Knot Just Strings Saturday, May 9, 2015

Workshop for Boulder Ukulele Group by John Sperling j.sperling@comcast.net

[Throughout this handout this font indicates my writings ~others from sources as noted.]

"Strings are life"

Mimmo Peruffo, instrument/string historian, maker/owner of Aquila Strings

Without the body of your instrument to resonate most of the energy your strings produce would be lost (example is the 'strings on a plank ukulele').
As it is only 50% of the string vibrations and energy goes through the bridge and into the body of your ukulele. The other 50% goes to the nut. This is also why loose tuning gear will rattle and make you crazy. Additionally loosely fitted bridge bones can prevent good transfer of energy.
It's also why the neck needs to be so stout. Tin cans and string work...

Contents:

I have attempted to be clear and obvious about which information is proprietary and label and credit the sources...any errors or omissions are mine.

Thanks to Dale Webb, owner of Magic Fluke for the donation of the fingerboard on the Ukulele on a plank for this workshop.

When traveling with your uke in car or plane please loosen the strings to reduced stress on the instrument.

Always keep your instrument humidified 40-65%. Keep it out of direct sunlight/heat and always in a case with humidification. A wall hanger or stand are a better idea than a chair or couch or the floor as some distressed ukulele crushers can testify.

String breakage, buzzing, and tone issues are often a fret, bridge, or nut issues. Since the breaking string is under tension a break at the nut, for example, will seem like it's from perhaps the third fret. Sharp frets (they're supposed to be polished OOOO steel wool or 600 grit sandpaper) and bridge bones that aren't smoothly rounded can cause breakage and wear especially in the string grooves.

On how often to change strings:

Consensus from manufacturers is every 3-6 months depending upon frequency of playing. I have never seen a manufacturer suggest less often than every year.

Strings wear out over time and their gradual deterioration is not noticeable. Nicks, fraying, fuzziness, out of shape (roundness) are typical symptoms. Examples are on the string board.

If you didn't change your underwear or socks with some frequency you'd become unpleasant and so our ukes become with worn out strings.

Wound strings seem to last about a third of the time of smooth unwound stings but often hold their tune a bit better.

Wear on strings can be felt even if not seen. Especially on the first few frets with a fingernail drawn along the loosened string.

From Ohana Ukuleles:
Q: How often should I change my ukulele strings?
A: We recommend only changing the strings when you see any physical wear and tear, or if they are stretched so much (due to time and/or frequent playing) that they no longer stay in tune. If you play about an hour a day, you should change the strings every 6 months or so. We just don't recommend changing strings beyond what is necessary.

The link the page after next has video comparisons of 8 ukes with Tenor strings, 4 of concert, and another of three other strings, and a Kala Pearl comparison in

videos with sound all on identical ukes. The blind tests at the end of each (so you can't tell what string set it is till they tell you at the end but the short comparisons are telling as you really will/won't hear a sound you like). Don't concern yourself with "I have a tenor so I don't need to listen to a concert".

I've tried every brand in those videos. I've tried most of them on at least two different ukes. I found that each string set sounds different on each uke and what I like on one I don't on another. I imagine that each of you will have similar experiences.

My observation is that there are substantial differences between each uke and each string set on each uke……and I just realized how much better a player I'd be if I'd practiced playing rather than fooling around trying all these different strings.

To complicate your choices there are different tensions and feels to each. As an example the Worth CT and BT are just two of the Worth strings available in clear (usually considered brighter) and the brown (usually considered warmer) and there are three thicknesses in each type for each size Uke.

There are different colors available from different manufactures too: gold, clear, white, black, brown, rainbow colors. The feel, tension, and the way strings play are quite different as well.

I have found some string sets that sound quite hideous on one uke but are my favorite on another. Some strings make different uke buzz. Some really accommodate playing hard, others are good for fingerpicking, and quite frequently I've tried different strings from different manufacturers at the same time in different positions.

Here is James Hill's take on strings:

What kind of strings do you use? (from JamesHillMusic.com)

I use a custom set of strings put together by Mike DaSilva. I've also used (and recommend) Hilo strings which are made in Hawaii by the Pegasus Guitar Company. I use Aquila strings on my banjo ukes and Martin steel strings on my Mya-Moe slide ukulele. For my ukes that use the "linear" (i.e. low-4th) tuning, I use a D'Addario 0.040 gauge (or higher) nylon string for the 4th string.

I'm not sponsored by any of these companies, I just like their strings.

I believe there are only half a dozen or so actual manufacturers of strings in the world but different brands get them to do their own formulations. I have found some strings that are crisp on one instrument are muddled on another. Aquila currently has almost 50% of the string market and that's quite a recent development.

You have to play around and try some but if through listening to these videos linked from the Ukulele Site (text below also from the Ukulele Site) you can get a sense of what type of sound you are looking for then it'll be easy to narrow it down which sets you'd like.Try to decide on how crisp, warm, loud, bright, and clear you desire your uke to sound.

Know that your uke will sound very different than mine with the same string sets. Many different ukulele makers put particular brand strings on their instruments as they are attempting to secure a particular sound but it may not be the sound you desire.

The longest any Uke Maker has said you should play a set of strings is a year. Most say 3-6 months. I've worn out sets in less time when learning (overly hard fretting) and playing too hard. You can feel the string qualities and feel what worn out strings are like on the string board.

Link to 8 tenor, 4 concert, Kala Pearls, D'addario vs. Aquila strings:

http://www.theukulelereview.com/2012/10/01/ukulele-strings-nutshell-and-new/

Ukulele Strings | Ukulele Resource Center (from the Ukulele Site)

[by Andrew Kitakis, owner of The Ukulele Site/Hawaii Music Supply]

- ***Aquila****'s are the most popular and probably best in the tension/volume ratio. D'addario's new version Nyltech , made in conjunction with Aquila, have a slightly higher tension but better articulation and often better intonation. I predict those becoming more popular as people try them*
- 100% percent **Fluorocarbon**. Many string companies, 100% same material. So who cuts their fishing line better? Density and diameter can attest to the differences but they all have a similar sound. It's like different chefs serving only eggs. They can be different, but not that different. But don't get me wrong, the variety does serve a purpose. You can often match the best for your uke and style

by trying different companies versions of ….100% Fluorocarbon. Come to your own conclusions.

- *Then you have the Multi-filament **Nylon** D'addario, GHS and a boatload of small offshoots and manufacturers that color and label nylon.*
  Often Ukulele Manufacturers do it because they need strings for their instruments. Their choices on tension and diameter may be your favorite. All depends on your instrument, technique, and opinion. My father (owns Koolau and Pono) originally worked with classical string makers in Argentina for Ko'olau Golds. Mike Upton with Kala recently also found string makers in Argentina. That leads me to..
- ***Microwound!** Savarez has wound nylon trebles, similar to these. Kala has the Red strings with the same principle, but I believe the new Kala Pearls are the best offering in a microwound string. Microwound? I'm pretty sure Kala just made up the word, but I think it's appropriate. These strings are a very thin flat-wound metal that squeak about as much as regular plain Aquilas, and get wound like sustain, clarity and attack. I think they are a top option for a very solid built instrument.*

A real lightly braced instrument that could hold up Aquila tension over many years would suffer from these. But, the two models in the video are able to handle. Nowhere near the edge of the structure to resonance equation. The Islander MT I put these on did not like this amount of tension. But the newer Islanders have a slightly heavier bracing. So these bring a better tone without compromising the stability. [Your Uke is probably fine but IF you want me to check let me know and I'll have a mirror and light at B.U.G.—but a real concern for some of the cheap ukes where I suspect I could pull the bridge or top off easily]

If you see a string set pull a belly where there wasn't one. Don't use them! A belly can happen slowly over time and not do anything too drastic. [I can show you the belly I've got on my uke from Kala Pearls if you'd like—pretty minor] But if you see a quick reaction from the top, that's a red flag. If you don't want to waste a set of strings and can get away with it, tune down a step.

10 years ago people were still using the GHS strings or Hilo strings, and almost always with a wound third and high G. In the last few years Aquila came up like a wave and dominated the market. So what's the deal with these new strings? They're all wound? Maybe you're thinking, "but how's that gonna work when I don't even like one wound string in my set?" Good question…. Because they aren't like other wound strings. They're flat wound over a nylon multifilament don't squeek. If they do I guess you could say it was a micro squeek. BUT… the attack and articulation are as good as I've heard, and most instruments can handle this tension perfectly fine. Inquire if you are not sure.

Aloha from HI. Add your 2 cents below. [SouthCoast has done flat-wound polished silver metal strings with a polish that is nearly impossible to feel the winding on the string board]

(We sell many different ukulele strings at our store and online shop- TheUkuleleSite.com/Strings) [stock 12+ different string companies with multiple sizes and types]

Another great source for a wide variety of strings and much more is: Elderly.com

One more with some different brands: Aquila, Black Diamond, Martin, Curt Mangan, D'Addario, Dunlop, GHS, John Pearse, La Bella, Pahoehoe, RotoSound.
http://www.juststrings.com/ukulele.html

String Resources (just some of so very many)

SOUTHCOAST:
String supplier with extraordinary discussions of string materials, terminology, tunings (most comprehensive), accessories, and fabulous tips and amazing strings (flat wound/polished strings that don't feel like any other). More information about strings then I've found anywhere else.

http://www.southcoastukes.com/stringuide.htm

AQUILIA:

More Ukes have Aquilia on them than any other manufactures' strings....there are six different types of Aquila strings for ukuleles that are each quite different in color, sound, and feel.
The following pages have some exhaustive information from Aquilia which seemed the appropriate source as more of you have Aquila strings than any other brand.

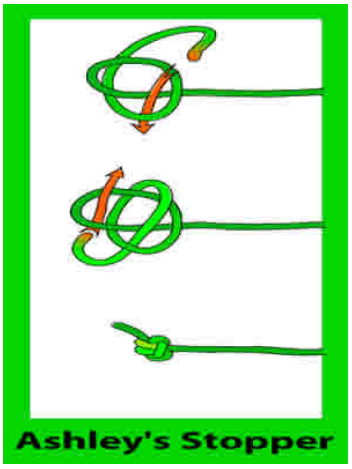
http://www.aquilacorde.com/modern-instrument-sets/modern-instrument/3190/ukulele/

Worth:

"Strings are one of the important elements of structuring sounds.
It is difficult to find satisfying strings and features adapted to each instrument.Some strings have power(volume) but not a good balance.
Others have good balance but low tension.It is hard to fine a product that gives total satisfaction.
Though buying and trying strings many times,they were always inadequate! (many customers may have felt the same way).
Finally,"WORTH STRINGS" decided to produce and sell these excellent Fluoro-carbon strings.
Fluoro-carbon is used for fishing lines.They are flexible,durable,and unchangeable in any type of environment."

http://worthc.to/english/w_strings.html

There are 46(!!!!!) different Worth Strings.



Ukulele Makers like MYA-MOE use them for all of their ukuleles. There is no larger selection of thickness and feel and sounds so reading about these strings will be helpful if for no other reason than the educational process.

Kala:

Kala makes Ukuleles and two distinctive types of strings: Kala Reds and the unique Kala Pearls (flat wound polyamide over nylon multifilament core so all four strings are wound but astoundingly smooth and as quiet as unwound nylon strings with brilliance, projection, and deep tone). They sell their Ukuleles with Aquila Strings on them and they featured with descriptions on this website along with their own strings.

http://www.kalabrand.com/ProductPages/StringsUkulele.html

Savarez:

Maker of a wealth of strings for a wide variety of instruments. 2 sizes for Ukuleles

http://www.savarez.fr/anglais/corde-savarez.html

D'Addario:

Makes a wealth of strings for a variety of instruments and partnered with Aquila for Nyltech.

http://www.daddario.com/DADProductsUkulele.Page?ActiveID=3781

Ukulele Materials [D'Addario site]

String materials can have a dramatic impact on your tone, feel and string life. Here is a quick look at D'Addario's diverse selection of Ukulele strings:
Clear Nylon – The traditional standard for Ukulele strings. Balance of warmth, brightness and projection with an ultra-smooth surface.

ProArte Laser Sorted Nylon – Each ProArte treble string is sorted by a sophisticated computer-controlled laser machine which performs diameter/tension checks, insuring true sounding, precisely intonating strings.

Black Nylon – A warmer, mellower tone than clear nylon and a popular choice for traditional Hawaiian Ukulele.

Nyltech - Developed in cooperation with Aquila, an exclusive combination of materials designed to deliver an optimal combination of warm gut-like, yet punchy tone and comfortable playability.

Titanium – A contemporary treble material with attractive purple hue, smooth feel, brighter tone and increased projection

[As part of their site they offer string tension/string qualities/string end alternatives to design what what you wish in a string.]

http://www.stringtensionpro.com

Ko'olau:

For many years we have worked closely with the flaminco guitar string makers in Argentina. As with guitar strings, there many options, and many opinions as what is best. Sometimes it's simply a matter of a different tone and volume, not necessarily a different quality. We have three different types of 'ukulele strings. Each are different.
1. Ko'olau Gold: these are our original nylon strings. Whether played as all plain nylon, or combined with wound 3rds and 4ths, Gold nylon produces a deep, warm, yet strong projecting tone.
2. Ko'olau Mahana: nylon strings are clear. Similar to Gold nylon, but slightly warmer in tone.
3. Ko'olau 'Alohi: technically not a nylon material, but instead a monofilament. Being slightly harder and more dense than nylon tone is brighter with stronger projection.

http://koolauukulele.com/products-page/strings/

GHS:

A Battle Creek, WI manufacturer of strings for a dizzying array of instruments with a multitude of ukulele alternatives too. To see them go to products on the link but I include the home page so you can see a string factory video.

http://www.ghsstrings.com/videos/1967400

Kamaka:

Since 1916 they've been making ukuleles and have from four string soprano/concert strings all inclusive up to eight string baritones.

http://store.kamakahawaii.com/SearchResults.asp?Cat=56

String Brands Ukulele Makers utilize for their ukes:

Aquila: Kanile'a, Kala, Ohana (but also sell GHS, Hannabac, La Bella, and Worth), Lanikai, Oscar Schmidt, Risa, Luna, Cordoba, Fender
Worth: Mya-Moe, KoAloha (Worth CM)
D'Addario Mya-Moe, Nyltech: Magic Fluke [also sell: Aquila Reds and New Nylgut, Fremont (black fluorocarbon), Hilo (Hawaiian standard till past decades with new string technology), LaBella (black nylon), Lucy's Ukulele Multi Colored Nylon (just plain fun).

Ko'olau: Ko'olau, Pono, Risa
Gold-original nylon w/deep, warm, yet strong projecting tone
Mahana-clear nylon but slightly warmer in tone than Gold
Alohi-monofilament being slightly harder and more dense brighter w/stronger projection
Kamaka: Kamaka

GHS: Oscar Schmidt, Risa

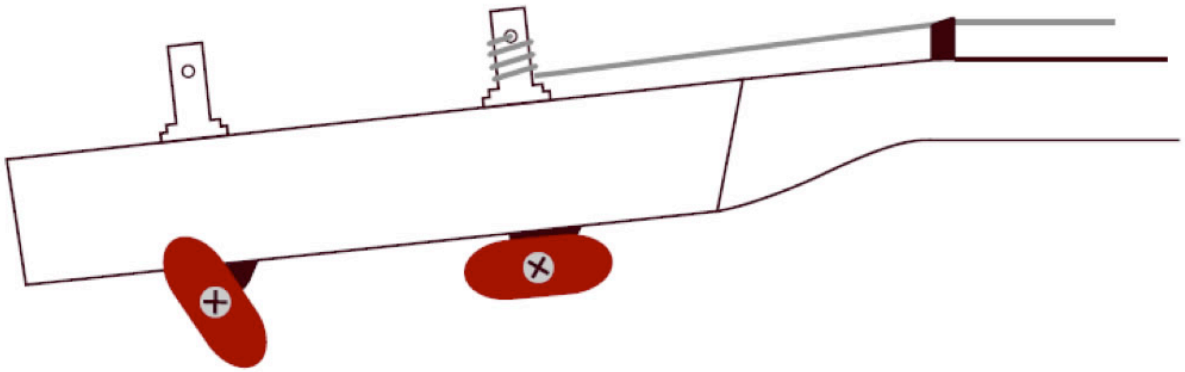
Savarez: Collings

Moorebettahukes.com

Videos and photos of changing strings:

My instrument buzzes after restringing. [from Mya-Moe website]

The most likely cause is that the string is improperly wound on the tuning peg and it doesn't have enough pressure downward on the nut. Make sure that the string exits the bottom of the peg, so that it has enough of an angle over the nut, as depicted below.



The intonation is off.

Your Mya-Moe instrument was carefully built and strung with perfect intonation. If the intonation is off, the most likely cause is either a worn out string, or a new string that is faulty (out of our first 800 strings, we had 4 that were bad).

Restringing

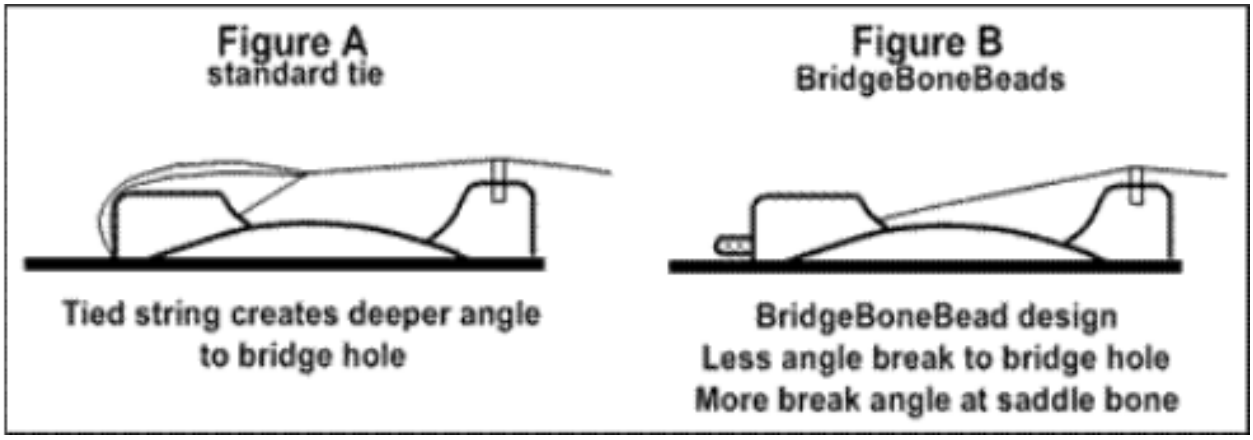
On typical ukuleles, you can safely remove & replace all the strings at the same time. [please clean your uke/fretboard at that time]

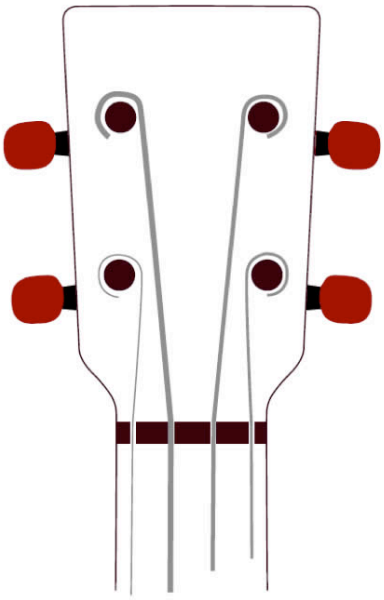
To restring, first remove the old string. Then tie the new string at the tieblock/bridge as follows:

* through the hole
* over the top of the tieblock
* around the string

* through the loop twice

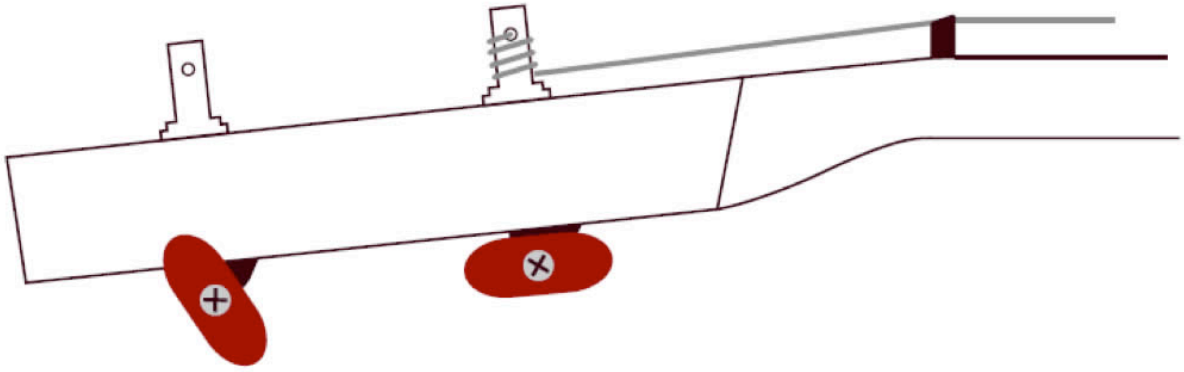
Bridge Beads are an easy and quick alternative to tied strings and accommodate a lower angle for the bridge approach which may result in improved tonation in some instances.





Then pull the string up to the headstock. No slack is necessary. Bring the string over the nut and wrap it two times around the post of the tuning machine before threading it through the hole in the tuning machine. When viewed from the top, the strings go in a counter-clockwise direction on the two tuning machines on the left, and in a clockwise direction on the two tuning machines on the right.

The Ashley's Stopper Knot is ideal for bridges that have pegs or require a stop knot but an overhand know or double overhand knot will work as well.



Ensure that the string wraps in a way such that it goes down the post, not up, as it is wound tighter. If the string goes up the post, it will not put enough pressure on the nut and you will likely experience excessive string buzz & vibration.

Frequently as strings stretch there will be too much string on the post and over wrapping will occur with horrific consequences as to sound quality. Simply loosen the string and tighten pull it through to reduce the wraps and then you can cut off the extra.

Here are videos of restringing for machine tuners, peg-head tuners and slotted headstocks:

http://www.myamoeukuleles.com/restringing.html

I encourage review of the wood selections and tone samples on this excellent site:
http://www.myamoeukuleles.com

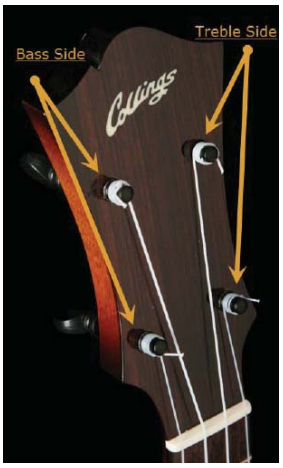
Collings Guitar and Ukulele have an excellent step-by-step directions for restringing:

http://www.collingsguitars.com/Images/faq/Ukulele Re-Stringing 9.20.13.pdf

What follows is the first of three pages on this the Collings site showing how to restring.

1. RE-STRINGING A COLLINGS UKULELE

To aid identifying the proper tuning posts, these instructions use the terms “bass side” and “treble side” to refer to pairs of posts on either side of the instrument like shown below.



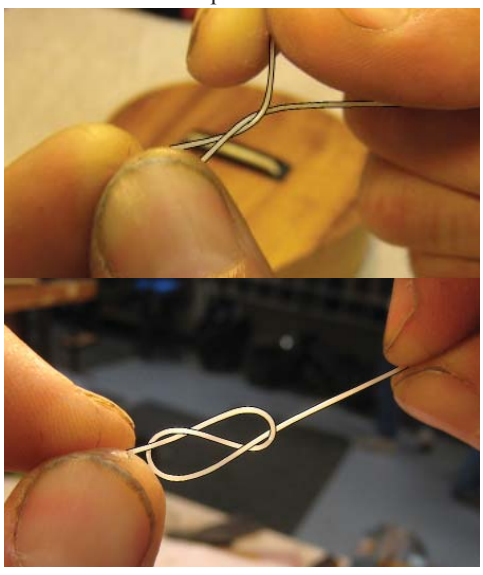
2.

Collings ukuleles use a standard bridge that holds the string via a small knot that is tied at one end. The slots for these knots are as shown.*

(*The pictures included in this guide are of a bridge with a rough cut bone saddle, this is not representative of its nal appearance on a nished instrument)

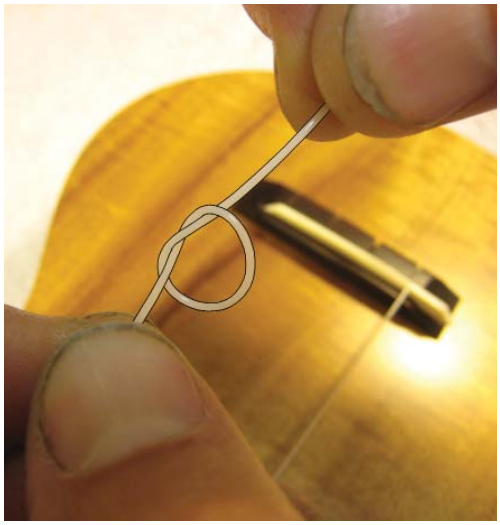
3.

To tie the string knot for the thinner diameter G and A strings, rst loop the string like the photo below, then thread the tip back through your loop creating the knot shown in the bottom photo.

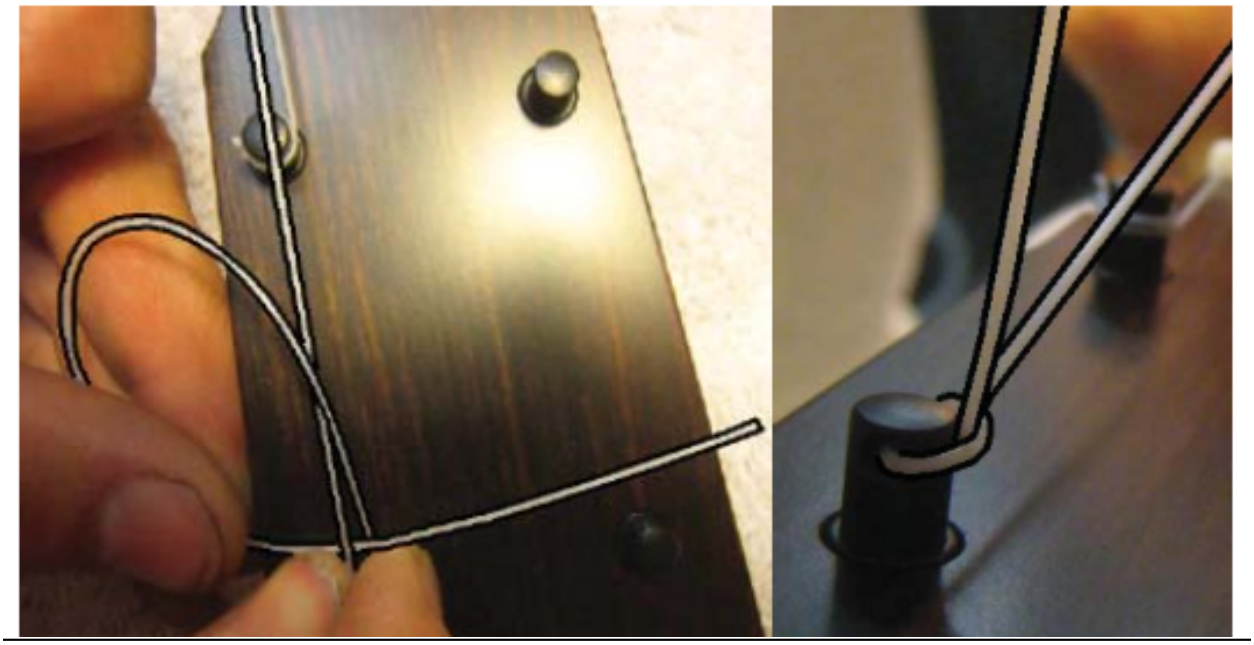


4.

To tie the knot for the thicker diameter C and E strings, a simple looped knot like shown below will be all you need.



The last photo is the best/easiest/fastest way to secure your strings to the tuning posts.



Many Ukulele Makers and Luthiers suggest this as the way to fasten to your tuning posts.

Dear Music,

Thank you for being there when nobody else was.....

Cumulative String Tension (in lbs)

# of Strings	Soprano	Concert	Tenor	Baritone	Classical Guitar
4 Strings	~21	~33	~39	~53	
6 Strings			~65		~86
8 Strings			~83		

From the Aquila website:

WHAT IS NYLGUT® ?

Nylgut is a synthetic material we discovered and copyrighted in 1997: it has the same mean specific weight as gut and a low degree of humidity absorption – only 10% that of nylon.
We could even call it "synthetic gut".
In theory a gut string and a Nylgut one should have the same diameter.
But since nylgut is quite 'stretchy' we advise using a slightly thicker diameter.
Pull carefully but resolutely and repeatedly the string with your fingers while tuning it for the first time

WHAT SHOULD I DO WHEN I PUT A NEW STRING ON?

Once checked that all points of contact are smooth and free from sharp edges, when tuning a string for the first time, pull it with your fingers until it stays in tune: moderately the trebles and wound strings but with a bit more energy the thicker ones.
This applies to both gut and synthetic strings, especially to Nylgut.

WHAT SHOULD I DO WHEN I AM NOT GOING TO PLAY FOR SOME TIME?

Follow Thos. Robinson's advice (begin of the 17th century) and tune the treble a bit lower, thus reducing string-stress. [Relieve tension when flying/traveling as well]

WHY DID THE STRING BREAK AS SOON AS I PUT IT ON THE INSTRUMENT?

There are three possible reasons:

The string is faulty.

The string length is too long (exceeding the Breaking Index).

Some point of contact between string and nut, bridge or string holder [tuning post] has a sharp edge or is lacking appropriate lubrication (i.e. pencil-graphite etc.).

Faulty string: generally it does not break cleanly but through progressive fraying, usually announced by little hairs raising along its length.

Excessive string length: check whether the product string length by frequency is in excess of 240, regardless of type of instrument: lute, baroque guitar, fiddles and medieval instruments in general.

The cutting effect of sharp edges usually results in a sudden and clean break. It can also be caused by nicks in the string, as consequence of careless.

Notice: the string breaks under tension: if the damage took place at the nut edge, for instance, the breakage will seem to correspond to, say, the second or third fret, since the string is no more under stress. likewise, if the damage took place at the bridge, it will seem to have broken somewhere between it an the string holder [tuning posts -often the edges of the holes will be rough and sharp].

WHAT CARE SHOULD BE TAKEN WITH THE NUT AND BRIDGE GROOVES?

A large number of strings break because of the cutting effect of sharp edges on bridge and nut.
Thomas Mace in 1676 advises: 'take a knife and make a little impression upon the nut … [which] must afterwards be filed down deep enough for the string to lye in … after you have marked the places for all strings to lye in, which may be done with a pencil or pen and ink … you must take it [the nut] and polish it very well (but especially the notches) … take a piece of new neats-leather and a little scraped chalk wet in spittle, which with good pains must be rubbed so long till … the notches be very smooth'.
All sharp edges and angles must be accurately eliminated. Only after this operation apply some soft pencil lead or very dry soap to the groove. this will not only help tuning and keeping in tune but also prevent the string from squashing and jamming in the groove, increasing the probability of breakage. Robert Dowland, in his 'Varietie of lute lessons', London 1610, suggests:
"…when you set them on the instrument they will sticke (and rise by starts) in the nut, and there breake, even in the tuning: the best remedy when the strings sticke so, is tu rub the little nickes of the nut (in which the strings slide) with a little oyle, waxe, or black lead".

ATTENTION: Just like gut, the New Nylgut® is liable to suffer from cutting edges. Before stringing the instrument do make sure the nut and bridge are free from sharp edges and the nut grooves not too deep and perfectly smooth.
You can get rid of sharp edges with very fine grit sandpaper (600, for example) or the finest steelwool (000).

IMPORTANT

The best sound quality develops when the strings have completely set, which may ordinarily take sometime. To achieve a stable intonation in just a few minutes you can repeatedly pinch each string at midlength with your fingers, pull it decidedly sideways and tune it up again. Stop when the string does not pull out of tune anymore. [end of Aquila website information]

[Another way to "pre-stretch" strings is to lightly pull the string between your finger and thumb several times~ You'll be surprised how warm it will become and how much more quickly it will settle in.]

[From the Aquilacorde.com Factory Tour]
In the 1950's the First and Second strings for Violins (gut/usually lamb) were cut in half and used for the 1st and 4th strings for Ukuleles].

[If you have a wound Aquila string consider that it was wound on by hand (the string is spun and the metal is fed by hand on to the spinning string.

[Fun Trivia: Aquila, Savaraz, D'Adario (all string makers) came from the same town in Italy where strings have been made for centuries.]

From the Aquila site:

UKULELE & TIMELESS BANJO RED SERIES® SETS

INTRODUCTION

The RED SERIES® Sets: a unique look and a strong, consistent sound. Until recently, it was necessary to increase a string's gauge to reach lower frequencies. But increasing the string's diameter also increases internal dampening. That make the string less bright, less responsive and more muffled; the thicker the string, the duller the sound. Our revolutionary new approach—unique to us—changes the specific weight of the material, increasing it progressively to leave the gauge with fewer changes.

The result is amazing—Ukuleles & Timeless 5 strings Banjos sounds brighter, more powerful and more responsive through the entire range of the fret board. The strings also maintain their intonation better (because thicker strings need to be fretted harder, pulling them further out of tune). Until we introduced the Red Series®, this result has only been achieved with harps where the scale of the strings is continuously varied.

The RED SERIES® provide superior performance over traditional strings for musicians who love clear, sharp sounds and powerful voicing across the full scale of the instrument.

You will never have heard a sound like this as before now it simply didn't exist.

SINGLE UKULELE RED SERIES FOR THE LOW G TUNING

Who never dreamed of tuning the ukulele in low G, without using a fourth wound string type? As well affecting the overall sound quality of the ukulele, wound strings introduce a variety of other problems:

a shorter lifetime than the treble strings
sound power that is too bright and intrusive compared to the plastic treble strings
excessive sustain
noise caused by the fingers of the left hand
rapid oxidation of the metal wire caused by the acidity of the sweat.

The only alternative solution used today is the use of a fluocoarbon string. Its performance, however, is never entirely satisfactory as for a low string to be really good, it must not only use materials of a high density but also some flexibility and fluorocarbon is unfortunately a very stiff material. Density is in fact the secret of quality sound in a low string and we are happy to announce that we managed to overcome this difficult technological challenge (tried by many others but without success). Unwound fourth strings now finally exist! Now, with our new RED SERIES® stri ngs you can finally tune your ukulele to Low G with the certainty of powerful sound quality and a superior intonation across the frets that is fully integrated with that of the upper treble strings.

Main Features:

The technical solution adopted was firstly to make the Nylgut elastic and then add red copper powder in order to increase the density to about twice that of standard white Nylgut.

Color: red-brown

Surface: slightly rough; this texture has eliminated the squeak that sometime occurs with the Nylgut strings.

Elasticity/Elongation: consistent with white Nylgut!
Performances: better than the first elastic version! They do not break under tension providing rapid, stable tuning!
Intonation: accurate past the 12th fret
Pressing the string firmly down on the frets does not cause the note to sharpen.
It is not necessary to file the nut slot wider to accommodate our RED SERIES® string, as was necessary with the previous fluorocarbon G strings.
Density: about twice than standard white Nylgut. [end of Aquila Red info]

Ukulele Strings – Materials, Types, and Brands [from Liveukulele.com]

The kind of strings that you put on your 'ukulele greatly affects the sound of the instrument. Some strings are "dark" with less treble, some the opposite. Some are skinny, some fat. Some are high tension, others low. What you choose is a matter of preference, but here is some information to point you in the right direction.

Material:

These days, every string company and their brother are creating unique "formulas" that they claim produce the best sounding 'ukulele string. From my experience, these formulas can be grouped into three main families:

- Nylon – A typically warm-sounding string that uses bigger diameters to achieve proper tension. Nylon strings tend to be stretchy and react to temperature, throwing your 'ukulele out of tune when you go from a hot, sunny day to a cool concert hall.
- Fluoro-carbon – This string type tends to be bright and punchy, with a higher tension-to -mass ratio resulting in smaller diameter strings.
- Metal-wound strings – In order to get proper tension with good tone, many people like to use wound strings for their C and low-G strings. These strings have a bell-like sound and can be round or flat wound to minimize squeaks.

Tension:

How many pounds of pressure a string pulls when tuned up to pitch is called tension. Low tension lets the string move more and be "floppy". It?s easier to fret notes with low tension strings. Higher tension puts more pressure on the soundboard creating a more snappy sound, but makes the strings harder to press down.
Tension is affected by several things. Mainly, density and scale length. My non-scientific conclusions:

Density – The material the string is made up of and also the thickness contribute to density. It comes down to mass. More mass in the string = higher tension.
Scale Length – The longer the scale is, the higher the tension, providing you are tuning the string to the same note for each length. If you tried to put soprano 'ukulele strings on a guitar and tune them to GCEA, odds are you'd break them because the tension would be incredibly high before you even reached the correct pitch.

Low G vs. High-g:

Low G strings seem to be a mystery to many (mostly beginning) ukulele players. While many artists still opt for using the reentrant tuning (high-g), it seems that the low G string is becoming a popular option.

- A low G string gives the ukulele a more rounded, even sound. Some claim that it makes the ukulele sound more like a guitar. I don't think it makes the uke sound like a guitar, but it does give you 5 extra notes.
- A high-g string is best for the more treble-oriented traditional Hawaiian rhythm sound. It also keeps the note spectrum tighter and usually doubles two notes of a chord in unison.

A low G string replaces a high G. You put a low G string on your ukulele just like any other string, though sometimes you just might use only one wrap in the "tuning knot". The only reason for this is because a low G string has a larger diameter than the other strings, and you might not be able to pull off the standard double wrap because of its thickness. A low G is tuned one octave below the high G – the 5th fret of the G will be the same as the open C string. (How to put strings on an ukulele)

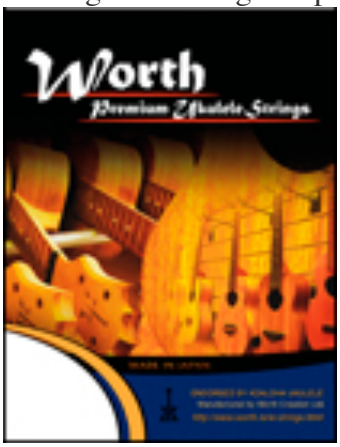
The only tuner you might have trouble with is an ukulele pitch pipe, because it will be tuning the high-g instead of the low G. You should be able to hear the note as an octave and tune to that. If you can't hear the octave, just tune the rest of the strings to the pitch pipe and use the 5th fret on the G to tune to the C string.

Low G strings come in two types: wound and unwound. Wound strings are just like they sound: they are made with a nylon or metal strand in the middle and metal is wound around on the outside. Wound low Gs have a different tone than the rest, which might throw your overall sound off. They are a lot richer sounding than the unwound – you instantly know when someone is playing on a wound G. They also squeak when you slide you finger on them. Sometimes, if you are sliding a long ways, your finger will get caught and you will end up stranded in the middle of a slide. Worth makes the only unwound low G I know of. Unwound low G strings have to be a bit bigger in diameter than wound low Gs to have the same tension. To hear the difference in wound/unwound low G strings, listen to Herb Ohta Jr.'s "Ukulele Breeze" album which he uses a wound low G on, and then "Ukulele Journey" where he goes the unwound low G route.

String Brands:

More and more brands of strings are popping up on the market, and it can be hard to decide what ones to buy. Here are the brands I have played:

Worth – My favorite, hands down. These fluro-carbon strings pack more punch than most. They are bright sounding and pull very tight across the



fretboard. These strings are used by Herb Ohta Jr., David Kamakahi, and Brittni Paiva. There are two main kinds of strings that Worth makes: brown and clear. The brown strings are warmer sounding and the clears are brighter sounding. The clears are what I like. I'm usually a bass/middle frequency guy, I don't like songs with treble boosted anything. But these strings work for

me because my ukulele has such a warm sound, it all balances out. Both kinds of string comes with an optional unwound low G string (yay, no squeaks!) in normal, medium, or heavy tension.
Aquila – Loved by many. These strings are white and made with nylgut. They are very smooth. Unlike Worths which (for descriptive purposes) feel "wet", the Aquilas feel "dry" to me. Almost to a fault, as I find that the strings sometimes roll out from under my fingers. Aquila strings are not as bright as Worth strings, but they are brighter than Hilo strings.

J71 D'Addario Pro•Arté Tenor Ukulele Set

D'addario J71 Pro Arte – Used by Jake Shimabukuro. More warm than Aquilas, with the "wet" feel of Worths. These strings are clear and made of nylon with a flat warm tone. I like these strings probably second best to Worth. They feel very fat and "there".
Hilo – The original best-of-the-bad. Hilo strings were some of the first on the scene. They are kind of "*the ukulele strings*". They look black, but are really dark purple (look at them against a light). These are some of the warmest sounding strings available. I would consider these light gauge strings – you can bend them easily. Hilos are a great place to start in the search for the perfect string so you have a reference point. [end of liveukulele.com]

Thank you for your attention and patience in getting through all of this!

Warning:

I know you like your Uke now...

When you find it 'just the right outfit' (strings) it will love you back in ways that will tug your heart's strings.

Enjoy,

john

boulder ukulele group