

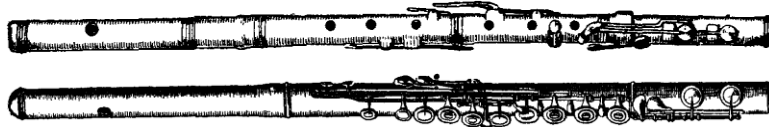
## COMPLETING THE BOEHM TRADITION: THE NAGAHARA FULL CONCERT FLUTE

Until the middle of the 20<sup>th</sup> Century, when recording industry stars began to emerge, the flute was recognized primarily as an instrument to provide color in orchestral and chamber settings. Even though the Boehm-system flute released in 1847 allowed greater projection and intonation over its conical-bore predecessor, limitations continue to exist with the instrument. Although flutists instinctively recoil from suggestions of instrumental inferiority, the standard flute tends to lack the color and nuance possibilities present in stringed and other instruments, thus limiting the flute's ability to connect with audiences as a true solo instrument. The expressive musician must exhibit a wide dynamic range, an impeccable sense of intonation, and an extensive overtone range for tone color differences. All of these characteristics are difficult to achieve with the standard flute, creating an environment where famous flute soloists today are hailed more for technical dexterity than expressive prowess. At Nagahara Flutes, we aim to change flute culture through the introduction of the Full Concert Model flute, which allows for a wider range of dynamics, more flexible intonation, and highly nuanced tone color possibilities.



*Portrait of Theobald Boehm*

Flutists today owe a debt of gratitude to Theobald Boehm, the inventor of the modern flute. In the early 19<sup>th</sup> Century, Boehm took the existing flute and completely revamped it, resulting in an instrument with potential to play more in tune, with a wider range of dynamics and more even tone quality throughout



*(above) Drawing of conical-bore flute by Richard Potter; (below) drawing of Boehm cylindrical-bore flute, with tapered headjoint*

all registers. From a design standpoint, the primary change Boehm implemented was to replace the conical bore of the "Baroque" flute body with a cylindrical bore, preferring instead to taper the headjoint. The process of redesigning the flute required Boehm to find a workable bore diameter, as well as the appropriate tonehole sizes and locations. Through trial and error experimentation, Boehm arrived at a bore diameter of 19 millimeters, after which he set about figuring out the proper placement of the toneholes.

The history of Boehm's experimentation process appears somewhat sketchy. In his writings, Boehm describes testing bores of various diameters, without specifying all the dimensions. He mentions making an instrument with a bore size of 20 millimeters before rejecting it in favor of the smaller bore of 19 millimeters. Running out of time, Boehm opted to halt experimentation with bore sizes, choosing to make adjustments to other specifications of the instrument instead. The odds are slim, however, that a bore size of exactly 19 millimeters indeed serves the best purposes of flutists. Flutemakers over the years have generally chosen to continue with this default bore size, settling for making 19 millimeters the industry standard. In typical form, flutists take what they are given, then they work hard to make up for the deficiencies of their instrument.



*(above) Nagahara Full Concert Model; (below) Nagahara Standard Model, showing differences in headjoint and body lengths*

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However, hard-working musicians deserve the opportunity to bring the best tools available to their art. In keeping with its culture of innovation, Nagahara Flutes has elected to provide an alternative to the default industry standard. Beginning in the 1990s, master craftsman Kanichi Nagahara spent more than 10 years researching the ideal bore diameter. Understanding that better ventilation results in greater air control, dynamic range, and projection, Mr. Nagahara determined that a bore size of 19.3 millimeters provides the musician with those benefits without compromising tone control in the third octave. In 2001, Nagahara Flutes released the Full Concert Model flute. This revolutionary breakthrough in modern flute design features larger toneholes, to improve the flute's ability to speak, and a specially calibrated scale that takes advantage of the instrument's enlarged dimensions for more flexible intonation. Today, flutists play the Full Concert Model in orchestras, universities, and recreational settings across the globe.

	headjoint	center joint	footjoint
FC	<b>9.33 in</b>	<b>13.75 in</b>	<b>6.587 in</b>
	<b>237 mm</b>	<b>349.3 mm</b>	<b>167.3 mm</b>
Center joint and footjoint connected 19.95 in Taper length 5.38 in (136.7 mm)			
ST	8.83 in	14.28 in	6.626 in
	<b>224.3 mm</b>	<b>362.70 mm</b>	<b>168.3 mm</b>
Center joint and footjoint connected 20.53 in Taper length 4.88 in (124 mm)			

*Comparison of dimensions of Full Concert Model (FC) vs. Standard Model (ST)*

Not everyone shares the enthusiasm expressed in the testimonials below. We have received feedback from flutists indicating that the Full Concert flute requires too much time to warm up before getting an acceptable tone, especially in the high register. Others admit that they have trouble playing in tune on the Full Concert flute. The truth is that greater flexibility creates a challenge for many players. Musicians are often accustomed to an automation from their instruments that requires only that one push a button and blow some air to get an adequate response. Enhanced flexibility on the Full Concert flute allows the flutist to produce and maintain subtle pitch differences, but as a result, it also requires a more finely tuned ear to play with proper intonation. The larger bore also requires more energy in the airstream, which some flutists find exhausting.

However, flutists who have thoughtfully taken the risk of switching to the Full Concert have found the required hard work rewarding. An instrument promising more opportunities of color, dynamic range, and flexibility is worth the additional effort. At Nagahara Flutes, we are concerned more with creating musical potential in an instrument than providing instant, but short-lived, gratification to our customers. In the Full Concert Model, Nagahara Flutes has created the expressive flute of the future. We invite you to try the Nagahara Full Concert Model flute to explore new possibilities.

### TESTIMONIALS FROM FULL CONCERT PLAYERS

*"I'm so enjoying the flute, love the combination of exquisite sound possibilities, and the reliability, and easy-under-the-fingers keywork."*

*"I was not in the market for any flute when I tried a Full Concert Flute at an NFA Convention, with no preconceptions. I was immediately taken with the FC sonority, responsiveness, dynamic range and color palette and decided to buy the flute. It is extremely responsive with a full and rich sound, unlike the thin, hard sonority of many other modern responsive flutes. It can produce beautiful sounds at all dynamic levels, and perhaps because of its wider bore, can accept more air than many other flutes. The keys are in a slightly different (for me more comfortable) location than standard flutes, which makes playing a little easier and more natural. The headjoint taper is longer, and colors seem easier to achieve and maintain at all pitch and dynamic levels. Each person will have an individual reaction to each flute, of course, but I encourage everyone to try an FC, even if you're, like me, not in the market, if only to learn what is possible with its unusual design."*

*"I was dissatisfied with my previous flute's tone and responsiveness in the upper register. I had never even heard of Nagahara flutes at the beginning of my search and tried 30+ different flutes from different brands. Some were a decent improvement, but none were good enough to justify the high price tags. After 5 weeks of sending boxes of flutes back and forth across the country, I tried what is now my Nagahara flute. From the first note, the people in the room helping me with blind comparisons immediately loved its sound. Compared to the other flutes, even our favorite ones up until that point, the tone was richer and clearer across all octaves. From my perspective, the flute was the most responsive of all the flutes and felt very good to play. In my first concert about a week after purchasing the flute, the other flutists most definitely noticed (I hadn't told them about the new flute) and unprompted commented on the rich and beautiful tone – especially in the third octave. The biggest differences that I find between the Nagahara Full Concert flute and just about any other flute that I have tried is in its responsiveness and even, rich tone across all octaves and dynamics. Every time I have to play a different flute I'm reminded of just how nice the Nagahara flute makes large intervals even at pianissimo dynamics."*

*"I took home and compared a standard Nagahara flute with the Full Concert Model, and found that they were totally different animals. The resonance, and depth of sound, plus the ability to easily generate intense waves of sound to reach anywhere in a hall are deep personality traits of the FC. Another abiding reason for choosing Nagahara in general is that I am someone who is not just a client. I and my wife have visited Kanichi's workshop more than once and gotten the royal tour personally from him on what he is working on and how the master does his magic. The attention to details is incredible! Working with a boutique master craftsman, the friendship and personal attention which they give to me made all the difference: the person behind the instrument is certainly another very important reason for choosing Nagahara."*

*"On a purely physical level, it was not until I switched to my current Nagahara Full Concert flute that I began to realize some of what was additionally possible with color. This flute is so gratifying for its pitch and color flexibility. Consequently, nuance and color have become part of my vocabulary in such a way that ten years or so ago I would have never thought possible."*