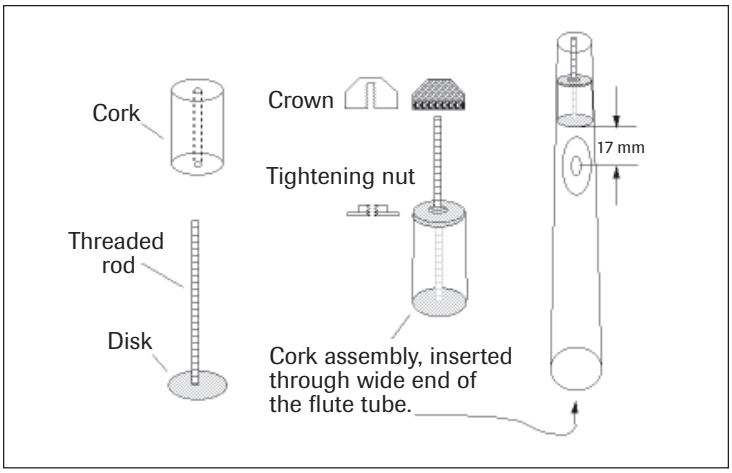
A Chat with Albert Weatherly
on Flute Mechanics and Repair

by Katherine Saenger

I first met Albert Weatherly in the summer of 2003, at a dinner hosted by Jayn Rosenfeld at her home, immediately after our annual "newsletter planning" meeting. I had first *heard* of Mr. Weatherly in the mid-'60s. I was 11 years old, and John Jackson, my first private flute teacher (in the days when music teachers still made house calls) told me and my parents, "He is a wonderful man You *have* to meet him." Well time went by, lots of time, and we finally did meet. Dinner conversation ranged over many topics, and Albert expressed a willingness to provide a few words on flute mechanics and repair for the NYFC Newsletter.

I sent him a list of questions by email, and in mid-February met him in his favorite hotel lobby in midtown Manhattan to discuss his answers. During the course of our conversation he filled me in on some basic biographical facts. Born in 1924, he spent his early childhood in Coffeyville, KS (population 10,000). At age five he moved to Tulsa, OK, his home until young adulthood. Albert started playing the piccolo in the third grade, and took up the flute in his first year of high school. He was at Juilliard from 1941–45 (with time out for a WWII stint with the Air Force Band), and studied with Georges Barrère. After several years as a professional flutist (playing with the orchestras of Leon Barzin, Sigmund Romberg, Lauritz Melchior, Erno Rapee, and Morton Gould, as well as the Radio City Music Hall Orchestra, the Ballets Russes Orchestra, and the National Symphony Orchestra in Washington, DC), he grew tired of the touring life. One day he walked into Verne Q. Powell's (VQP's) shop, needing a repair on his flute, and walked out with a job offer (conditional on performance, though VQP officially hired him before Albert finished his first week).



KATHERINE SAENGER

At the time (around 1950), Powell was a three-person shop comprising VQP, John Schwelm (a former Haynes employee), and Hans Haugaard (a Danish woodworking craftsman, also from Haynes, who taught Albert the essentials of flute repair). John Gilliam had just left, and Albert was his replacement. Albert says VQP was always pleased by the coincidence that both Gilliam and Albert were from Coffeyville, not far from VQP's own hometown of Fort Scott, KS. Gilliam and Albert eventually met years later (after a flute repair lecture Albert gave at an early NFA convention), and still speak regularly.

After about three years at Powell, Albert moved to NY to set up his own shop, working at 74 West 47th Street for 30 years and at 56 West 45th Street the next 20 years after that. In the mid-'60s he helped the Sankyo factory get started with some materials and ideas, which led to a long association with the company as its exclusive US importer. And he remained on good terms with Powell, making about 25 headjoints for them one year in the early '80s.

Albert has many interests in addition to flute repair. He's micromachined prototype medical devices, studied mechanical drafting, and designed a special mahogany flute case (1,500 of which were built and sold with the help of his longtime friend and partner Ayako Uchiyama). He also enjoys the revelations provided by his two microscopes. Very quickly, I was charmed by his vitality and modesty, and impressed with the depth and breath of his mechanical talents and knowledge.

KATHERINE SAENGER: How often does a headjoint cork have to be replaced? Some people do it every six months and swear that it is the single most important thing you can do for your flute.
ALBERT WEATHERLY: The simple answer is that a cork has to be replaced whenever it is no longer tight and not sealing well. But *this* will depend on how tightly it was inserted in the first place, and also on the quality of the cork. If you can move the cork assembly by overtightening the crown, or by bumping it with the cleaning rod when drying the inside of the headjoint, then it's time!

[Albert says that he gets the tightest possible fit by doing the final cork-tightening after the cork is already fairly snugly in place at the correct position, 17 to 17.25 mm from the center of the embouchure hole. This tightening is done with the tightening nut (see figure), not *the crown.]*
Quality corks, inserted tightly, *can* and *do* function well for many years. If the flute plays better by changing the cork every laundry day, then I suspect the cork is too loose in the first place. Or there's a big "power of suggestion" factor at work there.

If a player wants to move the cork around and determine a "best place," two corks are needed: (i) a test cork, intentionally made smaller for an easy fit, to allow fooling around, and (ii) the permanent cork, to be inserted as tightly as possible at the position desired by the player. In any event, a loose cork defeats its purpose.

Which is better: the original cork plumped up in boiling water, or a new cork?
A new cork, of course! Good corks cost next to nothing, so why use the old one? And it won't take longer than a couple of months for the boiled cork to shrink back to its original size.

Do you know of any synthetic materials that might be preferred for the headjoint cork?
Good cork is soft, pliable, has few imperfections, is lightweight, cheap, long-lasting, easily removable, and would appear to be a perfect material. What synthetic material can offer all of these advantages?

In VQP's early manufacturing days, Mr. Powell would solder a silver disk inside the tube at the right place, obviating the need for a cork and eliminating any possibility of experimentation. Unfortunately the soldered disk made it inconvenient to clean the inside of the tube thoroughly at service periods, so it did not become standard. But the concept proved his belief in a permanent "best" position and a perfect seal.

What are the most common problems people bring their flutes in for? The hardest problems to fix? The trickiest place you ever found a leak?
Most common: combinations out of synch, lack of lubrication, pads not covering well. Most difficult: bent tubing (either the main flute tubes or the mechanism tubing). Trickiest leaks: partially unsoldered embouchure plate, tiny holes in the solder around a tonehole.

What can customers do to make your job easier?
Keep the flute away from dust and heat; remember that tubing dents easily against anything harder than thin silver.

Any common misconceptions?
Yes. People seem to be surprised that flutes change over time, even when not being played. They've been away from the flute for a few years and expect the flute to be the same when they come back to it. But the pad skin dries out, pad felt loses its shape when not contacting the toneholes, and the lubrication dries up.

Do you have any advice for people starting out in the repair field?
Realize how difficult and tedious it often can be. Don't be frustrated with trial and error, and count on a lot of practice time. Remember, someone can tell you *how* to play the flute, but you learn only with practice. Do every job as well as you can.

Any advice for the do-it-yourselfer?
Don't do anything unless you really know what you are doing, and remember that it's very easy to make things worse.

What's the best pad?
The one that (i) seals the best, (ii) lasts the longest, (iii) is the quietest, both going down and coming up, and (iv) is the least subject to becoming sticky in humid weather.

Do you have a favorite pad type?
I prefer wool felt pads with good pad skin. When good pad skin is not available (most of the time) I use a proprietary synthetic skin.

What's the best home remedy for a sticky pad?
Baby cornstarch applied to the face of the pad (via a cigarette paper to deposit it there) *at the time the pad is sticky*. Later, swallow two aspirins, and apply more cornstarch to work overnight. In the morning, the moisture will be gone. It does require repeating, but it also works *and* causes no harm. *Do not* damage the pad skin by repeatedly wiping it!

What do you think about the trend of shortening older headjoints to get the flute up to a higher A? Are the results as bad as some people think? Does it really *put the whole flute scale off?*
This is answered logically. If the flute is flat, and you can't buy another up-to-date instrument, then it *must* be shortened or you will play *all* notes flat. So is it better to have all the notes flat, or only some notes off a slight bit because the tube is shorter?

To find out how much it actually will affect the scale and pitch, try this: Pull *out* 3 mm, test-play. Then, understand that *cutting off* 3 mm will produce only the same *degree* of change (though in the opposite direction). I've never found it to be a problem, especially compared to playing every note below pitch.

There's another foolproof solution: don't play that flute with any other instruments!

I studied with Harold Bennett for several years during the early '70s and my flute was regularly subjected to his vibrator/homogenizer treatments. Do you think his treatments had any good effect, other than to bring more business your way?*
Homogenization and the like—forget about it. Voodoo works both better and quicker. And Mr. Powell felt the same.

What do you think about the old flutes vs. the new flutes?
The new flutes are much better mechanically.

Do you think that the material that the flute body is made from affects the sound of a flute? What about the wall thickness?
The material must have some effect, but I'm not sure the listener can *consistently* separate silver from gold, thin tubing from heavy tubing, and so forth. But to the player, they *feel* different.

It seems that thin tubing makes for a quicker response and thick tubing is slower to respond. But also thin may be difficult to control and heavy tubing difficult to get moving…like furniture!

What flutes are easiest to repair and why?
The better made the flute, the easier to repair it. What makes for problems? (i) uneven toneholes, (ii) posts too high, (iii) keys not coming down parallel to the tonehole, (iv) keys not centered precisely over the tonehole, (v) odd shape key cups that don't nest the pad comfortably, (vi) levers and arms made of material too soft to be stable, (vii) adjustment screws which are too loose to hold their adjustment position.

Could you describe some of the most interesting and/or best playing flutes you've seen over the years? What made them so good?
I appreciate the original Lot flutes for their beautiful sound, but all the major manufacturers today have some fine instruments. I usually *cannot* analyze why a few are especially outstanding.

Thanks so much. It's been a pleasure talking with you. ❑

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* *Mr. Bennett would apply a vibrator (a handheld, electric-powered device designed for body massage) to different parts of the flute tube for several seconds, claiming that it put the metal atoms back in order.*