

## Rattle and hum: Extraneous noises and how to cure them

(Originally printed in Lute News 44, December 1997)

Having sorted out a bewildering variety of different buzzes on various students' lutes, and been surprised by the cause of one on my own, I thought it worthwhile to jot down some of the commoner causes (and cures) for the benefit of anyone else so troubled. Almost anything on a lute can buzz if given half a chance and the following list is unlikely to be comprehensive! I can be surprisingly difficult to track down the site of the noise, so you're to avoid glum hours listening to your lute making avant garde noises, it's best to be systematic in your diagnosis, which basically means identifying when the buzz occurs.

1. Buzz centred in the body, which comes and goes, getting worse when the weather is dry (or the lute is in a heated place), and improving or disappearing when the humidity rises.

This is almost certainly a loose bar inside the lute, or a crack in the back of the soundboard, either of which require a maker's attention. Note, however, if you use overwound gut strings it could also be these, as the gut core of the string can shrink away from the winding in dry weather.

2. Buzz occurring on similar or related frequencies, (for example, all the Gs buzz).

This is probably either a loose end on one of your G (etc) strings, cured by pruning, or (less probably) a loose bar.

3. Buzz occurring on open strings only.

This may be caused by a faulty string, usually a wound one, or the first fret is too high, or the string is buzzing in the nut slot. Change the string if it looks dodgy. Check the fret, by cutting it off if necessary; you can always replace it. If it seems to be a buzz in the slot it's best dealt with by a maker unless you're very handy with a microfile. Beware – it is all too easy to make a slot worse!

4. Buzz occurring on fretted notes only.

If several buzzes occur at the same fret on different strings, then you need to change some frets. If several buzzes occur on the same string at different frets, perhaps the string is tied a little too low at the bridge, or the nut slot for that string is too deep, or it's a faulty string. Strings can be pulled up by hooking a finger underneath them at the bridge, and pulling quite firmly away from the soundboard; this has the effect of making them lie higher on the bridge. If the nut slot is too deep a piece of paper under the string makes a reasonable temporary measure, until you can consult a maker. If multiple courses buzz on multiple frets along the neck, horror of horrors, it may be that the neck is

warping backwards, and needs either to be replaned, or removed and reset – major surgery. This defect is mercifully rare; it is much more common for necks to come forward under prolonged string tension, causing the opposite problem, an action that is too high at the higher frets.

5. Buzz occurring on any note on a course, whether open or fretted.

Typically this fault is found on double courses of thin wound strings. The strings are either mismatched or are due to be changed. Wound strings can shed little rings of winding which then trundle up and down the string each time it is plucked, creating a spectacular buzz. They are very hard to spot so check carefully with eyes and fingers.

6. Loud rattle on open diapasons of archlute, theorbo or swan-necked baroque lute, especially on the lowest courses. Typically worse when the string is plucked hard.

The upper nut is either too low, or too curved, causing the strings to rattle against the edge of the body. This can also afflict extended neck lutes if they are tuned down to a lower pitch: the neck can settle back a little from its normal tensioned state, causing the strings to hit the body of the lute where they cross the edge of soundboard. The nut can be raised with a sliver of wood or card beneath it, but take care not to leave it perched precariously in a too-shallow slot. If the nut needs major reshaping consult a maker.

7. Sitar-like whining noise, confined to open strings

The sitar's whine is created by a ramp which almost touches the string at the bridge. When the string is plucked it vibrates against this ramp. Exactly the same effect can be achieved accidentally by a poorly-cut nut slot which is only partially in contact with the string. Such a whine can also be caused by inadequate string break at the nut; particularly common on extended lutes and baroque guitars. This can sometimes be cured by rewinding the string to lie lower on the peg (on a guitar) or to pull more sharply sideways on a lute or theorbo. The latter is not ideal because a crookedly wound string may cause the peg to pop out, but is useful in emergencies. To solve it get a maker to tidy up the nut slot.

8. Sitar-like whining noise on open and fretted notes.

This is probably caused by two strings vibrating against each other somewhere between nut and peg. Look particularly carefully at any strings which touch each other in the pegbox. This can be cured by rewinding the strings so they don't touch, or if this is difficult, by inserting a small snippet of cloth between the offending strings. This is particularly common with lots of courses and long pegboxes.

9. Erratic little buzz on any note, which comes and goes, and seems to be unrelated to climate. It may paradoxically get better if you put the lute in its case and pick it up again.

This may be a loose endpin, a loose pip or a collar on a peg, a hard buckle on a strap or a bit of rubbish, like a woodshaving, trapped in the pegbox. The mere act of moving the lute can cure this temporarily, but to solve it permanently you need to check all of those points carefully, and reglue anything that's come loose. You may also need to hold your lute with the rose facing down and shake it periodically to remove odd bits of grit and dead insects that inexplicably end up inside lutes. Invariably some of them will be too big to come out through the rose holes, but you can remove some rubbish in this way.

#### 10. Muffling of a gut diapason, sometimes with an accompanying buzz.

This is probably the string starting to unwind. Somewhere along the string's length you will find a little hair coming unravelled. You can prolong the life of the string and restore its sound by pruning the hair back to the string with nail scissors.

As a general rule the following precautions can prevent a lot of noises. Keep your lute in conditions with at least 50% humidity; this means installing some form of humidifier in the room where the lute is kept, if your house is centrally heated in winter. Alternatively a damp flannel placed in a protective polybag inside the case (and not touching the lute) will do the trick. When you change strings prune all ends neatly and closely at both bridge and peg ends, especially wound strings (except nylon-on-nylon wound strings which you must not cut!) – little stray lengths of metal winding wire brushing against soundboard or pegbox walls are among the commonest causes of buzz. Check that the strings lie tidily away from their neighbours in the pegbox. Keep your frets in good order and change any that look worn. Make sure that you use the correct size of gut for each fret.