

CAPACITY MEASURES OF THE BRITISH ISLES

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The Collector's Interest

Measuring capacity is not difficult although interpreting the results can be a problem. We should measure all old vessels for the eye alone cannot easily distinguish what measurement may reveal. Differences in proportions can mask both over- and under-capacity, and result in historically interesting items passing unnoticed. Note that having an 'unusual' capacity does not automatically place the object earlier than c1826 as many local and customary measures continued to be used regionally during most of the 19th Century. They give interest through their mute testimony to the strength of regional and local preferences and the tenacity of both the trade and the public in continuing to use them. Thankfully from our viewpoint they frustrated Parliament's intentions, which legislated for their removal in the 1835 Act 5 & 6 Will IV c63.

Measuring is so easy if you have a pair of electronic scales that can be 'zeroed' while a vessel is on them. Put the measure on the scales, measure its weight in grams, then zero, fill to the brim with water, and the weight represents the capacity in millilitres, or divide by 28.413 if you prefer fluid ounces.

Local and Customary Measures Continued to be Used after 1825

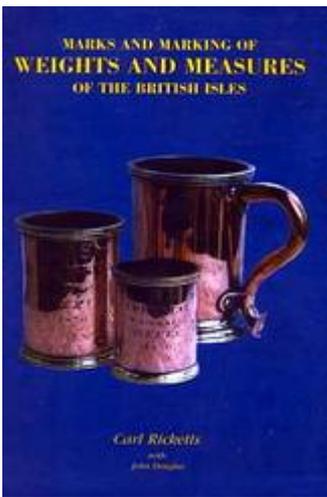
The 1824 Act Geo IV c74 which introduced Imperial Standard did not make it illegal to continue using previous capacity standards. This was done because throughout the British Isles a considerable range of legal and customary measures had gained widespread acceptance over many centuries. To have required all measures to be replaced at once would have caused significant economic hardship and met with massive opposition. Section XVI of the 1824 Act provided that:

"it shall and may be lawful for any person or persons to buy and sell Goods and Merchandise by any weights or measures established by local customs, or founded on special agreement; provided the ratio of proportion which such customary measures or weights shall bear to the said weights and measures shall be painted or marked upon all such customary weights and measures respectively."

Capacity Marks on Vessels with Pre-Imperial Capacities

Marks in the form of words or numerical proportions are occasionally found engraved, scratched or punched on vessels, and painted examples may exist. These are not verification marks although in rare cases they are accompanied by a crown. Figure 1 shows various marks used after 1826 in compliance with Section XVI of the 1824 Act some of which may also contain a reference to Imperial Standard (IS) or the Imperial Gallon (IG). Most are uncommon although those in the centre column (and their variants) are sometimes found on Scots vessels from the first third of the 19th Century.

Fig. 1 EXAMPLES OF MARKS INDICATING PRE-IMPERIAL CAPACITY

Old English Ale Standard		Scots Standards		Old English Wine Standard	
 <p>A rare mark on a mug c1790 by William Banks of Bewdley to show it was of Old English Ale Standard capacity.</p>		<p>4 5 I S</p> <p>Scots Ale</p>	<p>3 I G 4</p> <p>Scots Stirling</p>	<p>WINE</p>	<p>5 6 I S</p>
					
<p>Other examples of relationship marks engraved on pewter vessels:</p>					
<p>1/40 IG</p> <p>Scots Ale Gill (4.0 fl.oz)</p>		<p>"1/42nd of an Imperial Gallon"</p> <p>Scots Stirling Gill (3.8 fl.oz)</p>		<p>"One Sixth less than an Imperial Pint"</p> <p>Wine Pint (16.7 fl.oz)</p>	
					
<p><i>"Warranted Winchester Measure"</i></p> <p>On pearlware mug (19.5 fl oz Winchester Measure) dating from last quarter of the 18th Century</p>					

The Imperial Gallon and its Legal Aliquots and Multiples

The 1824 Act defined the volumetric system for all dry (unheaped) and liquid measurements to be a gallon whose volume was that occupied by 10 pounds of distilled water weighed in air at 62° F and a barometric pressure of 30"; this equalled 277.42 cubic inches or 160 fluid ounces. The Act should have come into force on 1 May 1825, but by the 1825 Act 6 Geo IV c12 was delayed until 1 January 1826 to help alleviate problems in obtaining sets of the new standards. Binary derivatives of the Imperial Gallon were legalised and Primary Standards constructed for them. From 1825 until c1870 these were the only legal measures for which a full set of Local Standards comprised the 10 different capacities shown in Table 1.

Reports about the prevalent use of other derivatives of the gallon appear in various Parliamentary papers during the 19th century including the Reports of the Standards Commission (May 1868 to August 1870) and who were instrumental in extending the number of legal measures of capacity to include 4, 2 and 1 fluid avoirdupois ounces; 1/6 and 1/12 gallon as measures of the wine bottle and half wine bottle; and the Quarter Gill.

Table 1 LEGAL MEASURES from 1825-1870

Liquid Measures	Dry Measures	Capacity (in ³)
	Bushel	2219.4
4 Gallons	$\frac{1}{2}$ Bushel	1109.7
2 Gallons	Peck	554.8
1 Gallon	$\frac{1}{2}$ Peck or Gallon	277.4
$\frac{1}{2}$ Gallon	$\frac{1}{4}$ Peck or $\frac{1}{2}$ Gallon	138.7
Quart	Quart	69.4
Pint	Pint	34.7
$\frac{1}{2}$ Pint	$\frac{1}{2}$ Pint	17.4
Gill	$\frac{1}{4}$ Pint	8.7
$\frac{1}{2}$ Gill		4.3

The 'Reputed Quart' or Wine Bottle Measure

The 'Reputed Quart' is a misnomer for an ancient capacity of about 26.6-26.7 fl oz. The 1803 Act Geo III c68 refers to about five wine bottles making a gallon, which would be Queen Anne's wine gallon of which one-fifth would be about 26.64 fl oz. When Imperial measure was introduced the 'reputed quart' did not have to change except in definition, as 1/6th of an Imperial gallon is virtually the same capacity (26.67 fl oz). USA capacity measures are still based on Queen Anne's wine gallon,

their standard liquor bottle is known as a 'fifth', and contains four-fifths of a US quart, which confirms its relationship to Old English Wine Standard.

'Bottle' measures as such existed legally only from c1870 until abolished by the Weights and Measures Act, 1878. It has been suggested these measures were used only in Scotland probably because examples stamped "BOTTLE" or "HALF BOTTLE" originate there. Board of Trade records show that standards of the Bottle and Half Bottle were verified only for the Cities of Edinburgh ^{2 sets in 1872 and 1873: Indenture numbers 1425 and 1426} and Glasgow ^{1 set in 1872: Indenture number 923}. In fact they were more widely used in the U.K so, for example, such measures used in the Bristol area were often stamped "1/3 QUART" and "2/3 QUART". Others of similar capacity are known of which some are probably pre-Imperial, although not always marked for capacity. Variants include "1/3 BOTTLE", and small mugs of 6.7 fl oz (1/3 Imperial pint or quarter bottle). Many of these smaller mugs were 'christening' presents, are usually initialled, and sometimes dated. They are found with various capacities ranging from about 4.0 up to 6.7 fl oz all of which can be equated to pre-Imperial and Imperial capacity standards. A few have verification marks suggesting their use as measures. It is known that our ancestors favoured many strange 'brews' including 'cocktails' made from gin and different forms of beer. A smaller mug of those heady mixtures may have been a sufficient quantity for modest or polite consumption ^{"Betty and Purl Pots" Carl Ricketts - JPS Autumn 1992}.

It is interesting to note the discovery of Jersey pewter jug measures with a capacity of about 26.5 fl oz; one being scratch engraved "1½ Pints", which may be the Jersey form of wine bottle ^{measure A O Henkemans JPS Autumn 1988 & G J C Bois JPS Autumn 1993}. Information about 'pre-Imperial' Channel Islands capacities is given later.

Fig. 2 Bottle measures	
	
	
Bottle measure by J Moyes, Edinburgh	Half-bottle measure & its capacity label

History of Statutory Measures

Physical 'standards' were constructed and used in the British Isles for several centuries before those of Henry VII's 1497 issue which are now the earliest surviving examples. In England until the 13th Century the means of fixing standard measures was to declare a particular vessel to be the 'standard' and then to make and circulate copies to the principal towns. Thus the vessel's actual capacity was somewhat irrelevant; and practically this overcame the difficulty of constructing physical standards to an exact specification. As early as 1197 the Act 8 Richard I known as the Assize of Measures had stated:

"The law is that all the measures throughout England shall be of the same size, as for corn so for beans and similar things Likewise the measures for wine and ale and all other liquids shall be of the same size"

The first known attempt to define exactly the size of the dry measure (bushel) and liquid measure (gallon) took place only 50 years after Magna Carta in the Tractatus de Ponderibus et Mensuris (Assize of Weights and Measures). For over 500 years until 1824, the general practice with measures of capacity was to equate the volume of dry and liquid measures to a stated weight of a given commodity such as wheat or wine. The sophistications of ambient pressure and temperature were either not considered or felt to have minimal impact on the likely metrological errors. Any subsequent confusion is due to two main reasons. There were many attempts to draft law which was unambiguous, and looking retrospectively it is confusing as to whether it was intended to have one common capacity system for dry and liquid measure (or two as appears to be the case from extant standards). In relation to measurement the principal difficulties arise from two sources: firstly, the weight system being used to measure the chosen commodity; and secondly, in the case of dry measure volumes whether they were being measured 'heaped' or 'stricken'.

Local and Customary Measures of Liquid Capacity

It is possible to identify several different gallons which were in use at various times in all or parts of the U.K as well as separate capacity measures for Ireland, Scotland and the Channel Islands. This is not an academic exercise as most of these capacity systems appear to have been used at some time for liquid measures - even when they were clearly intended originally to be dry measures. Drinking vessels provide considerable evidence to suggest that for whatever reason it was our forebears practice to use non-conventional aliquots of statutory gallons which after 1835 should not have been legal. For example, 'Three-quarters of a Pint' (or '3 Gills') which if based on Queen Anne's Wine Standard gives a capacity of 12.5 fl oz. Several examples of these are known as well as other sizes from the same binary system derived probably from a starting point of 'Three Quarts' or 'One and a Half Pints' rather than the gallon. The intention in 1835 of achieving abolition of the former capacity systems did not occur in relation to drinking vessels examples of which continued to be made in customary capacities. They would not have been verified by Inspectors as they did not conform to the statutory aliquots and would only have been seized and destroyed if found being used as measures.

For example, when James Jardine gave evidence to the 1834 Select Committee on Weights and Measures he had extensive knowledge of current practice in many parts of Scotland as he had been engaged by the counties of Berwick, Dumfries, Edinburgh, Haddington, and Linlithgow to ascertain the relation of the pre-Imperial measures to the Imperial.

- **Do you know whether there has been any new weight or measure of the old standard made since the passing of the Act?**
"I think there has; the people now consider the present Acts of Parliament are not compulsory, and therefore that they can use such weights and measures as they choose."
- **Do they get marked upon them the comparative value between that and the imperial standard?**
"At first some of them were so marked, but the practice soon fell into disuse"
- **They do not go near the standard?**
"They do not think that they are obliged to do so, and therefore save both the trouble and expense."
- **Are the weights and measures now used in Scotland all legal?**
"They are not all legal"

Fig. 3 SOME LOCAL & CUSTOMARY CAPACITIES

	
<p>12.5 fl oz mug by William Eddon dated '1748'</p>	<p>27 fl oz mug by John Harrison, York c1750</p>
	
<p>30 fl oz mug by Edward Westhead, Wigan c1770</p>	<p>7.7 fl oz Scottish mug (half-mutchkin)</p>

Hopefully, this and later information will give an added dimension of interest to the study of measures and mugs. Sufficient accuracy can be achieved using simple measuring cylinders to allow comparison of vessels to the various British capacity standards which will help to date and narrow down their origins. This in turn may assist with the identification of any verification or other marks found on the vessels.

Use of Pre-Imperial Standards after 1826

An 1835 survey elicited replies from several local authorities who had not and never subsequently obtained copies of Imperial standards. They may have continued to exercise weights and measures functions using their pre-Imperial standards. Later Parliamentary Papers note that a few authorities which had Imperial standards were still sending pre-Imperial standards for re-verification. The diligence of 'Inspectors' should also have been influential in the elimination of non-Imperial measures but the law effectively allowed the continued use of vessels of virtually any capacity providing they were marked to show their relationship to Imperial standard. Many Inspectors were confused or at least uncertain about both the intentions of the law and their own authority to act. This hesitancy was in part due to the limited information given to Inspectors by their employing authorities about their duties and the current law of which many were rather ignorant. The problem was compounded by the somewhat cavalier approach to examination and verification stamping adopted in some places from 1826. Finding a weight or measure already stamped must have led to a busy Examiner not bothering to compare it again. Many 'Inspectors' understood the law to apply only to Imperial measures so did not compare local or customary measures.

Old British Capacity Measures

These fell into three main categories: Ale, Corn, and Wine Gallons for which physical standards had been produced and distributed by Royal instruction from at least the end of the 15th Century. Pewter measures from Tudor times and possibly earlier with capacities equating to these ancient gallons are still being excavated from land, river and marine sites including shipwrecks. In addition, evidence suggests that in certain parts of the country it was local practice to continue using what were believed to be redundant capacity systems. Although other standards had previously been used in England and Wales the capacities of the earlier Ale and Corn Gallons varied only slightly from those listed. There were several versions of the Wine Gallon with a wide range of capacities from c100 fl oz (12½ fl oz 'pint') up to c144 fl oz (18 fl oz 'pint'). Physical standards for some of these have survived including the (City of London) Guildhall Gallon of c129 fl oz (c16 fl oz 'pint') and Renolds Pottle whose gallon equivalent would be c144 fl oz. Familiarity with and preference for these pre-Imperial standards ensured that many of these local and customary measures continued in use (albeit illegally if used in the course of trade) for much of the 19th Century. This provides a clue about the origin of such vessels when they are found with maker's marks of pewterers and coppersmiths who only worked in the Imperial period. Allowing for tolerable errors both during their manufacture and current measurement there is remarkable consistency in the replication of the capacities of measures and drinking vessels based on aliquots of these old standards. This means that if one measures the capacity of, say an early 19th Century Wigan-made mug, its capacity will hardly vary from another of the same size. This is mentioned because it appears from many such vessels made in the North of England that it was commonplace for them to have what at first sight appear to be anomalous capacities. Encountering a single example could lead to the conclusion that it had been made for a purpose not connected with any need to hold a given capacity. Similarly, pre-Imperial mugs from Newcastle-upon-Tyne also occur in a wide range of capacities. Further explanation is given later under "Anomalous Capacities Customarily Used Locally".

Table 2 PRE-IMPERIAL CAPACITY STANDARDS

	Cubic Inches	Fluid Ounces
Used in England and Wales		
❑ Old English Ale Gallon (1700 Act 11 Will III c15)	c282	c162
❑ Winchester or Corn Gallon (1697 Act 8 & 9 Will III c22)	c272	c157
❑ Old English Wine Gallon (1706 Act 5 Anne c27)	c231	c133
Used in Ireland		
❑ Irish Gallon (1495 Irish Act 10 Hen VII c22 confirmed by 1736 Act Geo II c9)	c217	c125
Used in Scotland		
❑ Scots Ale Pint (from an 18th Century Glasgow Standard)	c111	c64
❑ Stirling Jug or Scots Wine Pint (defined in 1618 Scots Act)	c105	c60
Used in Channel Islands		
❑ Jersey Pot (1/10th Cabot - 16th Century Jersey Standard)	c121	c70
❑ Guernsey Gallon - (App. A: 2nd Report Weights & Measures Commission 1819)	c252	c145

BRITISH CAPACITY STANDARDS & THEIR ALIQUOT MEASURES

The 18 fluid ounce Pint

We have numerous examples of vessels with capacities of or derived from an 18 fl oz pint, including pewter baluster measures and mugs from the 17th century to the first decade of the 19th century and late 18th Century onwards copper and silver plated vessels. Many of the pewter ones are marked by known makers from Birmingham, Newcastle-upon-Tyne and Warrington. The University of Cambridge has a c125 cubic inches capacity wine measure engraved: "A Wine Pottle Tryed by John Renolds at the Tower. 1641" (Gallon equivalent: c250 cubic inches). The 1819 Report of the Weights and Measures Commission refers to a Guernsey gallon of equivalent capacity (c252 cubic inches) which is interesting as it gives further evidence for the widespread distribution of this capacity system.

Third of a Gallon

Another capacity system in use from at least the 17th Century may derive from one-third of a gallon of which the best known example was the Thurdendel. This was referred to by John Powell in his 1671 book: "The Assize of Bread and Ale" which gave instructions to innholders and victuallers as if backed by the force of law. As no such legislative provisions have been found, possibly the requirements only applied in the London area and were made by the City Corporation. As well as referring to 'hooped quart and pint measures' Powell mentions 'thurdendels and half-thurdendels' and says:

*"being a small quantity somewhat bigger than the aforesaid standard,
in respect of the working and ascending of the Yeast and Froth"*

This would ensure customers got full measure by making the vessel large enough to accommodate the 'head'. A number of verified 17th century lidless drinking vessels contain about 10% over-capacity which coincidentally gives an 'ale quart' whose capacity is one-third of a wine gallon (c44 to 45 fl oz). After 1700, the capacities of verified drinking vessels normally conform closely to Old English Ale Standard. The preference for capacities of this kind was confirmed in 1870 with the introduction of new legal standards of one-sixth (Bottle) and one-twelfth (Half-Bottle) of an Imperial Gallon.

Jersey Capacity Standards

The Island's primary measure of capacity, the Cabot, was legalised by Acts of the Royal Court of Jersey in 1593, 1617 and 1625, and later confirmed by the Sovereign in Council in 1717. From as early as 1625, the Cabot equalled 10 Jersey Pots, although the Jersey Quart (one-twentieth Cabot) was subsequently confirmed as the actual standard for liquid capacity in Jersey Regulations of 1754 and the Law of 1771. The ancient brass standard measure of the Cabot still exists and is illustrated Pewter of the Channel Islands by SC Woolmer and CH Arkwright - John Bartholomew 1973. Avery and Sons measured it in 1912 and gave its capacity as 694 fl oz (19718 ml). The Jersey Pot, Quart and other smaller measures make up an extensive binary series. A suggestion that the Jersey Standard was in use only up to c1827 is not confirmed, and probably arose from a misunderstanding of the requirements and applicability of British Parliamentary legislation. Jersey as a virtually autonomous 'Bailiwick' could not have been required to adopt Imperial Standards although it had the ability to choose to do so. As the first copies of the Imperial Standards for the Island were not verified at the Exchequer until 23 April 1844 Indenture Number 922 it is unlikely their use as local standards took place previously. In the late 1860s it was reported that the then High Sheriff and his sub-Inspector also had in their custody "Jersey measures of a pot, pint, half-pint, noggin, and half-noggin, inexact and of modern make". An Order in Council of 19 July 1918 approved a Jersey weights and measures law that came into force 1 January 1919, and prohibited the use of all weights, scales and other weighing machines and all liquid measures other than those established and recognised by English laws. Similar Orders in Council were made in 1916 for Guernsey and 1918 for Alderney. Woolmer and Arkwright (ibid) studied the measured capacities of Channel Islands measures, which appear to have a wider range of tolerance than would have been permitted in mainland Britain. Strictly on the basis of the Cabot Standard the full range of pre-Imperial sizes should be as follows:

Capacity	Pot	Quart	Pint	Half-Pint	Noggin	Half-Noggin
Fluid Ounces	69.5	34.75	17.4	8.7	4.3	2.2
Millilitres	1974.7	987.4	493.7	246.8	123.4	61.7

Anomalous Capacities Customarily Used Locally

The object of weights and measures legislation is to enforce uniformity and to prevent deceit by traders. Throughout the 19th Century the various Acts did not apply to sales of articles which, though capable of being sold by weight or measure, were not in fact so sold. In prohibiting sales by weight or measure other than Imperial standard; the Acts did not prevent sales otherwise than by weight or measure. For example, Section 19 of the Weights and Measures Act, 1878 (41 & 42 Vict c49) dealt with 'Sales' and said:

"No local or customary measure, nor the use of the heaped measure, shall be lawful"

Section 22 of the same Act gave an Exception to this:

"Nothing in this Act shall prevent the sale, or subject a person to a fine for the sale, of an article in any vessel where such vessel is not represented as containing any amount of imperial measure, nor subject a person to a fine under this Act for the possession of a vessel where it is shown that such a vessel is not used nor intended for use as a measure"

Such provisions effectively allowed the continuation of vessels of any capacity including those of pre-Imperial sizes and as a result it is not uncommon to find examples today. They are rarely verified which is to be expected as they were not legal 'measures'. If they are verified then it is safe to assume them to be genuine survivors of the post-1826 confusion caused by ambiguities in the law and the resultant uncertainty on the part of Inspectors. For example, Section 6 of the 1835 Act dealt with the abolition of local and customary measures and had more extensive wording than that of the repealed 1824 Act. Witness testimony by Inspectors to subsequent Royal Commissions and Select Committees shows the confusion caused by these two acts. In particular, the wording of Section 6 is open to considerable interpretation:

“And be it enacted, That from and after the passing of this Act the Measure called the Winchester Bushel, and the Lineal Measure called the Scotch Ell, and all local or customary Measures, shall be abolished; and every Person who shall sell, by any Denomination of Measure other than one of the Imperial Measures, or some Multiple or some aliquot part, such as Half, the Quarter, the Eighth, the Sixteenth, or the Thirty-second Parts thereof, shall, on conviction, be liable to a Penalty not exceeding the sum of Forty Shillings for every such Sale: Providing always that nothing herein contained shall prevent the Sale of any Articles in a Vessel, where such Vessel is not represented as containing any Amount of Imperial Measure, or of any fixed, local, or customary Measure heretofore in use”.

When taken with a number of similarly ambiguous clauses in the 1824 Act and the repealed 1834 Act, it is not surprising that traders, Inspectors and local Justices were confused. This confusion created many problems of enforcement and a number of injustices for traders who had not intended to be fraudulent. It also gave adequate defence to fraudulent traders when confronted by the requirements of the law. One area of confusion concerned the use of aliquots or multiples of Imperial standard. For example, it was held that a sale by the 'ton long weight' was legal because even though this consisted of 2400 pounds avoirdupois and was more than the twenty hundred-weight statutory measure, it was yet a multiple of the standard pound Jones v. Giles (1854), 10 Ex. 119.

Another case concerned an Inspector who found in the bar of a public-house a pewter vessel marked "1/3 GILL". This was used for the sale of 'threes' of whisky and rum, not as a third of a gill but as the value of three pence. It was contended that the vessel was not a legal one, as it was not of the denomination of any Board of Trade standard, and was not mentioned in the relevant schedule to the Act. The Justices dismissed the case and Sir Edward Fry, Chairman, pointed out that one gill was a denomination of a Board of Trade standard and one-third was a fraction of that, therefore the third of a gill was a measure of a denomination of one of the Board of Trade standards. An appeal to the Queen's Bench Division was dismissed Bellamy v. Pow (1896), 60 J.P.712.

Again, in Scotland, the question of the lawfulness of selling beer by an undefined measure described as a 'Glass' was authoritatively settled in favour of the sellers. The Justiciary Court of Edinburgh held that sale by the glass, as three or sixpennyworth, was not a sale by measure but a contract by price. If a man asks for a glass he is in a sense buying by measure, although it is not by any known measure, local, customary or imperial, but in reference to the vessel in which the thing is supplied to him for use Craig v. McPhee (1883) 10 Ct. of Sess. Cas. (J.) (4th Series), 51; 48 J.P. 115.

Inspectors continued to be confused about the law throughout the 19th Century and even as late as 1895 their complaints were being heard by a Parliamentary Select Committee on Weights and Measures:

“an Inspector has to recognise at least 92 different weights, 15 measures of length and 48 measures of capacity and these 155 weights and measures may be legally marked in at least 184 different ways” (1)

The Half-Gill and Quarter Gill Measures

Evidence before the 1869 Standards Commission included Inspectors' returns showing the measures they had stamped in the year ending 31 December 1866. In some cases they had been stamping sizes for which no legal standards had been provided including the quarter gill (29 in Anglesey County and 34 in Flint County). Some Inspectors took Section 6 of the 1835 Act literally and did not stamp half-gills basing their reasons on the lack of reference in that Section to measures smaller than a thirty-second part of a gallon.

"In Ireland the gill is frequently called a naggin, and the half-gill or half-naggin, a glass. The half-glass which appears to be frequently used as a sub-standard in Ireland is consequently equal to a quarter gill of which there is no existing standard" Volume IV page 177 Standards Commission 1870.

Local and Customary Measures Described

If the incidence of anomalous capacities were solely due to fraud then any size would have sufficed for 'short measure'. However, more often than not there is a systematic pattern found with almost all such vessels which turn up, and this deserves further consideration. The vast majority of contemporary references relate to fraudulent practice of which there undoubtedly was a great amount. Such reference material is not only of interest in that context but also because of the descriptions given of the names and capacities of the everyday vessels being used during the 19th Century. After 1835 such vessels may have been used 'illegally' but if their sizes were preferred by the local community then they give vestigial evidence of the earlier capacity system for that locality. The following extracts mainly from Parliamentary Papers amplify these points and illustrate the extensive usage of local and customary measures:

One-third of a Pint (6.7 fl oz)

Salisbury "Here there are three half-pints to the full pint"

One-third of a Quart (13.3 fl oz)

Bristol "What is termed a 'can' in this City"

South Wales "In place of liquor being sold in pints and half-pints it is sold in an illegal measure called the 'blue' or 'sleever'

Chard "Used exclusively for grog"

Norfolk Inspectors (illegally) verifying this capacity in the 1860s.

One and a Half Pints (30 fl oz)

Shrewsbury "Here quarts hold only one and a half pints"

Bristol "Customary measures such as the 'tankard', three-fourths of a quart"

Winchester Pint (19.6 fl oz)

Bristol "They are two tablespoons less than a pint"

Milk Measures

Epidemic levels of cattle plague in the late 1860s seriously affected milk supplies causing prices to

rise in London:

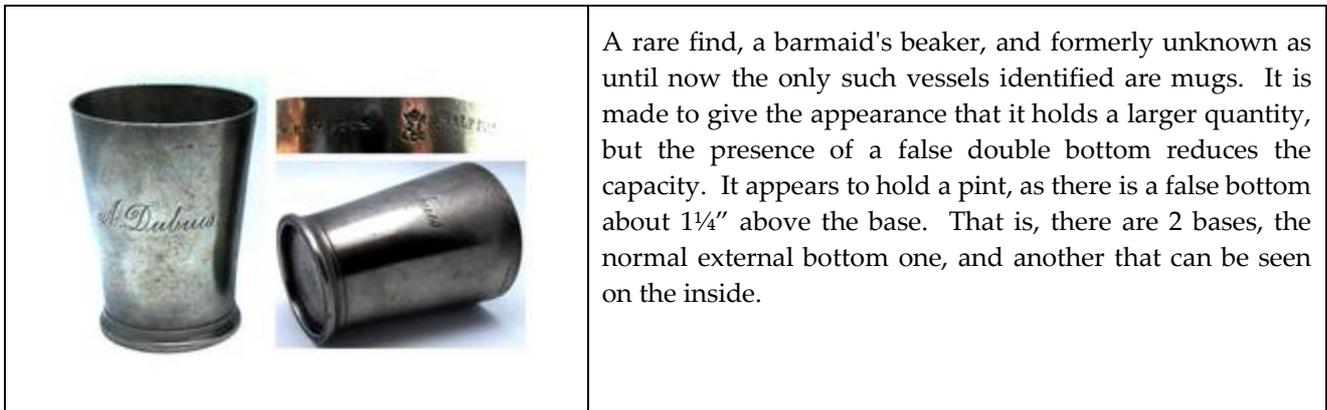
“People did not like to see a measure that was not full, and some milk sellers could not trust their subordinates as to how much they put into the measures. The consequence was that they had measures made of thirds and sixths of quarts and pints and they called them pennyworths or halfpennyworths”

“The milk seller introduced measures called penny and halfpenny measures which were the one-fifth and one-tenth of a quart”

Pennyworth Measures

As well as those for liquor and milk there were also pewter ones for beer. The Islington Gazette of 20 August 1867 reported the proceedings of a Petty Session held at the Vestry Hall of the Parish of Islington. 106 tradesmen were prosecuted that day by the parochial authorities for having on their premises illegal weights and measures. Among them was a beershop keeper who had two measures for ‘pennyworths’ of beer and was fined 10s and costs after pleading ignorance of the law. Such a measure engraved “One Pennyworth of Beer” is illustrated Figure 995 ‘Pewter of the Western World, 1600 - 1850’ by P. Hornsby,

Fig. 4 Pennyworth measures & ‘barmaid’s’ mugs & beakers	
	<p>Very rare ‘pennyworth’ measure, which is the first example the author has had; although he wrote about them in his book - see page 99 <i>Marks & Marking of Weights & Measures of the British Isles</i>. This is an unusual sized bulbous measure with an unrecorded maker’s mark in the base like a grid, and engraved on the upper body is 6^p, which stands for 6 pennies in old money where 240 pennies made £1. The contents were sold not by volume but price, which legitimised the transaction without breaking the law. The measure not surprisingly has no verification mark. It holds three-quarters of an Imperial gill, and is dated c1860-80.</p>
	<p>So-called barmaid’s mugs seem to hold a larger quantity, but the presence of a deep base as shown here (or a false bottom in the next example below) reduced their capacity. Beaker form with unusual handle, plain body with obvious extension to the base to create the illusion that the mug holds a larger quantity. Verified VR2 for City of London to left of handle.</p>



Pewter Measures

These gave traders an advantage even when no fraudulent practice was occurring as the measure had always to be 'brim-full':

"The smaller measures are made of pewter, which being a soft material, are more likely to wear yet no allowance ought to be made, as it is the duty of the publican to keep the measures stretched out after being cleaned.

If a pint or a quart pot is really the 'true standard' the public on all occasions receive at least one-sixteenth part short measure. Suppose the measure itself is bruised in any way which is too often the case, it will most likely be one-sixteenth short of the standard measure, which will make it in the way of business one-eighth deficient, a difference to the publican of 13½ gallons in one butt"

Nonetheless, the use of pewter mugs in public houses declined rapidly from mid-Century onwards. They were replaced by earthenware, earlier in South Wales and Bristol than London; probably due to the demise of local pewterers outside the Metropolis. Responding to questioning about a reduction in the number of pewter pots being verified (from 5629 in 1866, to 3048 in 1867 and 2844 in 1868) the Vestry Clerk of the Parish of St. Pancras told the Standards Commission in 1869:

"I think this has been caused principally by the practice of doing away with pewter pots in public houses. The 'stamper' we have now was the stamper 10 or 15 years ago and he tells me that at that time he had a gross of those pewter pots to a dozen now".

False Measures and Fraud

There were many more subtle ways of defrauding customers than knocking up the bottom of a measure or cutting down its rim after it had been inspected and found correct. Of course, the fact that Inspectors complained about 'short measures' did not necessarily mean such vessels had been constructed with fraudulent intent - some would have been 'local and customary'. Extracts from Parliamentary Papers illustrate a variety of fraudulent practices:

- *"There are some pewterers making measures with false bottoms from one-fifth to one-third short"*
- *"Here is a half-pint measure with a false bottom, it does not hold quite a gill - it is a fruit measure"*
- *"I know that beer sellers often order short measures. I went to an earthenware dealer in Abergavenny and asked him how he came to sell these things and he said: 'If I sell a true measure I should not sell any at all, they order false measures"*
- *(referring to one-third of a quart measures:) "An Inspector recently informed me that in place of three measuring a quart viz. 8 gills that many only measure 7 gills"*

- *“A variety of measures by the names of can, tankard, jug, nip, mug etc which are all different from Imperial yet charged as much. A landlord possesses only three stamped vessels viz. quart, pint and half-pint, and in these he pretends to draw all his liquor for one or two hundred customers. He has in his house a hundred cups, all short measure which he tells you (the Inspector) he does not use as ‘measures’ yet he pours the contents of a stamped one, or as much as is necessary into the short can, cup jug etc. They say they keep their cans for the use of their more respectable customers who do not ‘require’ Imperial measure.”*
- *“What measures do publicans in your district generally use?” - “They use all sorts that do not represent standards. They are not represented to contain any amount of the Imperial standard? - They are not and I cannot interfere with them. In my district earthenware measures are used to a very considerable extent”*
- *“Many of the stone or earthenware mugs used want nearly a fourth of the right measure”*
- *“Earthenware cups are almost exclusively used in this city for short measure. The word ‘IMPERIAL’ and the Imperial arms are often stamped on these cups, yet the publicans and beer house keepers tell you they do not use them as ‘measures’ though they ‘represent’ such. This is sheer trickery for if a man asks for a pint of beer it is drawn and delivered to him in one of them, being in more general use than pewter in Bristol, the landlords preferring them as they can get any size they please making short measure proverbial here”*
- *“Licensed victuallers when a ‘pint’ or ‘quart’ of liquor is requested, if they suspect the person say ‘we don’t draw full measure in this or that room, if you want full measure you must go to the tap room. Thus a decent man is shut out of a parlour unless he submits to short measure. The third part of a quart is charged as a pint; if a pint is called for, in 9 cases out of 10 a can is served, such being the local custom. These victuallers will say ‘I don’t sell measure at all, I only sell cans, jugs, mugs etc”*

Fig. 5 Standards used to verify the capacity of measures used locally by traders

	<p>Queen Elizabeth I gallon c1600</p>
	<p>Queen Anne Wine gallon from c1706</p>



Table 4 CAPACITY STANDARDS OF THE BRITISH ISLES

Version of Pound or Name of Gallon	Date of Introduction or Possible Period of Use	Volume (fl oz)	
		Gallon	Pint
WINE GALLON			
Tower or 'London' pound	Until 1527	100.00	12.50
Troy pound	1414 onwards	106.35	13.29
Stirling Scots pint	15 th century origins	121.11	15.14
Medieval Merchants' pound	Until 1527	124.63	15.58
Avoirdupois pound	1340-1588	129.08	16.14
London 'Guildhall' gallon	Ancient (before 1688)	129.19	16.15
Elizabeth I Avoirdupois pound	1588 onwards	129.25	16.16
Hanseatic Merchants' pound	1527 onwards	132.94	16.62
Queen Anne 1707 gallon (OEWS)	(1688 Excise Commissioners)	133.39	16.67
Renolds' standard (Bristol pottle)	1680	134.40	16.80
Jersey gallon	1562 onwards	139.20	17.40
Henry VII Merchants' pound	1497 onwards	141.76	17.72
Renolds' Tower pottle	1641 onwards	144.20	18.02
Guernsey gallon	17 th century origins 'til 1917	150.14	18.77
ALE and CORN GALLON			
Henry VII & Geo II Irish gallon	1495 and then 1736 onwards	125.50	15.69
Scots Ale pint	18 th century Glasgow standard	128.68	16.09
Henry VII (Winchester) corn gallon	1497 onwards	154.80	19.35

Elizabeth I corn gallon	1601 onwards	155.70	19.46
William III corn gallon	1697 onwards	156.90	19.61
Elizabeth I gallon	1601 onwards	161.50	20.18
William III gallon (OEAS)	1700 onwards	162.60	20.33
William III quart	1689	164.00	20.50
IMPERIAL GALLON			
George IV gallon	1825 onwards	160.00	20.00

Table 5 **BRITISH CAPACITY STANDARDS & THEIR ALIQUOTS (fl oz)**

Origin of Measure	Half-Gallon		Quart	Tankard			Pint		3 Gills	Can. Blue	Half-Pint				Gill			Half-Gill		
	<i>Pot. Scots-pint</i>	3 Pint	<i>Chopin</i>		1½ Pint		<i>Mutchkin</i>		¾ Pint		<i>Half-mutchkin 4-Glass</i>		1½ Gills		<i>Quartern. Noggin. Quarto. 2-Glass. 1/40 IG</i>		¾ Gill	<i>Half-noggin. Demi-quarto. 1-Glass</i>		
				1¾ Pint	Bottle			7/8 Pint	Half-bottle			7/16 Pint					1/3 Pint		7/32 Pint	
						2/3 Qrt						1/3 Qrt								
OEAS	81.3	61.0	40.7	35.6	30.5	27.0	20.3	17.8	15.2	13.6	10.2	8.9	7.6	6.8	5.1	4.4	3.8	2.5		
Imperial	80.0	60.0	40.0	35.0	30.0	26.7	20.0	17.5	15.0	13.3	10.0	8.8	7.5	6.7	5.0	4.4	3.8	2.5		
Winchester	78.5		39.2	34.3	29.4	26.2	19.6	17.2	14.7	13.1	9.8	8.6	7.4	6.5	4.9	4.3	3.7	2.5		
Guernsey	75.1		37.5				18.8				9.4				4.7			2.3		
Renolds' Wine	72.1	54.1	36.1	31.5	27.0	24.0	18.0	15.8	13.5	12.0	9.0	7.9	6.8	6.0	4.5	3.9	3.4	2.3		
Hen VII lb	70.9	53.2	35.4	31.0	26.6	23.6	17.7	15.5	13.3	11.8	8.9	7.8	6.6	5.9	4.4	3.9	3.3	2.2		
Jersey	69.6		34.8		26.1		17.4				8.7				4.4			2.2		
Renolds' Bristol	67.2	50.4	33.6	29.4	25.2	22.4	16.8	14.7	12.6	11.2	8.4	7.4	6.3	5.6	4.2	3.7	3.2	2.1		
OEWS	66.7	50.0	33.3	29.2	25.0	22.2	16.7	14.6	12.5	11.1	8.3	7.3	6.3	5.6	4.2	3.6	3.1	2.1		
'Guildhall'	64.6	48.5	32.3	28.3	24.2	21.5	16.2	14.1	12.1	10.8	8.1	7.1	6.1	5.4	4.0	3.5	3.0	2.0		
Scots Ale	64.3		32.2				16.1				8.0				4.0			2.0		
Irish	62.8		31.4				15.7				7.8				3.9			2.0		
Medieval lb	62.3	46.7	31.2	27.3	23.4	20.8	15.6	13.6	11.7	10.4	7.8	6.8	5.8	5.2	3.9	3.4	2.9	1.9		
Scots Stirling	60.6		30.3				15.1				7.6				3.8			1.9		
Troy lb	53.2	39.9	26.6	23.3	19.9	17.7	13.3	11.6	10.0	8.9	6.6	5.8	5.0	4.4	3.3	2.9	2.5	1.7		
Tower lb	50.0	37.5	25.0	21.9	18.8	16.7	12.5	10.9	9.4	8.3	6.3	5.5	4.7	4.2	3.1	2.7	2.3	1.6		

