



Rhythm Bones Player

A Newsletter of the Rhythm Bones Society

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Executive Director's Column

If you're feeling anything like me, you're just about overjoyed that Spring is finally upon us. And of course, that means it's time for another issue of the Rhythm Bones Player!

Winter time, at least for me here in West Virginia, can be challenging. The Holidays and their associated parties end, the New Year begins. The days are short. Even though they get a little longer every day, that change is barely perceptible. It's generally too cold to be comfortable outside. For the most part, people hunker down with those closest to them and focus on staying warm. It's just about the opposite of what a bones player like me is looking for.

And now we've finally set our clocks forward. That small bit of light that we've been adding every day since the Winter Solstice is suddenly completely perceptible. We may be in for a few cold spells or snow storms yet, but winter is coming to an end.

And we get to celebrate! Mary and I recently attended a St. Patrick's Day party thrown by some friends who are regulars at an Irish session we frequent. We weren't necessarily required or even expected to play, and for most of the evening, we didn't. It was actually rather refreshing just to chat and enjoy fellowship with faces both familiar and new.

But of course we did play. Our host was gracious in creating space for us. Our fellow partygoers were an excellent audience. One remarked several times that connecting with people, in any form, but particularly through music, was special. And he's absolutely right. I'm so glad we're entering the time of year where it's easier to make that happen. And I'm so glad to be part of an organization that helps connect us all.

A friend of mine (Continued on Page 2)

Technology and Rhythm Bones

This issue of the newsletter looks at rhythm bones from a technology point of view. We think of rhythm bones as one of the oldest of human made musical instruments that developed over time from prehistoric technology to today's technology.

A Google definition of Technology is the practical application of scientific knowledge, tools, techniques, and systems to solve achieving specific goals and extend human capabilities. It encompasses tangible items like machinery and hardware as well as intangible methods such as software or organizational systems.

What sound producing instruments exist without technology; voice, body percussion, whistling, and concussion idiophones where two objects are struck together (rhythm bones are classified as a concussion idiophone). These instruments all survive without technology though benefit from technology be it as little as a sheet of paper with playing information.

How were the first rhythm bones made? We can speculate that someone picked up two bones, they made noise, they found a way to hold them, and wow the first tap and triplet!

I mention the triplet because Jonathan Danforth noted that rhythm bones are unique in that they are the only idiophone that has a triplet as one of its

rudiments. I cannot speculate when that was discovered or how it could be researched!

The previous speculation about just picking up and playing two bones assumes they were of a size that could produce a consistent sound. Should a shorter size be needed, then a tool such as a sharp edged rock could cut off part of a bone, and that would be early technology.

Technology has improved over time, and modern examples for making rhythm bones can be found by clicking on the 'Make or Buy' Tab on our home page. Scott Miller's booklet on making animal rib rhythm bones and Steve Brown's video on making animal shin rhythm bones are good examples of today's technology. Wood rhythm bones are made using routers, polishers, saws, automated milling machines and more. Joe Birl and Aaron Plunkett are examples of plastic rhythm bones makers.

This issue examines some newer technology including the 3D Printer, and the next issue, Spectral Analysis. This is not a scholarly treatment, but is an introduction to these subjects.

Do we have the technology to make the Ideal set of rhythm bones? Our ears will tell us! *Steve Wixson*

Editorial

In 2015, I made a pair of rhythm bones using a 3D printer at our local library (<https://rhythmbones.org/documents/RBP/V15N3.pdf>). I lost one and kind of forgot about them.

I have a Sheep-a-Doodle (Poodle and Old English Sheep Dog mix), and I take her to the dog park most everyday. One day Ryan, a large German Shepherd showed up with his owner, what's his name (we know dog names better than owner names though it is Chris Green). He had a new 3D printer and printed two pairs for me, What are the odds of finding such a connection!

An update on making 3D printed rhythm bones begins on Page 3, and Chris tells his story on Page 4. Other stories in this issue include a related technology, CNC Milling by Randy Seppala, making unusual rhythm bones designs by Adam Klein, selecting animal rhythm bones by Bud Bartrum, and selecting animal rhythm bones by Tom Connolly.

Or we can use AI technology to design rhythm bones like are shown below and make them on a 3D printer. I suspect most players will say, "I don't want high tecky rhythm bones!"



One interesting thing I take from this issue is Justine Haupt comment where she went from a thought to playable rhythm bones (See Pages 3 and 5)

I planned to include spectral analysis of rhythm bones in this issue, but ran out of white space which is good as I need more time to learn how and then do the analysis. Contact me if you can help.

While our rhythmbones.org website has more rhythm bones information than any website in the world, there are some other very good summaries. For example, Google "rhythm bones images" and check out those images, many linking to our website. *Steve Wixson*

First Conviction A New Work From Mel Mercier

I received an email announcing a new work by Mel Mercier, *First Conviction*, a documentary soundtrack album, blending orchestral strings, African guitar, jazz piano, traditional flute, and electronics (<https://melmercier.bandcamp.com/album/first-conviction>). There was one track released, Halawa, and I played it. The sound was unexpected, and I ordered the album. Later Mel told me I was the first from the 'States' to buy the album.

A few days later I downloaded the album and also listened to his Clare-FM interview about the work (<https://www.youtube.com/watch?v=d3261D5gwM0>). I heard the following comment and it make me wonder if there is a gem there for the newsletter. Mel said, "I began as a bodhran and bones player and still am a bodhran and bones player, and that feel for groove and rhythm is still a driving force for me." I asked him to elaborate and his reply follows. *Steve Wixson*

"The truth is that with the bodhrán and bones in my hands I made my way into music for the first time. Because they are rhythm instruments, I found myself riding the pulse of music, in its grooves. And I loved being there. I was carried along by the momentum, flowing with the music.

"The first grooves I discovered were those of Irish traditional music. When I studied at CALARTS for my MFA in World Music Percussion, I discovered a diverse range of, often complex, asymmetrical rhythms that pulled me into new kinds of musical movement, new grooves! In almost all of my music compositions, I am searching for an underlying groove to propel the music forward and move into an alternative experience of time. Warm wishes." *Mel Mercier*

[Editor: Mel is a past member of our Board of Directors, and his Player Profile Page is at <https://rhythmbones.com/player-profiles/mercier-mel>.]

(Executive Director from Page 1) used to host an annual holiday party held between Thanksgiving and Christmas. She's a washboard player who had been a

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Political Science professor at a local university. She has a really diverse group of friends, including many musicians. Her holiday party was legendary. So much so that her son would bring a contingent of more than a dozen of his college friends 3 hours up the road to attend.

She had a fairly average size house. Fortunately the back yard was sizable and there was typically a bonfire. I say this was fortunate because her reasonably sized residence would typically host well over 100 people for one of these parties. There was always plenty of food and drink, and usually a few hours of music.

One year, for whatever reason, none of her other musician friends could attend. She came to me with a justifiable level of concern and asked what we were going to do. I had a pair of spoons, a set of bones, and a sense of optimism. I told her we'd be just fine. For the next few hours we played and sang. When we got low on songs we could sing, we got the crowd involved **(Continued on Page 5)**

3D Printed Rhythm Bones Update

In 2015, I made what appears to be the first rhythm bones using a 3D printer. Recently a new friend told me about a 3D rhythm bones print file he found that was created by Justine Haupt and can be found at <https://thingiverse.com/thing:3126159>. There you find details on how to print them.

I asked Justine, “How in the world did you select rhythm bones, a very old and not well known musical instrument. Her reply, “I’m an old time fiddler and have dabbled with claw-hammer banjo, so picking up bones at jams was an inevitability. I know the basic technique, but haven’t put the time in to get good with it. Nowadays I have been out of the old time scene (mostly drumming in an alt rock band).”

I then asked her what she used as the model. She replied, “Nothing, they were just patterned after my mental image of what I thought the quintessential platonic form of bones to be.”

A friend, Chris Green, printed the two pair shown in the photograph in the right column, and he describes the process on Page 4. To compare the progress from 2015, my version has 80 layers per inch, and Chris’ version has 500 layers per inch (0.002”- thinner than a human hair).

If you want to 3D print rhythm bones you can download Justine’s print file or use a 3D design program to do a custom design. The top free 3D design apps include, SketchUp, browser-based and great for architecture and simple models, Tinkercad, beginner-friendly, web-based, and Blender, a powerful, open-source for advanced users. I have experience with SketchUp, and it is easy to use.

As for the actual printing, see if your local library has a 3D printer for public use, or find a friend with a 3D printer, or buy one. The MakerBot in our local library cost about \$2,000 in 2015.

A growing list of materials are used including plastics, resins, metals, carbon fiber, wood filaments, food, and bio-materials. Imagine you perform and then eat your rhythm bones as dessert.

You can add scrimshaw-like effects.

Thank you Justine. Thank you Chris.

Steve Wixson

Plastic Rhythm Bones



Joe Birl. ‘Rhythm Bones’ were molded using Bakelite plastic. He sold over 200,000 pairs. See Joe’s Player Profile Page at <https://rhythmbones.com/player-profiles/birl-joe/>



Aaron Plunkett - Resin Bones are molded using combinations of complex resins. They are tuned and shaped to resemble real goat bones and with a very unique sound.

For more information, go to <https://www.world-beats.com/store/index.htm>



Steve Wixson - Modeled after Percy Danforth rhythm bones, and printed using local library 3D printer. You can see and feel the coarseness of the low resolution printing. Also way too quiet. Story on Page 3 in <https://rhythmbones.org/documents/RBP/V15N3.pdf>



Made by Chris Green using Justine Haupt’s 3D rhythm bones print file. See story in left column and on Page 4.

Making Rhythm Bones on a 3D Printer

A couple months ago, my friend from the dog park, Steve Wixson, got me thinking about rhythm bones. He's a bit of an enthusiast and while it's not something I'm likely to pick up, it made for interesting conversation. Shortly after learning what rhythm bones are, I happened to be thrust into the world of 3D printing. My employer purchased a printer and shipped it to my house, asking me to figure out implementation for our business. I quickly determined some low end targets and starting printing some simpler items just to get the hang of the process. As I got comfortable, I found myself looking for more challenging things to print - something with a more organic shape rather than basic geometric shape - and it occurred to me that rhythm bones would be a good test.

I only had 2 resins to print with at that time. One was a basic Gray resin that is intended for "fit & function" applications - not great at deflecting heat, not as durable as might be useful, etc. The other resin was a white glass-filled compound that is intended for rigidity, durability, and heat deflection. This more robust resin is what I would primarily use for my business purposes.

I did a little searching online and found some free 3D print design files that others had created and uploaded to the public domain. The most intriguing of these (the ones I printed) were a design that included a hollow cavity inside the rhythm bones. Knowing just a tiny bit about music and acoustics, I decided this was a decent choice. I downloaded the files and printed them without any changes or additions. The results were delivered to Steve at the local dog park on what happened to be his birthday. He was pleased with the rhythm bones and I was pleased to have gotten more experience with my 3D printer. *Chris Green*

Bones Fest XXX Save the Date

Bones Fest XXX will be in Westport, MA, on August 6-9. Add this date to your calendar. More information to follow. Hope to see you there. *Dean Robinson*

Making Rhythm Bones on a CNC Machine

I moved back to Covington, Michigan in 1994, the small town which my ancestors from Finland settled in the early 1900's and where I spent the first 10 years of my life, until my family moved in 1961. In 2004 I was heading the Parks and Recreation Committee in a community effort to build a 60'x80' open sided pavilion to host the annual Finnish music festival which began in 1999, as well as other community events in this tiny Finnish based town. I had heard of Jim Lohmann for years, an architectural wood carver who moved to Covington from Chicago, bought an old farm, and converted the barn into his workshop. Some people told me he was one of the top three architectural wood carvers in the world. I finally met him in the 2004 when he stepped forward to build a large wood sign for the front gable of the Covington Pavilion & Event Center.

We connected immediately on an artistic, woodworking, and personal level, and built the sign in his shop. Jim's knowledge of wood and wood carving was phenomenal, and I was glad to finally meet this amazing craftsman and do some work with him. Jim went through a wood carving apprenticeship in Boston's Wood Carving Guild with very particular masters with over forty years of decorative hand carving experience.

Jim was forced into CNC (computerized router) technology, which was causing big changes in architectural wood carving markets. Jim was dedicated to his craft and worked endlessly to master the new digital technology before him. Most of his work was now roughed out of the single head CNC machine, and he added a hand carved finish.

To keep up with demands Jim purchased a new larger two head, two rotary CNC machine from new CNC manufacturer in China, and not necessarily well tested for performance, causing a lot of breakdowns and production problems. After much extra cost and frustration he was able to get the machine to operate at capacity. The transition to this new technology was not an easy one for wood carvers or manufacturer of the machinery

or for computer programmers, but was worked out through trials and tribulations of all involved.

Jim Lohmann was also musical and he was fascinated by the rhythm bones I had recently learned to play. I asked if he could make rhythm bones on his CNC machine. He was quick to respond to the challenge. He went to work on his computer designing tool paths and making jigs to hold the wood blanks in place during production.

We started a sideline business called "Dem Bones" producing and selling rhythm bones with many different types of wood; pine, cherry, apple, red, oak, white oak, mahogany, blood wood, yellow heart, purple heart, ebony, hedge apple, and more. We presented rhythm bones playing workshops and sold our products at festivals and online. Jim learned to play rhythm bones and so did his ten year old daughter Olivia who was quite an attraction at our events.

"Dem Bones" was just a sideline of Lohmann Wood Carving, but we kept at it year after year, whenever time availed. Money we took in we put back into customized cutters, and branding iron, more wood for bones blanks, and materials to build new jigs to hold the blanks in place while running programs.

Parts were held down by suction and one problem we faced was chatter during running causing unwanted marks in the wood. Jim was constantly improving methods to hold blanks in place and by the time he worked it all out, the rhythm bones needed little or no sanding when they came off of the machine.

Jim used computer programs ZBrush to model 3D parts on his computer screen and Rhino and RhinoCAM as tool pathing hardware (see <https://mecsoft.com/CaseStudies/Rhinocam-Lohmann-Wood-carving.pdf>). He said, "I find RhinoCAM very user friendly." Setting up a part to machine is very easy and intuitive, and Rhino cam has always done everything I ever asked it to do and done it well- it just works." I did not have much to do with the digital aspects of our rhythm bones making, not being much of a computer person myself, but I did have lots of wood shop experience. I cut wood bone blanks, sanded bones after they were milled, branded bones with our logo, and packaged and labeled our

products.

Unfortunately Jim Lohmann's legacy ended on May 30 2019 when he did not survive his third heart attack. Tons of wood carvings and folklore knowledge passed on with him, and I will forever miss my dear friend and fellow rhythm bones player.

3D plastic rhythm bones have been made on a high end printer. Amazing as this is, I think I will stay with my wood and natural rhythm bone bones. Best to all rhythm bones players in this world no matter what your rhythm bones are made from. *Randy 'DaBonesMan' Seppala*

3D Printing versus CNC Machining

While 3D printing and CNC machining are both technological processes that are largely computer-automation driven, they are actually quite opposite of each other.

CNC machining is a reductive or subtractive process where you start with a solid and remove material to leave whatever the target is, much like a sculptor would do with a block of stone.

3D printing is an additive process where material is built up in layers with minimal excess material usage.

At this point in time, CNC equipment is capable of much higher tolerances and much larger formats than 3D printing, but 3D printing is still going through its technological refinement and equipment and software advancements occur regularly whereas CNC machining has been around much longer and been refined significantly to where advancements have slowed and are largely in the realm of AI coding rather than in equipment performance. *Chris Green*

(Executive Director from Page 2) in Christmas carols. Her son's fiance told him she couldn't believe how much music I could make with just a few pieces of wood.

Of course the music wasn't in the wood, the wood was just a tool that helped me to manifest it. In this newsletter we're going to be focusing on the tools that help us manifest our music. I've had a peek and it's great. I hope you'll enjoy it as much as I did.

And please always remember that the music isn't in the tool. We can debate whether the music is in us, or in

the air, or coming from some greater spirit. Those conversations are fun. But whatever the answer, it's our job to make music manifest in the world around us, even if all we have are a few pieces of wood.

May your bones be with you. Your friendly neighborhood bones player, *Skeffington Flynn*

P.S. The Rhythm Bones Society is actively seeking candidates for the role(s) of Secretary/Treasurer (see <https://rhythmbones.org/documents/RBP/V27N4.pdf>) for a description of the position). If you'd like to be considered, or just want to learn more, please contact us. <https://rhythmbones.com/contact-us>.

Bud Bartrum on Selecting Animal Bones

Here is a quote from story teller, rhythm bones player, Bud Bartrum.

"I made bones to accompany myself on the harp. I play cow ribs and do not like the sound of wood bones. Being a working cowboy, I would occasionally come upon a sun dried carcass. The only usable bones came from the upper back part of the rib cage next to the shoulder where the bones were thin. I would select only about two bones from a carcass. I would cut 14 inches of bone with a saw in the field and later trim them to the proper length (about 7 inches). I would then break the bottom of a Coke bottle and use that to scrap the bones until I got the sound or pitch I wanted. This could take hours and hours."

Since animal bones come 'as is,' we select rather than make them, and the above is one man's idea of how to do that. It is interesting to note that he used modern technology, i.e., a saw and the broken bottom of a Coke bottle, instead of a sharp edged rock. *Steve Wixson*

Various Bones From Various Animals Which is Best?

Let me say at the outset I always feel uncomfortable when I am asked to pick the "best" of something. When something is called "the best" it implies that every other comparable thing is somehow lesser. That applies to everything

including family members, cars, meals, countries, people, cities ... and even rhythm bones.

One of the things that I love about rhythm bones is that every player seems to have at least one favourite style, one preferred dimension, one ideal weight, one particular look, one preferred playing method. One common conviction we do share is – play in time!

The thing I love the most about rhythm bones is the joy that they release – the expressions I see on people's faces when they hear them played for the first time – the ubiquitous appeal across all musical genres, geographies and cultures. There is something magical about the rhythmic punctuation of this simple instrument that we love.

And I also believe there is something deep within us that is touched when that sound comes from real animal bones.

So in this article I will talk about various rhythm bones from various animals – I won't presume to choose the best. But of course I might have a few strong opinions.

I made my first pair of bones in 1979 in Galway when I was at university. I was told about the bones by Joe "Strokes" Stevens, a native of Tuam Co. Galway and a supremely gifted songwriter who is the brother of Padraic Stevens, a founder member of the Saw Doctors.

Joe told me: "They are 5 to six inches long, made from the rib of a cow. Pick a section with a bit of a curve but not too much. Not too thick either. Boil them for three hours, bake them for three hours, dry them out, hollow out the marrow as much as you can, and varnish them if you want to." Joe told me that the bones added a unique quality to a session when played well. I was intrigued.

I went to a butcher near my flat in Woodquay in Galway and asked him for ribs to make musical bones, and although we ended up with a fantastic pair of rhythm bones, I think it would be impossible to figure out which of the two of us knew the least about what we were doing. That butcher cut four bones for me that day - two ribs from each side of a rib cage from the same animal. One pair is a pair I still have, and I still love - the other pair was useless. To this day I never know how the bones are going to turn out. With wooden bones you have

a reasonably predictable outcome – with real bone – no.

I played my original pair of rhythm bones very happily for many years – I did try to make a few more pairs but never succeeded. I only ever saw one other pair, at a session near my home in the early 2000's – and the owner proudly told me they were over 100 years old and had belonged to his grandfather. All I remember is they were the same length as mine but much slimmer and more polished. I think they were probably shin bones, possibly whale. If we had smartphones then I would have a picture of them now to confirm that.

Fast forward to 2009 – 30 years after I first started my bones journey. The recession of 2008 had just wiped out my business, my marriage was over, and I was trying to figure a lot of things out. I decided I would try to set up a little side business playing music and making and selling bones. I had met my soulmate Bríd and her support of this idea was crucial.

I made a load of rhythm bones of all sizes and shapes, got a website set up by my client, friend and mentor Stephen Moore of Imokilly Webs, sold a few pairs of bones and in 2011 I had a long long phone conversation with the incredible Steve Brown that gave me the impetus to keep going with this crazy thing.

So this is what I have learned so far about real animal rhythm bones:

Cow Rib

Over 90% of the bones I make are rib bones. Dimensions: I like bones that are thick ($\frac{1}{4}$ - $\frac{1}{2}$ inch) a bit wide ($\frac{3}{4}$ - $1\frac{1}{4}$ inch) with some weight to them – that is, where the bone part is thick and there is not much marrow. I prefer shorter bones ($5\frac{1}{2}$ - $6\frac{1}{2}$ inches). Heavier bones are much easier to play softly and slowly.

Sometimes thick beef ribs are just too thick and sometimes they split, especially if you expose the marrow when you try to make them narrower – so I developed a bone type I call “shib”. The rib is split vertically and the marrow sanded off. You end up with almost paper thin bones which are surprisingly loud when you cup your hands, are very “lively” and “springy” and add a new dimension to the rhythmic sound you can produce.

I like bones to be balanced so you can grip them in a number of different places

to produce different sounds. So I always try to make a pair where the length and width and weight is similar. But there have been a few occasions where odd bones have worked very well together.

Long bones do more work for you than shorter ones. This can be good but sometimes shorter bones suit people. I have a fabulous repeat customer and friend, Brian Walker, who loves bones that are only 4 inches long! I've made bones for him from the thoracic vertebrae above the cow's spine, which are almost like tubes rather than the traditional curved rib shape – and they work!

Marrow in or out?

I like bones that can be hollowed at each end if need be, that is if you hollow them out the bone that is left will not be like an eggshell! Marrow varies a lot – sometimes you get bones where you can shape them to your own design and the marrow stays very solid and smooth and can even be sanded. Other times if you trim the edges of the bone too much you end up with something like an ice cream wafer with the ice cream spilling out.

Clean? Polish? Sand? Whiten?

I like bones that have a voice – not just a sharp click. I like bones to be smooth so I spend a lot of time sanding them. I often use Hydrogen Peroxide to whiten bones – a tip from Scott Miller. However, some bones do not want to be whitened and they just go a bit grey and yellow. I've learned which ones tend to do this and I leave them in their natural state – just a bit of sanding and polishing to make them somewhat civilised looking. And also some customers do not want the white shiny look! Shiny bones click a lot – sometimes it can be better to leave them dull looking and even a bit dirty looking – the resulting “clack” can be nicer than the click. Customers have told me this.

Cow Shin

The king of shin bone makers in my opinion is Steve Brown. Steve Brown's bones are universally acclaimed, they are invariably deeply lustrous and have an authoritative clear voice.

I also make shin bones from time to time, and here's what I have learned:

Gosh it is a messy business!

You have interesting times hollowing out the marrow on these shins! I always boil bones simply because it is the safest

thing to do and they can be exported anywhere. But even when you boil shins there can still be a lot to clean out.

Gosh it is difficult to figure out where to cut!

With ribs it is pretty easy (in my opinion). The ribs have a natural curve to them and you learn over time where to cut them. Cutting shin bones is a very dusty business (and actually the same applies to ribs). Bone dust is dangerous. And like wood, it is the dust you cannot see that does the most damage. So you must make sure you are in a well-ventilated area – preferably outside or with a ventilation system. If you smell bone dust while you are cutting, stop. Some people dampen the bone to keep down the dust (e.g. using a wet saw). But once you have a safe set-up you eventually have to start cutting. With a shin bone (in Ireland and the UK they are known as a “postman's leg”) you never know how thick the bone is until you cut into it. It's easy to end up with strips that look like straight planks and strips that curl and bend and taper into points. What I have learned is to cut one strip out of the shin, then use it as a gauge to check the curvature of the rest of the shin. Sometimes I cut the shin in two, vertically, and look at it. On more than one occasion it is only after I cut it that I know where I should have cut it.

The shin bones I make tend to be a bit shorter than Steve's, usually around $6\frac{1}{2}$ inches or so, and can vary in width from $\frac{1}{2}$ inch to 1 inch. The thickness tends to vary from about $\frac{1}{4}$ inch at the “top” to much thinner at the “bottom”. I put “top” and “bottom” in italics because you can turn any bone any way to get your desired sound. Sometimes I polish my shins highly, sometimes I don't. It all depends on what they sound like, what they feel like and what the customer likes. I always send people videos at the various stages to figure all this out.

Curvature and Tomahawks:

I used to think that curvature was easier to achieve with shins, because you have to cut and shape shins so much anyway – but its actually easier with ribs – they either have it or they don't.

Most people who make and sell bones advise a little curvature but not a lot. I am not sure what that means but if you look up Vash on Youtube you will get a

good idea of the “right” curvature.

What I have found is that as long as you don’t go to the extremes and make bones that are beginning to bend back on themselves, there is no “right”. I do have a problem deciding, because I have made so many bones now out of so many sizes and shapes, and I have also made many from wood, some from slate, a few from aluminium and copper and even from stones I found on the beach – I can get a rhythmic sound out of two pieces of almost anything. So what I do is I give bones to Bríd, my wife and soulmate, and ask her if they are any good. Then I know! I’m often surprised, sometimes delighted, but always more educated after she has delivered her verdict.

And over the years I have learned that if one bone is a bit more curved than the other, and if there is a little bit of a weight difference between them, they somehow make better music.

Steve Brown has also taught me to pair a straight bone with a curved one for better action.

In the last couple of years in a bit of desperation to source bones, I have started buying Tomahawk steaks. We love the dinner(s)! – the two of us get two dinners from each steak.

But, the bone is often curved just a bit too much. To get around that I have started matching them with the straighter thinner bones which come from the high end of the rib cage. It works, but I can often be waiting for weeks to get a good partner for a Tomahawk steak bone. It is rare (pardon the pun) to get two Tomahawk steak bones that play well together – they curve away too much from each other at the tips.

Other than cow...

I have made bones from goat shins after a 10+ year search for them. In Ireland goats are rare.

The goat farms tend to cull the billy goats early on, and keep the nannies for many years for dairy products so it is hard to get mature goat bones. The few I did make were from a gorgeous billy called Rug who died of natural causes on New Year’s Day in 2021. I just got Rug’s shins, and made five beautiful pairs of bones. There were two striking differences between goat and cow for me – the first being that goat bones are much harder, the second being they are narrower,

so it is more difficult to get “good” size bones. But my sample size is tiny so I claim no expertise in this matter.

I’ve made water buffalo bones – ribs – from animals imported from Italy originally and now farmed in West Cork. In comparison to cow the bones are huge – but surprisingly soft. They are now being played every May in the Obby Oss festival in Padstow in Cornwall. Water Buffalo bones are quite sculptural, and on one occasion I made a pair that were not too huge, played very well, and produced a very wide range of tones due to the flange along one edge that I often cut off beef ribs, but couldn’t bear to cut off the buffalo bones because it just looked too good.

In the Blackstairs mountains in Wexford in about 2010 I spent a few hours with my now brother-in-law looking for sheep bones. We got a great haul – but the bones were too thin and too curvy to be of any use. I have tried to use bones from a leg-of-lamb roast but even though the bones are thick they are too short.

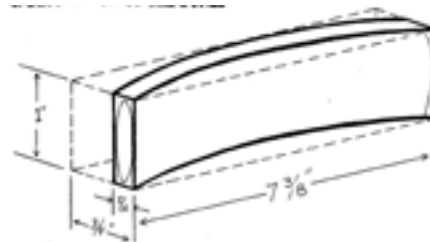
I tried deer bones, from wild Irish deer, but again they were too frail. I even got some deer antlers which I still have. I think they are too soft and would have a very dull sound. But I do still have them in my shed, so...!

Finally, I tried to make rhythm bones from kangaroo bones in Melbourne Australia in 2011 while visiting my sister. I had been invited to the local Comhaltas Ceóltoíri session and I had no bones. So I had to try to make some. The kangaroo bones were from a pet shop, roasted for treats for dogs, so were far too brittle. Most were too thin and small (like sheep) and some that were wider were not long enough. For the Comhaltas night I ended up making wooden bones from kitchen spoons and I was practically thrown out of the session because I was speeding up – but that’s a different story.

So in finishing this discussion – there is no “best”. There is no “ideal”. Generally, rhythm bones work well between 5 and 7 inches long, ½ to 1 inch wide, and 1/8 to ¼ inch thick. But specifically, everything depends on what I call the “bone triangles” where if we modify our grips, our speed, our rhythms we can get the best out of any pair of bones. I hope to do an article on those triangles at a later date. *Tom Connolly*

From Idea to Rhythm Bones

Are your rhythm bones similar to the family of Percy Danforth style rhythm bones. You can see Percy’s design below based on an animal rib bone and learn more about it in his Exhibit in our online Museum (<https://rhythmbones.org/percy-danforth-exhibit/>).



Or are they quite different like Adam Klein’s unique design at the bottom of Page 8. Adam’s describes his design process on Page 8.

In my collection are many uniquely shaped rhythm bones that are thicker, thinner, longer, shorter, have bulkier bottoms, have bulkier tops and bottoms, narrower in the middle, straight, and curved. They are made out of different woods or wood combinations or plastic or metal.

Here is a repeat from the 3D Printer story on Page 3. Justine Haupt said, “My 3D rhythm bone print file was patterned after my mental image of what I thought the quintessential platonic form of bones to be.”

My immediate response to this was WOW, but as I thought about it, an idea was needed for the rhythm bones types described above, and they were made by some technology including a pocket knife.

What the newer technology does is capture an idea in a form that can be repeated or modified and the 3D printer lets us quickly turn ideas into playable rhythm bones where a design can be modified to improve it as measured by our ears and by technology analysis.

As Chris Green said on Page 4, “3D printing technology is growing rapidly, and we can expect this tool to become more powerful.”

I hope you get something useful out of this issue, however, when all is said and done, rhythm bones are more about performance than technology. *Steve Wixson*

Adam Klein's Article

As a woodworker I'm sure you can guess my opinion about making rhythm bones out of plastic... given that most plastic ends up in a landfill, or worse a gyre (garbage patch) in the middle of the ocean, or in our body tissues... be that as it may... I do own a Dolmetsch Dolonite soprano recorder from the 1960s with the most exquisite tone, and my banjos have mylar heads and not goatskin; so if a hard enough plastic were used, and the pollution trail weren't too objectionable, a set of all-weather waterproof rhythm bones might be a good thing.

Early in my rhythm bones design process, we're talking the 1980s, I made a pair of rhythm bones with a thick middle, which I called "pregnant bones": this was a smooth inside curve with a much straighter arc than the outer (normal) curve that made the middle about twice as thick as the ends, and it resulted in a much lower pitch than same-length same-wood rhythm bones with parallel curves produce. This intrigued me.

Years later, a lengthy exchange with Mr. Bone Dry Music (Scott Miller) in which he encouraged me to show him novel designs, plus my encounter with some rhythm bones that Steve Brown was selling which had non-parallel sides, sent me back to the drawing board. I made several thick-middle bone designs: For the pointy one dubbed Titty-Bones by one of our esteemed members, which is the one rejected by Mr. Bone Dry Music on account of its pointy parts being a possible injury source for players: I took my inspiration from the design of the Batleth of Khaa-les from Star Trek The Next Generation, which contained a big central stabbing point in

addition to the two pairs of points found on conventional modern Batleths, which have smooth middles that are used for parrying and blunt butting.

Then I had the Bactrian and Dromedary designs, named after the two- and one-humped camel species, respectively, which had smooth mounts instead of points and also rounded instead of pointed ends, which seemed safe enough for Bone Dry to order a few pairs.

All these designs were for the purpose of making rhythm bones that sound markedly different from conventional wood and bone rhythm bones. Attempting to carve out, as it were, a niche for myself.

I also experimented with hyperbolic curves, both for the wide dimension and the thin one, varying the thickness in two directions instead of just one; and after seeing and hearing Parker Waite's straight aluminum rhythm bones, I experimented with straight wood rhythm bones -- given that most wood grain is straight and not curved like ribs or even leg bone-derived bones are. I finally came up with two designs that satisfied me aesthetically and timbrally, which I call Tree Ribs and Klave Klakkers (after the latin percussion instrument known as clave), both of which have definite discernible pitches, especially with the Klave Klakkers, which were intended to take their place in percussion ensembles as a form of clave that could do much more than provide a Bo Diddley type beat when necessary.

Then there were my ultra-short rhythm bones which fit in a shirt pocket: these were an exploration of how short wood rhythm bones could be made and still be easily playable. There's a definite minimum, but they look pretty cool. In this category are the few pairs I made to

emulate temple blocks: there's quite a bit of promise in that direction, but even then I wasn't living in my wood shop, or indeed visiting it much, since my job was Opera Singer.

Anyway, my design evolution halted there partly due to my need to reduce my inventory before committing more time to rhythm bones-making, and then the pandemic upending everything; since then, Life has pushed me in other directions, causing me to pine for shop-time. But there's hope: one of my friends at my curling club has ordered a special Minstrel-style banjo from me to construct, which will force me to resurrect my wood shop, where I have boxes of already-cut bone blanks of many designs and wood types just waiting to be taken over to the belt sander for shaping while I'm waiting for glue to dry. Meanwhile, I still have a rolling suitcase chock full of wood rhythm bones sanded to 2000 grit.

The technology I used to design the rhythm bones was my brain, a pencil, paper, ruler, straightedge and a compass. To make them: a band saw, a table sander, sheets of sandpaper to 2000 grit and either tung or linseed oil.

They make a distinct high pitched tinkle, which was the purpose of thickening the middle of all the shapes I came up with, and for some of them one end. In other words, we have rhythm bones that click, let's see if I can make them ring. And I did.

You can see in the photos that I've made them of different species, including pine/spruce, redwood, maple and cherry, so far. In the photos are maple (recycled butcher-block) and cherry (European bird cherry from a chainsaw job in the 70s); the action shot is either maple or spruce. So a spectral analysis of just one won't tell the whole story. (I prefer using native American species, especially chestnut.)

Live long, prosper, and may your bones be with you. *Adam Klein*

Letter To The Editor

Happily received the 4 issues of volume 27 of the *Rhythm Bones Player*. Delightful reading, thank you. I'm glad I rejoined—it felt like coming home.

Happy holidays ahead, Cheers, *Judy Shaw*



Adam Klein's Unique Wood