The 14th-century Billingsgate Trumpet, Museum of London

Jeremy Montagu

Clearly this was originally parts of three different trumpets, though possibly used as one. The bell yard and the lower yard are certainly from the same instrument. They match metallurgically, both being high zinc (75-76 Cu, 24 Zn), and the ferrules round the upper end of each are the same, 6.5 mm wide and with a slightly cushioned centre with a bead on each side. The mouth yard is high in tin (86 Cu, 8 Zn, 6 Sn) and must have been from a different instrument. The second yard, while the main part is metallurgically not too different (86 Cu, 10 Zn, 4 Sn), it is different enough, and the workmanship of its longitudinal seam is comparatively rough enough, to indicate a different origin; its repaired section is different again (88 Cu, 5 Zn, 4 Sn, with a significant amount of lead, Pb 2), even less well worked, with a very rough looking ferrule (Lawson's drawing in *GSJ* 54 is misleading, looking very much better than it is).

Each yard is female north to male south. The tubing varies from 11.2 to 12.2 OD – some inaccuracy in measurement is due to non-circular tubing, and some to working in gloves in mid-air. Metal thickness, where accessible, was 0.35-0.5 (measurements were taken with a plastic caliper gauge, another built-in error). Ends of tubing were slightly constricted due to fitting into the sockets of the next joint (particularly noticeable with the mouth yard), so the bore would be measurable only with adjustable internal dial gauges. I measured the end of the lower yard as 11.2 OD, 10.1 ID – there was no constriction visible to the eye.

The mouthpiece is integral with the mouth yard. Embouchure ø 21.2 internal, rim width 4.55 (an added strip of the same metal bent into a ring and soldered round the top with a simple soldered butt joint joining the ends of the strip), outside ø 28.8. The diameter tapers initially in a curve (as on 18th century french horn mouthpieces) over about 102 mm to merge smoothly with the main tubing. The longitudinal seam of this joint is very neat and very straight.

The bell yard expands slightly from OD 12.5 immediately below the ferrule to 15.5 immediately above the ball over a length of 123 mm. OD immediately below the ball is 17.7. The meander joint starts just beyond the beginning of the curved flare of the bell, at the point where greater strength would be useful, especially when shaping the bell on a mandrel by hammering to thin and expand the metal to increase its area to the desired flare. Incidentally,

the BM Laboratory report is slightly misleading when referring to this type of joint, for its use has been fairly common in earlier times. Tutankhamun's bronze trumpet was made in this way (see my note on this in *GSJ* 29, 1976, 115-117), and so were many of the Danish lurs (Broholm, Larsen, and Skjerne, *The Lures of the Bronze Age* (Copenhagen, Gyldendal, 1949), 41. A technique discovered and rediscovered in such widely separate areas can be expected to reappear again elsewhere. An added strip of metal, presumably the same as the rest of it, 6.5 wide, is soldered over the end of the bell as a garland. The effect of a garland is both to strengthen the somewhat fragile thinned end of the bell and also to clamp its vibration and so aid the projection of sound. Because the garland is a close fit, even in the small area where it is detached from the bell, it was not possible to measure the thickness of the bell at its end, but to the eye it is perceptibly thinned. A small hole (not measured but c. 3 mm by eye) through both garland and bell would have served to hang a banner, either a small triangular one suspended from that point, as in a number of mediæval illustrations, or one end of the more frequently seen rectangular banner, the other end of which could have been held round the tube above either ball.

The two balls are made of two hemispheres, probably of the same metal as the tubing, soldered rim to rim. The upper ball serves no apparent purpose, unless it covers a repair not visible on the X-ray (examination with an endoscope might reveal the answer to this). While the lower ball (more elaborately made, with an added bead at the rim of each hemisphere) would normally support a junction between body and bell flare, the X-ray does not show any such junction, so it maybe purely decorative (again an endoscopic examination might be useful). Each ball is supported by a bead above and below. It is possible that these beads are the ends of a sleeve carrying the whole ball unit, as on later (eg Stuart) trumpets, but they do not look like those.

The small shield is clearly a patch to cover a repair. The bell has suffered from stress cracks. One towards the end has been crudely repaired with a long blob of lead solder internally; another small crack just above it has not been treated, though the metal is noticeably brassier at that point.

The mouthpiece is particularly fascinating for it has no known parallel. It differs from any ethnographic instrument of this sort and is very different from, for example, those in the Memlinc triptych in Antwerp. The smooth curve into the main tubing is likely to produce a more horn-like tone quality than would the normal trumpet mouthpiece with its sharp edge to

the grain at the base of the bowl. One would cite for comparison, though far distant in time, the drawings of Broholm, Larsen, and Skjerne in their book, 108-10, which show a progressive development of mouthpiece types from a straight tube with no shaping to something very similar to the modern trombone. This suggests that Billingsgate is early in the development of the European post-Roman long trumpet (surviving Roman mouthpieces are much more trumpet-like in pattern). The earliest illustrations of this type of trumpet known to me are in the *Cántigas de Santa Maria*, c.1260, (Escorial Library, J.b.2), f.286 (see my *World of Medieval & Renaissance Musical Instruments* , pl. 32, where triangular banners of the type mentioned above were used. Those trumpets, however, have large cup mouthpieces.

Comparing the quality of the two better sections is difficult, but to my eye the mouth yard is the better, though the meander seam of the bell is beautifully done. The two are different enough that it is difficult to say that either one is better then the other. The second yard is markedly inferior, even before part of it was replaced with a less good section. Musically, in that position, this would probably make little difference to the sound. Certainly the four together would make a viable instrument, probably capable of the 2nd to 4th partials and perhaps as far as a bugle range (to the 6th). The mouth yard and lower plus bell yards are of sufficient quality to suggest an official, perhaps even regal origin. If the four parts were ever used as a single instrument, one would suggest that it had then come down in the world. The original owner/s of either mouth or bell yards could certainly have afforded to replace the missing yards, and neither is likely to have countenanced the quality of the second yard and certainly not the internal blob of solder inside the bell, which is very much amateur work, the sort of thing an itinerant player might have done, or perhaps a soldier in the field.

One could say that without doubt the makers of the bell and mouth yards were professionals, though to which Guild or Company brass instrument makers would have belonged at this period I do not know – the Museum may know or be in a good position to discover and also to ascertain whether any relevant records survive. Later trumpet makers, for example Augustine Dudley, two of whose instruments are in the Museum, were members of the Goldsmith's Company because they also made instruments in silver (see Maurice Byrne, 'Goldsmith-Trumpet-Makers in the British Isles', *GSJ* 19, 1966, 71-83), but whether this was also true at this earlier date again I do not know. Nor do I know to what extent at this period there were such people as itinerant trumpeters outside royal or baronial courts, or within military or civic establishments. If there were not, then the arguments against the four joints

ever having been used as a unit would be stronger.

This report was written 24 May 2006, following a visit to the Museum of London on 22nd to examine the instrument, with the kindness of John Clark. It supplements the articles in the *Galpin Society Journal* by John Webb (*GSJ* XLI, 1988, 59-62), Graeme Lawson & Geoff Egan (*ibid*. 63-6) and Graeme Lawson (*GSJ* XLIV, 1991, 150-6), all three illustrated.