

# Busting the Buzz

6.10.2017 Workshop for Sarah Goodroad's Boulder Ukulele Group by John Sperling

Any Ukulele can start with or develop extremely annoying buzzing. Although the cause can be difficult to track down it is typically caused by just a few things.

## Causes of Buzzing

Improper or no setup, inattentive construction, wear, hard playing, and lack of instrument maintenance, loose braces, string wear, humidification issues, warpage, and fret issues are typical causes of buzzing.

Solving the mystery of the cause of the buzzing is the first step in finding the remedy.

Do not be misled that only cheap poorly constructed ukuleles have buzzing issues. Sara and Alan have Kanile'a Ukes, one of the finest made instruments available and both have had buzzing issues. Alan attributes his to playing hard while Sarah had three issues: a long, untrimmed string (peghead bridge so inside the instrument and unseen), a nut groove issue, and a high fret....We should all play so well/hard and on such fine instruments. I've known KoAloha's and Kamaka ukes that also have had issues so if they can, we can. Additionally, if you have Ukulele Acquisition Syndrome you will ultimately end up with buzzing sooner or later.

## Discovering the Cause & Remedies

Determining the **Source** of the buzzing:

Where does the buzz come from:

1. Headstock?
2. Bridge?
3. Nut?
4. Beyond the nut towards the tuner?
5. Muted strings buzz or there is rattling when shaken?
6. Only buzzes with open strings?

7. Just when strings are fretted?
8. Both open strings and when fretted?
9. Only certain strings buzz?
10. Only around certain frets but on multiple strings?
11. Only with certain notes are fretted?

It may be necessary to have a friend assist in determining location of the buzzing whilst plucking or strumming. Determine if:

Headstock  
Nut  
Saddle  
Bridge  
Body  
Frets

Not surprisingly, for those who know me, I will begin with **Strings**:

1. If worn or old replace them. Every instrument maker says you should restring every six months or at least every year. If you play a lot, more often. If can roll over strings and feel wear (roughness or nicks) in bottoms over first few frets replace them.

2. Trim string ends

bridge: definitely

nut: trim or coil your excess string ends

2. Strings stretch. Are there overlapping windings on the tuning posts? Loosen the strings and pull snug through the post hole and rewind w/o overlap and trim or coil.

### **Headstock:**

1. Loose tuners or hardware cause buzzing. Tighten loose screws.

2. Worn gears can cause madness and require replacement. Check tuner shafts and bushings when restringing.

3. Tied on straps at the headstock can cause buzzing especially if contacting strings.

### **Nut:**

1. If you don't hear a buzz when fretting the first fret but you do on the open string and or when applying pressure behind the nut but before the tuner

then you've got string vibration in the nut slots. The grooves are likely cut too flat and need to be cut at an angle matching the headstock angle.

2. The nut grooves have worn or were cut too large or too deeply or the string diameter is smaller than the cut or the nut was cut for a low G and you have a high G. Although you may desire to replace the nut a temporary or exploratory fix may be loosening the string and folding a small filler of paper or even folded aluminum foil in the nut slot and retuning the string and observe if there's a difference. Another common fix for oversized nut slots is a baking soda or bone dust fill and then a drop of super glue and recutting of the slot at right size and angle. There are special files available for this purpose. If not comfortable with this repair see your local Luthier.

### **Hardware:**

Besides tightening loose tuners there are many ukuleles with electronics, pickups, truss rods, and jack ends all of which come loose and require tightening or fastening.

1. Loose wires that rattle and aren't attached need to be secured (preferably to the back or sides).
2. A loose pickup jack is a common cause of buzzing.
3. A loose strap button rattle has driven many a good uker to drink.
4. Loose truss rods (Mya-Moe brand, many baritones) are often overlooked.
5. Where is that humidifier? Yep, foreign bodies inside the ukulele are worth searching for.

### **Braces:**

An internal brace is a surprisingly easy repair with the proper tools and clamps... that sound hole is pretty small.

This happens on even the best of instruments as those makers are much more sparing of their glue application and brace sizing.

A flashlight and mirror may allow you to see a loose brace. Buzzing will seem to come from the bridge end, there may be rattles, buzzing will occur with both open and fretted strings, and only certain strings may buzz or on certain frets.

Body cracks cause buzzing and need to be repaired.

### **Bridge issues:**

All the buzzing sources not heard in the headstock can be caused by the bridge.

Yep, about half the forty pounds of the string's tension goes into the bridge which is intentionally constructed much more delicately than the headstock/nut assembly in order to allow the face of the ukulele to vibrate and make that sound you love.

1. Bridges come loose or along that road become partially loose and need to be reglued. Buzzing ceases when you press upon the bridge.

2. Saddles can be too low which means either shimming with paper or replacement. Both are inexpensive and quick. This will be identified by buzzing along much of the fretboard and be more noticeable when you play higher or lower on the fretboard. If you play hard and get buzzing a higher saddle will typically be desired. Easily shimmed saddles that are too low assist in determining what height a new saddle height should be and simply loosening the strings and shimming is a fast, easy, and injury free fix.

3. Saddles can be loose and require shimming in the width of the bridge groove the saddle fits in. Pressing on the saddle to eliminate buzzing will diagnose this.

4. Saddle wear occurs and small grooves are formed from the string's vibrations. A minuscule amount of sanding may resolve this. This will be observable as buzzing and vibration on the saddle itself.

5. Saddle shape with similarly identifiable buzzing typically can be resolved by reducing the flatness by minuscule sanding of the edges to relieve them.

6. Saddles are readily available and inexpensive and can be sized and fit to the bridge and the desired action with a variety of grits of sandpaper.

7. Tonation and buzzing issues caused by the saddle may be improved by utilization of beads rather than tying the strings to the bridge as is most commonly seen since it alters the string angle of approach to the saddle by a few degrees. This is the reason some Makers utilize bridge pin or kerf slotted bridges.

### **Fret issues:**

1. Buzzing at the neck and nut end is often caused by the nut when disappearing when fretted at the first fret...but not always. It is the most used fret and they can get worn, work loose/become high, bend when whacked. Close examination and checking with an accurate straight edge will determine any high frets. Rocking on a high fret will indicate the problem which can be repaired by dressing the fret which is essentially a filing and polishing process. A fret may be hammered down if raised. Bright lighting assists in the examination of frets.

2. Fretboards warp. When checking fret heights also determine if the fretboard is flat. Humidification issues are a frequent cause of problems and

warpage can be concave or convex with buzzing at the ends or center of the fretboard. Humidification to 40-65% for weeks will determine if neck replacement or surfacing, fretboard leveling, is required.

3. Worn/low frets may be observed by visual inspection with a straightedge and good lighting, surface wear like flat spots, or the same note produced when fretting on two adjacent frets. High frets will produce the same symptom but you already can check for high frets.

4. High frets are typically hammered to level, filed, or replaced if damaged.

5. Fret wear can be resolved by rounding and polishing multiple times before a refretting is necessary.

6. Colorado's climate often results in fret ends protruding which requires filing and polishing and although not buzz inducing can really tear up your hands.

---

### **Sources of my Information:**

Innumerable Luthiers have spent time speaking with me, writing articles or books, doing interviews, producing blog sites and I know I've forgotten many but here are those I recall.

Gordon Mayer, Mya-Moe  
Chuck Moore, MoBetta Ukes  
Andrew and Joel, Hawaiian Music Supply  
Robert Yates (Uncle Uke), Hawaiian Ukulele  
Holualoa Ukulele Gallery, Sam Rosen  
Joe Souza, Kanile'a Ukuleles  
Hawaii Ukulele Guild  
Hawi Ukulele  
John Kiernan, Kiernan Music  
Folks at Woodsongs  
Luthiers at Red Rocks Community College  
Ukulele Guides  
Ukulele Underground  
Stew Mac Luthier Supply  
The Ukulele by Dennis Gilbert  
The Luthier's Handbook by Roger Siminoff