth study of many of these marks and codes, it was – of necessity – detailed. As explained above, the Owens firms used a bewilderingly complex series of embossings on the bases and heels of its bottles to identify itself as the manufacturer as well as to leave a method for tracking the factory, date of manufacture, specific mold, and cavity that made the individual bottle. Essentially, however, the logos, codes, and marks used by the Owens Bottle Machine Co. (1903-1919) and the Owens Bottle Co. (1919-1929) may be reduced to five periods.

Period 1

During the initial period, the Owens Bottle Machine Co. used no company logo, no factory identification, and no date code that we have discovered. The only method to distinguish Owens bottles from those of any other machine is by the distinctive Owens basal scar. Since Owens licensed other glass houses to use its machines, however, the scars are not confined to the Owens firm. But, Owens only issued exclusive licenses for specific bottle types, so bottles such as milk, beer, or soda containers with Owens scars could not have been made by the Owens company.

Moreover, each of the Owens licensees generally used unique logos and/or codes to identify their own products. For example, Owens licensed the Illinois Glass Co. to produce prescription bottles and liquor bottles – both types of containers also made by Owens – but Illinois Glass marked its products with its well-know Diamond-I logo or a diamond encasing a

¹ Unfortunately, the author's files for this study were lost, so this Discussion and Conclusion section was written by the editor.

two-or three-digit number. While the lack of a glass house logo on a bottle with an Owens scar is not a guarantee of a bottle made by Owens, it therefore increases the likelihood. Unfortunately, there is no absolute method for identifying Owens bottles during this early period.

Nor is there any certainty about its end – although we are more sure about the beginning date. Michael Owens patented his machine in 1903, and the Owens firm began commercial bottle production by at least 1904, turning out bottles for the Ohio Bottle Co. at the “experimental” plant in Toledo. However, since the Owens factories were not using date codes initially, we have no certainty about the year when the firm first began to emboss factory initials on bottle bases. If our hypothesis for the begging of factory initials is correct (see below), this initial period with no logos ended ca. 1911. See Table 1 for a chronology of the marks and codes used during the five periods.

Table 1 – Chronology of Logos used by Owens Firms

Dating Style	Firm	Dates
No logo	Owens Bottle Machine Co.	1905-ca. 1911
Single-Letter Codes	Owens Bottle Machine Co.	ca. 1911-June 1917
Digit-Dot Single-Letter Codes	Owens Bottle Machine Co.	July 1917-April 1919
Square-O without date code	Owens Bottle Co.	April 1919-December 1919
Square-O with date/plant code	Owens Bottle Co.	1920-1929

Period 2

As noted in the text (above), the Owens company’s use of manufacturer’s marks probably began to comply with Curtice Bros. catsup bottle requirements. Although we have found no documentary support, many Curtice Bros. catsup bottles were embossed with the *only* examples of manufacturer’s marks from glass houses that otherwise used no logos. Our logical inference was that the Curtice Bros. imposed the requirement for a mark upon the glass houses that produced their bottles beginning sometime during the late 1890s or early 1900s.

In our sample, Owens logos on Cutice Bros. bottles were restricted to F, F with dots, and Square-O with factory codes of 3 – all made at the Fairmont, West Virginia, factory. Since the Fairmont plant began production in 1910 and was entirely subsumed by the Owens Bottle Machine Co. a year later, a date of ca. 1911 is a reasonable beginning for the use of the “F” factory code by the Fairmont plant – and logically the first use of the initials as factory codes by Owens – simultaneously becoming an end date for the first period (with no logos).

Table 2 – Single Letter Basemarks – Owens Bottle Machine Co.

L*	City, State	Factory Name	Letter Dates	Digit-Dot Dates
C	Clarksburg, WV	Eastern Owens Bottle Machine Co.	1914-1917	December 1917- January 1919
F	Fairmont, WV	Owens West Virginia Bottle Co.	poss. 1911-1917	July 1917 to April 1919
G	Greenfield, IN		1917	November 1917- October 1918
H	Huntington, WV	former Charles Boldt Co.	1920-1926	
K	Kanawha City, WV [Charleston]			March-November 1918
N	Toledo, OH	Northwestern Ohio Bottle Co.	poss. 1908; certainly 1911-1918	1918
O	Toledo, OH	Owens Experimental Factory	poss. 1911-1917	August 1918- December 1918
S	Streator, IL	American Bottle Co.		August-October 1917
W	Glassboro, NJ	Whitney Glass Works		June-December 1918

* Single Letter Basemark

Although we lack documentation showing the date that the Fairmont plant received its initial order from the Curtice Bros., it would logically have been early in the history of the plant. In addition, this would have been about the time that Owens stopped issuing exclusive licenses to other glass houses – thus desiring a method to track its own bottles. The end of the second

period, however, is easy to trace because it coincides with the month before the Owens firm's initial use of date and month codes – or June 1917.

Period 3

In July 1917, the Owens Bottle Machine Co. adopted a complex dating system, wrapped around the factory letter codes. Each plant embossed the last digit of the year of manufacture, usually above the factory letter code, then added a dot for each month of production. For example, a bottle made at the Fairmont plant on August 1917 would have a central initial of “F” with a “7” above it and an arc of six dots arranged clockwise from the “7.” The dots usually formed a clockwise arc that eventually created a circle for the final month 12 (December). Owens discontinued the system in April of 1919 – probably because making monthly changes in the baseplate of each mold used during that 30-day period required more effort than it was worth – coinciding with adoption of the new Square-O logo. See Table 2 for a chronology of the single letter basemarks and digit dot codes.

Period 4

The fourth period was a short transitional time, beginning with the adoption of the Square-O logo by the recently formed Owens Bottle Co. in April of 1919. Initially, the plants used the baseplates from the old molds, peening out the factory letter codes, numbers (9), and dots – before engraving the Square-O atop the central figures. The bases from new molds, of course, lacked the ghosted “9” and dots. The transition ended about December of 1919 – although it could have extended into early 1920 – the year Owens adopted a new code system.

Period 5

The final period began at some point during 1920, when the Owens plants adopted a new code system. The system used two digits, the left to indicate the factory, the right for the last number of the year of manufacture. Thus, a code of 36 would indicate Factory No. 3 (Fairmont) and a production in 1926. Although the shift was *very* inconsistent between plants, typically, both codes would be found on one side of the Square-O (generally the right), later shifting to one digit on each side of the Square-O (plant to the left, date to the right). This method continued in use until the merger with the Illinois Glass Co. that created the Owens-Illinois Glass Co., and the

new firm continued to use the same code system – plant to the left of the new mark (a combination of the logos from Illinois Glass and Owens Bottle) and the date to the right. See Table 3 for a list of plant numbers and dates of use for the codes.

Table 3 – Owens Bottle Co. Plant Codes with Square-O Logos

No	City, State	Factory Name	Dates
1	Toledo, OH	Owens Experimental Factory	1920-1921
2	Huntington, WV	former Charles Boldt Co.	1926-1929
3	Fairmont, WV	Owens West Virginia Bottle Co.	1920-1929
4	Clarksburg, WV	Eastern Owens Bottle Machine Co.	1920-1924
5	Greenfield, IN		1920
6	Kanawha City [Charleston]		1920-1929
7	Glassboro, NJ	Old Whitney Glass Works*	1919
8	Glassboro, NJ	Whitney Glass Works	1920-1928
N	Newark, OH	American Bottle Co.	1922-1923
S	Streator, IL	American Bottle Co.	1922-1924

* Owens closed the Whitney No. 1 plant before the numbering system was in use. Any bottles would have had the Square-O logo with no plant code.

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