Issue Fifty-Four

Leaden Tokens Telegraph

Sept 2009 Page 1

Editor: David Powell

A free newsletter to all who share our interest in these fascinating and often enigmatic pieces. Please send the editor at least one 300 dpi JPEG scan, or a sharply focused photo print, of any interesting leaden token or tally in your collection. Send images as email attachments to dmpowell@waitrose.com or david@powell8041.freeserve.co.uk. Please note that the old LTTeditor@aol.com address advertised on some earlier versions of LTT is no longer active.

How Did They Make the Things?

In last month's LTT I showed you a very pleasantly patinated type 1 petal + grenetis piece {Fig.1} and invited you to guess its age and findspot location. Answers: (i) spring 2009 and (ii) Delaware., USA. To quote the manufacturer: "The petal one was a snap..did the whole thing with a scratch awl, free-hand in minutes. Cast it up and dunked it into some acid." Sorry if you don't like trick questions, but read on!

LTT's main subject this month is an often-neglected and little discussed one: manufacture. How were lead tokens actually made? We occasionally get correspondents from outside the British Isles and one of them, Peter Goebel of Goose Bay Workshops is a professional craftsman and metalworker with an interest in period reproduction. His favourite decade is the 1740s, the period when the last phase of crude lead tokens was at it height, and, as lead tokens are fairly scarce over there, I sent him out two random groups of pieces, about 25 in all, to analyse. All were common stock types, mainly of the 18th century, but including quite a variety of metals and sizes. This article is about Pete's subsequent experimentation based on those samples, and the correspondence between us which resulted.

Pete has made such a fine job of the piece above that, when I proposed to put it in last month as an appetite-whetter, he was concerned; so, may I please quote and endorse his own words: "Please stress that I am in no way trying to fake original pieces; I am merely trying to shed some light on manufacturing methods." Which, I trust that you will find, he has done admirably.

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Pete's interest in crude lead was first inspired by three tokens which he acquired from a detectorist's lot. Two of them were fairly ordinary, but Fig.2, a fine 12½ mm early-mid 17th cent piece, definitely deserves reproduction here. He was interested in finding out more, but there was a problem: "On this side of the puddle, lead tokens are as scarce as hen's teeth.. People just have no idea what the heck they are."

We started discussing the way in which some lead tokens appear to have their two sides out of alignment with each other, as if they have separately manufactured and clamped together like seals, and very soon Pete's ideas began to flow:

> "Just dawns on me....Very interesting problem from a metal working point of view...it would not be possible to solder a lead token half to another without melting the whole works...the tokens that appear to be folded I would suggest are in fact just a mis-alignment of the obverse and reverse mould halves . Given two lead token halves to join, first they would have to be relatively flat on the backs. That is not the way they would come out of the mould, so would probably need some file work. Now the tricky part...lead melts at the same temperature as solder.. when it reaches a certain temperature, it becomes a liquid.....I still do not see that as an option for joining. You might perhaps press a hot copper (soldering iron) against one face for a bit, then instantly press a second hot half against the first to stick them together, but it sure seems like a lot of work for something with almost no monetary value. I will take the issue to the workbench for testing.

> Aligning two halves of a mould can be pretty daunting too. I've tried it and it is not easy...I used to make Goose Bay Farthings from tin, and found the best way was to melt some, flatten it then stamp it."

Results fairly random, see below; "GBW", for Goose Bay Workshops, is faintly visible on the best of them. The pieces are made of what Pete describes as "pure food grade tin"; in other words, the same stuff that they use for lining the steel food containers colloquially referred to as tins or cans.

Figs.3-7: Intentionally mis-aligned and mis-sized halves

He concludes:

> "Was it possible to stick two thin lead disks together? I doubt it, but I don't want to take anything away from the craftsmen of yore. A simple mis-alignment of the mould-halves will results in a token with seemingly stuck-together sides. The same holds true for different sized moulds; if cobbled together into a single token, one side could be bigger than the other, and the relatively thin lead of the larger side could be folded over the other in time".

Which, I guess, is a pretty good explanation of many of the "slopy-edged" tokens, with saucer-shaped larger sides, which we see amongst crude lead finds over here. However, after examining the second batch of pieces which I sent him, Pete started wondering whether, perhaps, some slopy-edged piece were deliberate, rather than just being mismatched diameters:

> Most pieces which are bi-facial show a seam where the mould halves come together, however slight. Most of the uniface items do not, and most of these are tapered to some extent, with the design face being somewhat smaller in diameter than the plain side. In other words, the mould was cut with sides that tapered away from the design slightly. This allows the cast token to pop right out of the mould, and would certainly be better than pouring up a token in a mould with sides that tapered the other way! Sort of a quick and easy way to ensure that you get many castings from a mould. The bi-faced tokens have what seems to be straight sides.

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On metal, moulds and pouring into them, Pete writes:

> "The actual alloy of the metal will no doubt be lead with a bit of whatever other old junk the guy had laying around. I've cast pure lead, wheel weight metal, babbitt, pewter and pure food grade tin and they all behave in a similar way. All get fluxed to float off impurities, and well stirred so all the crud floats to the top to be skimmed off. That process is as easy as dropping into some molten lead a bit of lard or tallow, a quick stir with a piece if metal and a scrape across the surface, When you pour, the pure lead tends to pour out from under the dross, so virtually no dirt enters the mould.
>
> Like casting musket balls, the lead should be hot, fluxed to remove dirt, and poured into a hot mould... the first one or two usually go back in the pot and only serve to warm the mould. I just poured a few rather quickly...you can pop one out every 30-45 seconds if you want.

Fluxing could be sweet oil, also known as olive oil, or wax; or Prince Rupert's favourite, arsenic trisulphide, maybe not such great choice these days. Any of the above would give a better quality casting. The mould used was just soapstone with a drilled hole..

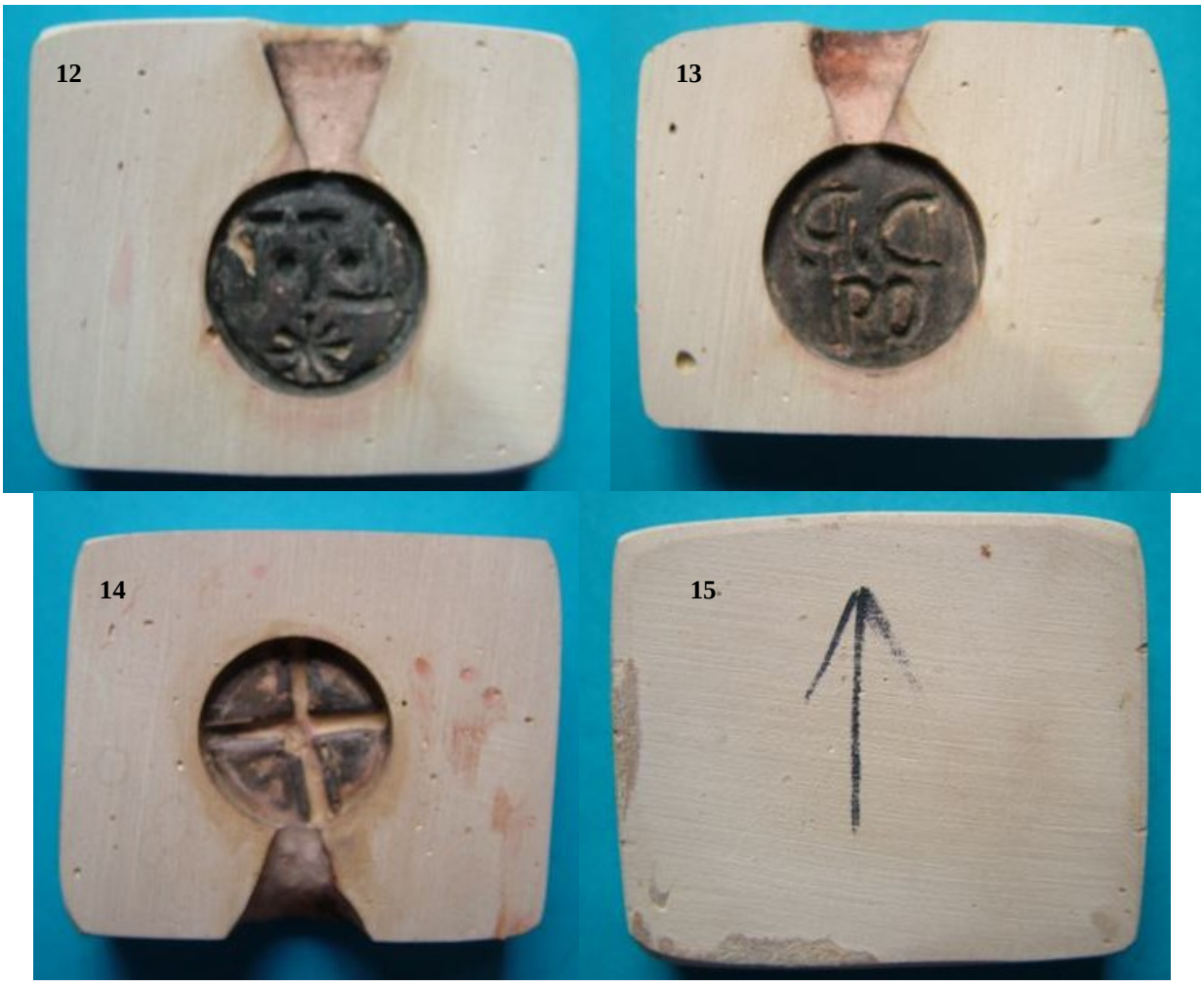
The metals I mentioned above all come from the mould looking like silver, and will turn darker in a short time {weeks} depending on the metal.

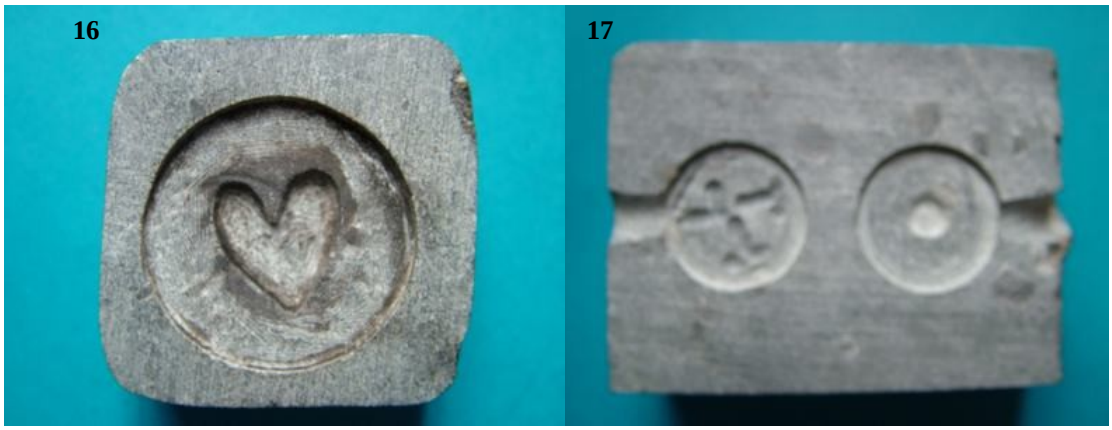
Moulds can be anything handy, soapstone is one of the best choices since ancient times, brass and aluminium , steel and ceramic work well also. I've cast pewter spoons in a home-made mould made from Bondo, a form of automobile body putty. It works."

Pete also kindly had a go at cutting dies and making moulds for a few simple designs, not to mention the first-ever set of LTT designer tokens, as illustrated in Figs.8-11. Note the LTT initials going round in a circle in Fig.9, not to mention the presence of other well-known types.

With the pieces came:

- A piece of Pete's own fictional prose, describing a local token maker in action; this I have printed at the end, on page 5, so as not to obstruct the glow of the technical discussion.
- Three light moulds {Figs 12-14; blank side Fig.15}, and two heavy moulds {Figs.16-17}.





Notice the ducts on most of the moulds, and also the use of an alignment marker on the back as illustrated by Fig.15. The moulds used for the LTT token {Fig.10} are made of Bondo, an auto body two part epoxy putty, whilst the heavy moulds are soapstone and soft enough to carve with a butter knife.

Pete's normal practice is to use a lead-free solder, an alloy of 95% tin and 5% antimony, as much of his craftsmanship involves the production of cooking utensils and, as he says, "leaded solder and cookware is considered rather poor form." Such a combination could well be imagined in crude lead tokens, and Pete feels believes that it would behave very similarly to lead. Pieces with a high tin content are certainly seen alongside crude lead, whilst antimony is used for hardening and is sometimes responsible for the very dark colouration of, for example, certain 17th cent main series pieces.

On colouration and patination Pete suggests:

> The fancy work is professionally done and could be pewter or lead I guess...the wealthy could afford whatever they wanted. The less professionally done stuff I would think is just junk metal, the colour to be determined by the chemical composition of the earth it lies buried in.
>
> It is my understanding that true patination of lead is more than difficult to obtain...a little colour I can replicate, but true white, hard patination takes at least 100 years. Of course not all lead gets that coating, so we are back where we started.

Personally I find the white, hard patination rather unattractive, whilst I enjoy the uniformity of colour deriving from a set of lead piece which have laid together in the same ground for a couple of hundred years

One final comment from Pete: "Mould making is interesting, given the lack of drill presses and dremel tools, they pose a real challenge. I am surprised at the level of surface smoothness, and straightness of line...not easy to do even today. " Some of his first attempts were decidedly chunky, although no worse than many of his 18th cent predecessors, and he decided to experiment with making them thinner. He hasn't had a late mediaeval piece yet; one of these days I am going to send him out a BNJ54 type M {see recent June/July issues} and see what he makes of that. We'll let you know!

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Comments welcome, and may I also please invite you to look at Pete's website at "http://www.goosebay-workshops.com/"

AT THREE CRANES
If you have any lead tokens with part of their legend reading *AT THREE CRANES* please contact
Phil Mernick
who is researching them.
Email: phil@mernicks.com
Phone:020-8980-5672

Manufacture: A Fictional Setting

We have not before featured short stories in these pages, but this contribution in Pete's own words is a fictional account of how he thinks crude token manufacture might work in practice:

> "Isaac was seventeen now, able to do all the tasks involved in the running of the family business. The Bloated Goate would be his in years to come, along with a few acres of farmland behind the well frequented inn.
>
> It was these few acres of barley, now ripening that had Isaac's father's attention. A new supply of lead tokens would be needed this year as tallies for the workers, and Isaac was given the job of making the two dozen tokens needed. He was given a week to make them, along with all his other tasks, and one of the family's best bleached beeswax candle stubs with which to do it.
>
> First, he trimmed the base of the candle square with his pocket knife, digging down a bit in the centre to cut off the wick. Pressing the resulting surface to a warm brick gave him a 7/8th inch diameter smooth surface. (Beeswax instead of tallow, has a smaller wick, and is firmer).
>
> Again , he takes his pocket knife and draws 4 L shaped cuts on the stub like this. Now he spends a few moments scraping away about 1/16th of an inch from inside each L. A judicious pass across a lit candle smoothed the surface of all carving marks, leaving him with what amounts to a die for his tokens.
>
> Heading down the road to the local potter, he gets a lump of clay the size of a hen's egg. Back at the tavern, he rolls out the clay to ½ inch thick slab...carefully sooting the candle stub with a bit of pitch pine, he presses it into the clay to produce a mould. As the clay dries, he checks on it from time to time and in a while he cuts in a channel to the edge for a sprue.
>
> Tomorrow he puts the dry clay on an oak slab , and slides it into the fire. This will almost fire the clay, enough for his tokens.
>
> Once cooled down, his mould is rubbed on a flat brick to smooth the surface, and bring the cavity to a depth he wants.
>
> Lead is melted in an old pot, fluxed and skimmed of dross, the mould is held against a flat brick with a bar rag, and his tokens poured up one by one. The sprues are cut off and go back into the pot. His lead is a mix of musket balls, sinkers, old tokens, part of an old pewter spoon, and some lead from last year's church roof fire. The finished tokens go into his father's cash till."

Illustrated, right, is Pete's own attempt to make a token using the above method. The piece which he subsequently produced is shown on page 3. The two coin like plastic bits are made of Sculpy, a type of art clay which you bake in your home oven. They were made as Peter describes:

> ...a really thin thread was rolled out and the design was laid on the surface of the disks and sort of just pressed down a bit to stick. It took about ½ hour to do the pair, whilst the candle stub took 10 minutes or less. Moulds are the female receivers of the future lead, while dies are the male counterparts used to make the moulds.

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