

The Silver Trumpets of the Bible, Ḥatsots'rōt

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The reference in Numbers 10:2 is to the one musical instrument in the Bible which we can identify with absolute certainty from the prescription of how it was to be made and the purposes for which it was to be used. From 10:2 onwards, Moses was commanded: “Make thee two ḥatsots'rot of silver, of an whole piece shalt thou make them: that thou mayest use them for the calling of the assembly, and for the journeying of the camps... (verse 9:) And if ye go to war in your land against the enemy that oppressteth you, then ye shall blow an alarm with the ḥatsots'rot ” (Authorised or King James Version: AV). Of a whole piece is an inaccurate translation of the Hebrew, *kesef miqshah*, which is better as silver of beaten work. The Greek of the Septuagint (LXX), *ἀργυρᾶς ἐλατᾶς*, of silver beaten with a hammer, is accurate enough; so is the similar Latin of the Vulgate, *argenteas ductiles*; so too are Wyclif's “two beten out silueren trompes” and Tyndale's “two trōpettes of beaten syluer”. The AV is not only inaccurate but is positively misleading because “of a whole piece” suggests casting, whereas the original text specifically prevents that by demanding beaten work: silver raised (the technical term) from sheet into a tube by hammering it.

There is only one type of instrument which fits this description. The facts that the ḥatsots'rot were made from hammered silver and were used to signal movement of the camp and for blowing alarms, makes it plain that they were indeed trumpets, *σάλπιγγης* in Greek (*salpingēs*, the plural of *salpinx*) and *tubae* in Latin. This is confirmed by the fact that the words used for sounding them in the Hebrew are those which always refer to trumpeting and which are still used today as the names of the calls of the shofar.

It is a reasonable assumption that the trumpets which Moses made in the desert, only a short while after leaving Egypt, would have been similar to those with which the Children of Israel had been familiar in that land during their centuries of servitude. Josephus's description of them, many centuries later, as being slightly less than a cubit long, the distance from the fingertip to the back of the elbow, much the length of the trumpets seen in Egyptian wall-paintings and carvings, bears this out. ¹ Certainly the trumpets carved on Titus's Arch in Rome, which purport to be those captured after the fall of Jerusalem, are much longer than a cubit. They are clearly ordinary Roman trumpets, presumably modelled on the only ones which the carver had available, and they are not evidential for the appearance of the Israelite trumpets of Josephus's time, contemporary with Titus, still less for the biblical instruments

some 1,300 years earlier.

The Exodus from Egypt was within a couple of centuries or so of the reign of the Pharaoh Tut'ankhamūn, two of whose trumpets were found after his tomb was opened in 1922, the only surviving ancient Egyptian trumpets so far discovered. The alleged third trumpet, in the Louvre in Paris, is the top of an incense stand. ⁱⁱ Tut'ankhamūn's trumpets match the description in Num. 10:2 in all respects save for the material of the smaller, which has a copper-alloy body and a gold bell instead of being made of silver. I was permitted to examine, though not to touch, that trumpet when it came to London with the Tut'ankhamūn Exhibition in 1973. ⁱⁱⁱ Briefly, it was indeed made of beaten work, unlike the Louvre object, which is cast. ^{iv} The body is made of sheet bronze or other copper-alloy which has been hammered to raise or curve it into a slightly conical tube with a longitudinal seam in the normal meander pattern for such work, where each side of the tube lies alternately over the other and, after soldering, is burnished to a smooth finish. ^v The joint was left slightly rough on the inside of the tube and the indentations of the meanders are clearly visible when looking down the interior. The bell had been separately made and hammered, and burnished, as one can with gold, so that the two edges had simply flowed into each other, making the use of solder unnecessary. It had then been riveted over the end of the tube, with a sleeve of very thin gold, hardly more than gold foil, over the joint both to conceal it and to render it airtight – the head of one of the rivets can be seen beneath the foil as a highlight in the detail photograph of the bell in the British Museum catalogue. The mouthpiece was simply a strengthening ring of metal rod at the top of the tube, with the end of the tube swaged out over it. The total length, given by Hans Hickmann and the British Museum, is 494 mm; the silver trumpet, which is not now in its original state (it shattered when it was blown in the 1930s), was, according to Hickmann, 582 mm long. ^{vi} Whiston gives the length of Josephus's cubit as 21 inches (533 mm); my cubit is 500 mm. ^{vii}

Some of the specified occasions in Num. 10 when the ḥatsots'rōt were to be blown were (verse 10) “in the day of your gladness, and in your solemn days and in the beginnings of your months” (AV). It is interesting to compare that with Ps. 81:3 “Blow up the trumpet in the new moon, in the time appointed, on our solemn feast day”, where the Hebrew word in the psalm for the AV's trumpet is shofar. Clearly custom and practice had changed between the forty years in the wilderness, of Numbers 10, and the time, at least some centuries later, when that psalm was written. ^{viii} The use of one instrument had given way to that of another.

King James's translators wrote trumpet each time in English, but in the Hebrew we have two very different instruments: ḥatsots'rot in Numbers and shofar in the Psalm. This is why it is essential to refer to the language of the original text, as we do throughout here, and not to rely on a translation, where so often the same word is used for two different instruments. The LXX occasionally has *keras*, the Greek for a natural animal horn, for the shofar but normally uses *salpinx* indiscriminately for either, and twice (in the story of Gideon) we get *keratinas salpizein*, 'to hornly salpinx'. St. Jerome in the Vulgate occasionally uses *buccina* for the shofar, but more often uses *tuba* for either instrument, and these distinctions are not always in parallel with those in the Greek. There is no perceptible system in this and it seems entirely a matter of the whim of the moment which word is used. The one thing that can be said in their favour is that neither ever uses *keras* or *buccina* for the metal ḥatsots'rah. With this very casual use as a background one can hardly blame the AV translators for not making it clearer which instrument was being used. It might be of interest to note that among the earlier translations into other European languages, Martin Luther seems the only one to have distinguished between the two, using *Trompete* for ḥatsots'rot in Numbers and *Posaun* for shofar in the psalm.^{ix} It is because of Luther's constant use of *Posaun* for shofar that composers such as Mozart wrote solos for trombone (the modern meaning of *Posaun*) when setting the "Tuba mirum" of the Requiem. *Posaun* derives from Latin *bucina*, one of the Roman military trumpets which, as Renato Meucci has recently proved, was made of animal horn, normally bovine.^x The Roman *tuba*, on the other hand, also a military instrument like the Greek *salpinx*, was straight, slightly flared, made of bronze, and about one and a half meters long, so corresponding exactly with the instruments on Titus's Arch. The incorrect doubled 'c' in the Vulgate's and church Latin's *buccina* probably arose through a false etymology from *bucca*, cheeks, instead of from Greek *βυκάνη*, *bukanē*, a crooked horn.^{xi}

Following the command in Numbers 10:8-9, "And the sons of Aaron, the priests, shall blow with the trumpets. And if ye go to war...then ye shall blow an alarm...and ye shall be saved from your enemies," when they went to attack the Midianites (Num. 31:6), Moses sent the ḥatsots'rot with the priests.^{xii} The ḥatsots'rot remained exclusively the priestly trumpets, but this did not mean that priests could not blow the shofar – that instrument was available to all, but the silver trumpets only to the descendants of Aaron. So far as ceremonials were concerned, there was clearly a mixture of use. In 1 Kings 1:34, 39, and 41, when King Solomon was anointed, the origin of most later coronation ceremonies in those Christian

countries which have kings or queens, the shofar was blown. But by 2 Kings 11:14, when Jehoash was crowned, the Ḥatsots'rōt had become the accepted instruments for such ceremonies.

When King David established the orchestra which would become that of the Temple once his son King Solomon had built it, the priests were assigned the Ḥatsots'rōt (1 Chronicles 15:24). Levites sang and played the other instruments, presumably including the shofar, translated as cornet in 1 Chronicles 15:28 (LXX *σωφῆρ, sōpher*, an obvious attempt at shofar, and *buccina* in Latin). This is one of only three recorded biblical occasions when both types of trumpet were used together. Another is Ps. 98:6 where the Hebrew is simply (*baḥatsots'rōt v'qol shofar*), 'with the Ḥatsots'rōt and the voice of the shofar), whereas the LXX, and following it the Vulgate, are much more complex: *ἐν σάλπιγγιν ἐλαταῖς, καὶ φωνῇ σάλπιγγος κερατίνης*, (*en salpinxin elatais kai phōnē salpingos keratinēs*) and *in tubis ductilibus et voce tubæ corneæ*, both meaning with hammered metal trumpets and trumpets of horn. The AV adheres more closely to the Hebrew: 'with trumpet and sound of cornet'.

Coverdale has a quite different interpretation in his Psalter, which survives in the Book of Common Prayer, translating it as 'with trumpets also and shawms'. The shawm was the leading loud woodwind instrument of the European Middle Ages and Renaissance, played with a double reed. It is still used over much of the world, sometimes as the chanter of a bagpipe, as in Scotland, and also mouthblown over much of southern Europe, all round the Mediterranean, and throughout the east, as far as China. In Europe it gave way to the oboe, a much quieter and more domesticated instrument, from the 1650s onwards. The *ḥalil*, in later chapters of the Bible, might have been a shawm, though on general grounds of date this is unlikely. It is more probable that we can say that the shawm was unknown in most, at least, of the biblical period and that Coverdale was simply trying to make some distinction between *buccina* and *tuba*.

The third time that both appear is 2 Chron. 15:14 where "they swore unto the Lord...with trumpets and cornets." The LXX uses *salpinxi* for the Ḥatsots'rōt and *κερατίναις (keratinais)* for shofarot, meaning, reasonably enough, something made of horn, and the Vulgate has *tubæ* and *buccinæ*.

The AV's cornet is spelled nowadays, and sometimes was then, *cornett* with double-*t* to distinguish it from the modern band instrument. It was used from the late fifteenth century through King James's time, into the eighteenth century. It was made of wood, slightly curved,

with fingerholes, and it was played with a very small trumpet mouthpiece, almost as small as that of the shofar. Players therefore set the mouthpiece in the side of the lip, exactly as shofar blowers do, where the lips are thin enough to control so small a mouthpiece. It was the great virtuoso instrument of the Renaissance and early Baroque, excelling in ornate divisions, as variations were then called.

It is in this passage in 2 Chronicles 5:12 to 14 that we get an idea of what music in the Temple may have been like. There were singers, who also had cymbals, 'psalteries' (*n'valim*, a biblically late type of lyre), and *kinnorot* (the main type of lyre such as King David played), 'and with them an hundred and twenty priests sounding with trumpets', trumpeting with trumpets in the Hebrew. In the next verse, 'the trumpeters and singers were as one', but with only two or three notes available on either type of trumpet it seems unlikely that they were actually in unison, all on the same pitch, and one suspects that the sound must have been both deafening and probably discordant. They were, it seems from verses 13 and 14, actually within the Temple, rather than in one of the courtyards, and the shattering noise, not to mention the smell of blood from the sacrifices and the flies, must have meant that such occasions were rather different from any modern conception of religious observance.

Although they appear in the same verse, Hosea kept the two instruments some miles apart (5:8), blowing the shofar in Gibeah and the ḥ atsots'rah in Ramah. The Talmud, though, goes into great discussions of how, according to Rabbi Hisda, the one substituted for the other after the destruction of the Temple, and, in discussing Mishnah Rosh haShanah 3:3 and 3:4, their joint use.^{xiii}

As a postscript, it should perhaps be stressed that the broadcast of the Tut'ankhamūn trumpets in 1938, a recording of which has often been rebroadcast since, gave a very false impression of their potential, and thus of that of the ḥ atsots'rot. Bandsman Tappern, who blew them on that historic occasion, was not aware that the plain metal ring was the only mouthpiece that there had been in Pharaonic times, and he therefore put his normal trumpet mouthpiece into the end, wrapped with cloth to make a good fit. That is how he was able to play the "Grand March" from *Aida*, the *Posthorn Gallop*, and some other well-known calls. The original instruments, judging from the behaviour of the reproductions in my collection, and the reports of Hickmann and Kirby, produced even less range than the shofar, a low note, somewhat vague and indistinct though it can be improved with practice, an excellent middle note, which can be inflected up and down a little, and a high third note, attainable with some

effort.^{xiv} The design of the mouthpiece is such that it seems unlikely that that third uppermost note was used; it requires enough pressure that some distortion of the material, and probably some damage to the player's lip, would result, and the low note is of limited use for military purposes. There is no doubt at all, from the iconography, that in ancient Egypt these were military instruments, normally used singly. Nor is there any doubt that Tut'ankhamūn's trumpets were not a pair – they are different in material, in size, and in decoration. Simply he had two trumpets just as he had two or more of many other wonderful things. It was only Moses who was commanded to make a pair.

This is an excerpt from my *Musical Instruments of the Bible* (Scarecrow Press, 2002).

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i Flavius Josephus, *The Works of Josephus*, translated William Whiston (London: Printed by W. Bowyer for the Author to be sold by John Whiston, Bookseller), 1736, reprinted Peabody, Ma.: Hendrickson, 1987: *The Antiquities of the Jews*, 99, book 3, chapter 12, paragraph 6 (291).

ii Christiane Ziegler, *Catalogue des instruments de musique égyptiens, Musée du Louvre, Département des antiquités égyptiennes* (Paris: Éditions de la Réunion des Musées Nationaux, 1979), 97, IDM 117=N 909.

iii I. E. S. Edwards, *Treasures of Tutankhamun* (London: British Museum, 1972), exhibition catalogue, 45.

iv Details and sketches of its construction will be found in my brief article, 'One of Tutankhamon's Trumpets', *Galpin Society Journal* XXIX (1976): 115–7, which was reprinted with the same title in *The Journal of Egyptian Archaeology* 64 (1978): 133–4.

v The material is always given as bronze or copper; nobody is going to file a bit off to analyze it!

vi Hans Hickmann, *La Trompette dans l'Égypte Ancienne* (Cairo: Institut français d'archéologie orientale, 1946), 19. Note that none of the mouthpiece patterns drawn as fig. 25 there bears any resemblance to that of the bronze trumpet. See my sketch with the articles in *Galpin Society Journal* and *Journal of Egyptian Archaeology*, above.

vii Josephus, *Works*, 887, an appendix on Jewish weights and measures.

viii While the psalms as a whole are traditionally attributed to King David, it is generally accepted that they vary quite widely in date and that the authorship of many is unknown; few can be dated to any specific period. Thus one cannot be any more precise than 'some centuries later'.

ix Luther was a Hebrew scholar (Partridge, *English Biblical Translation*, 35), but then according to the same source so was Tyndale, who normally used *trompette* for either, though occasionally distinguishing between the two.

x Renato Meucci, 'Roman Military Instruments and the *Lituus*', *Galpin Society Journal* XLII (1989): 85–97, 86, citing and restoring Vegetius, *Epitoma rei militaris*, 3,5.

xi Charlton T. Lewis and Charles Short, *A Latin Dictionary* (Oxford: Clarendon Press, 1879), s.v.

bucina.

xii

The word used for ‘blow an alarm’ is from the same root as *t’ru’ah*.

xiii Talmud, Seder Mo‘ed, Shabbat 36a for the first and Mo‘ed, Rosh haShanah 27a for the second

xiv Hickmann, *La Trompette*, ch. 7; Percival Kirby, ‘The Trumpets of Tut-ankh-amen and their Successors’, *Journal of the Royal Anthropological Institute* 77 (1947): 33–45; Percival Kirby, ‘Ancient Egyptian Trumpets’, *Music Book: Volume VII of Hinrichsen’s Musical Yearbook* (London: Hinrichsen, 1952), 250–5. NB that Kirby’s third trumpet in the Louvre is that identified above as part of an incense stand.