

# Pitch and related problems

---

**From *OHTA NEWS*, vol.1 no.2 October 1977**

Changing the pitch of an organ is a tricky business to be avoided when possible, which it mostly is.

Insofar as there is such a thing as "standard" pitch, it has risen about a semi-tone over the last two centuries. The difference between the old A.415 and the modern A.440 is exactly a semi-tone.

People don't usually mind singing a bit low but they hate having to strain themselves upwards, so a low-pitch church organ is likely to be popular rather than the reverse. It is only when an organ has to play with modern orchestral instruments that pitch becomes at all critical. Noel Mander has recently made a continuo organ with an extra pipe at one-end of the keyboard and the keyboard can be moved sideways so that it can be played at 415 or, 440-according to whether it is being asked to work with a baroque or a modern ensemble. Such an arrangement does, necessarily, assume that the organ is tuned to equal temperament and many musicians are becoming increasingly critical of the raucously wide thirds which it entails. To anyone who has become accustomed to mean-tone tuning, its musical superiority in the keys it fits is really dramatic; (and only A flat is really unpleasant). This is worth mentioning because equal temperament tuning did not become universal in organs until within the last hundred years, so that in a conservative continent like Australia an organ might well come to light tuned to one of the compromise systems. To alter it would be a considerable misfortune.

If the pitch of an organ really has to be altered, the hope is that it is now at 415. It is then a simple matter to move all the pipes down one slot and make a new set of pipes for the top note. The redundant pipes should be carefully preserved. To change less than a semi-tone involves a compromise of some kind which resolves into a choice of evils.

The worst solution undoubtedly is to cut down all the pipes, since this is pretty well irreversible. In the bottom octave of a principal, the change in diameter between one note and the next is about two millimetres which may not sound very much; but it does make a surprising difference in harmonic structure. On a slide-tuned organ, it is instructive to tune one pipe down to the pipe next below it; the change in quality is very noticeable.

So it is better to move the pipes down a note (preserving the redundant bottom pipes, as previously) and fit tuning slides. This at least makes it possible to go back to the original state, if some future generation so wishes.

This leads on to the merits of tuning slides, a topic which begets so much bad feeling in the U.K. that it once almost got to the point of litigation between the contending factions. Some say they make no difference at all and others say they ruin any old organ.

To put the point to the test, some six years ago I persuaded Noel Mander to apply slides in a random pattern to an 1600 chamber organ. I then tried, audibly, to judge which pipes had slides and which had not. I was wrong in at least 50% of my answers. Fearing that my ear was at fault, I invited the principal adversary of slides to undertake the same selection-test.

The invitation was declined.

Nevertheless, it probably is true that fitting slides to an old organ does marginally affect its tone quality, but on balance, I believe it is the lesser of various evils.

Anyone who has seen the pipes of an organ two or three hundred years old will know what a pitiful sight the pipes (the smaller ones in particular) present, as a result of cone-tuning. In the Schnitger organ at Alkmaar (unquestionably one of the world's best half-dozen) many of the stops are now forbidden to be tuned, so fragile have the pipes become through repeated cone-tuning. Nor is it only the tops of the pipes that suffer. Rough use of the cone can also seriously deform the mouth.

If the chests were completely stable, it would be safe to restore the pipes and leave them cut to length; but chests a hundred years old or more very seldom are stable, especially when in competition with a modern heating system. When the heating has been really vicious, the probability is that the chests are so dessicated that there is no possibility of restoring them with any hope of long-term reliability. We found this in the recent rebuild of the great Willis organ in St Paul's Cathedral, London, where relative humidity had often been driven as low as 15%. There was no option but to discard these superbly made structures and substitute modern ones capable of withstanding the high temperatures and low humidity which the customers now, unhappily, seem to expect. This is a sad thing from the conservation standpoint. At Ely Cathedral, by contrast, where I was also the consultant, there never has been any central heating (and jolly little else for that matter) and the 1908 Harrison chests were in mint condition and did not even have to be taken back to the workshop.

In conserving an historic organ it clearly is most desirable to conserve also the chests, action, and console, and if, as the price of preserving the chests, it is necessary to fit tuning slides, I believe that on balance this is the right thing to do.

Annoyingly, in a completely new organ, there really is no need for slides. The chests are so stable that there is nothing to make the pipes go out of tune. In my own Mander, I doubt if I have tuned a dozen of the pipes in the dozen years since it was made.

Pitch alterations also can raise quite serious problems with reeds. Successive raisings of pitch at St Paul's had brought most of the reeds to the limit of regulation; and some of them beyond.

Summing up; if you are thinking of altering the pitch of an organ; if it can possibly be avoided, don't do it.

Cecil Clutton C.B.E., Hon. F.R.C.O.

---

Mr. Clutton has a considerable reputation as an organ historian and consultant. It was on his initiative that the Church of England Council for the Care of Churches (now the Council for Places of Worship) set up their Organ Advisory Committee in 1954. This Committee has actively encouraged the preservation of historic organs. Mr. Clutton's assistance to the OHTA Steering Committee has been most valuable.

---

© The Organ Historical Trust of Australia