

What IS a “Hand Made” Flute?

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With the proliferation of flute makers and new models, it would seem that the term “hand made” flute is becoming less and less meaningful or appreciated. The high quality of new flutes today makes it very difficult for flutists to distinguish between different models by different makers, all of which claim to be made by hand. There are at least three categories of high quality “hand made” flute makers today, which require new flute customers to understand and distinguish between such differences.

The origin of the “hand made” flute is the design that was produced and made famous by Louis Lot in the late 19th century in France. His instruments were brought to the United States by flutists who had been trained in Europe, and they occupied top playing positions in orchestras and music schools. This design was called “hand made” because it was made by craftsmen in Europe, and later in Boston, who worked with files and hammers, blow torches and burnishers, and the most precise lathes known at the time, the watchmaker’s lathe. On average these flutes could take as many as four to six weeks to build, and generally they were made by only one or two people.

The design of the Louis Lot “hand made” flute was based on soldered tone holes, which were carefully placed in position according to the pitch for which that flute was intended to be used, e.g. A=440 or A=445. Key arms were carefully fitted over the points of each key cup in the French style. The connections between the dependent and independent keys were made by small clutches underneath each key using paper or leather that was sanded to exactly the right thickness to produce a perfect seal. Each pad was shimmed by hand until it produced a perfect air seal. Other important features, such as the embouchure hole, were filed or scraped by hand until the maker was satisfied with the tone and response. Hand engraving of the maker’s name was also a prominent feature, because the maker was proud of his work, and the name gave the instrument its own personality.

In the early part of the 20th century the drawn tone hole was invented, and it soon became the basis for producing more instruments at much lower cost. In this process the body tube was held in a fixture where the tone holes are extruded, or “drawn”, from the body tubing. This process offers the advantage of being one piece construction. Whereas the soldered tone hole may become unsoldered over time, the drawn tone hole would never come off. There has been a continuing debate among flutists as to which design produces a better sounding flute. However, this development in the process of flute making gave birth to the so-called “Commercial Model” flute, because it was made in much larger quantities and sold for a lower price. This design was further developed by giving up the French style pointed arms in favor of “Y” arms, which can easily be assembled on fixtures without the time consuming effort involved in hand fitting. Other improvements included screw adjustments for the connections, pads that are pressed into the tone hole to give an adequate air seal, and pivot screws that don’t have a head for accurately seating the position of the screw. Many other “improvements” have come along, which are too numerous to mention here.

The fact is that all flutes are made by human beings, sitting at workbenches or in front of machines, and assembled very carefully to suit the needs of a certain segment of the flute world. The actual design of many flutes today includes a mixture of features that have been borrowed and improved upon from flutes made in the past 150 years. So, the term “hand made” becomes less and less meaningful as we notice many of the large scale flute companies produce flutes with drawn tone holes and French style keys, or hand cut embouchures and adjusting screws. The traditional meaning of “hand made” has become totally irrelevant in today’s market place.

The terms used to describe a particular model of flute should have some relationship to the actual number of hands that have made each instrument and the number of hours spent on the flute. For example, if Company X has 500 employees and produces 50,000 flutes per year, we can assume that each flute represents the combined effort of those 500 people, and each employee was responsible for the production of 100 flutes per year. If we assume that each employee worked 2000 hours, then each flute represents 20 hours of labor. Take another example where Company Y has only 50 employees and produces 1,000 flutes per year. In this case each flute represents the combined efforts of 50 people and a total of 100 man/hours labor. In another sample company where 2 people have produced only 20 flutes per year, each flute represents the efforts of only 2 people and a total of 200 man/hours per flute. Here are the simple calculations for each example:

<i>Company X</i>	<i>Company Y</i>	<i>Company Z</i>
50,000 flutes/year	1,000 flutes/year	20 flutes/year
500 employees	50 employees	2 employees
100 flutes/employee/year	20 flutes/employee/year	10 flutes/employee/year
$2000 \div 100 = 20$ hours/flute	$2000 \div 20 = 100$ hours/flute	$2000 \div 10 = 200$ hours/flute

In each case above the flutes were made by people, using their hands, for about 2,000 hours per year. But a flute from Company X represents only 20 hours of human effort, Company Y 100 hours, and company Z took 200 hours! These are not entirely hypothetical figures, even though they do not represent any company in particular. It is a well known fact that any product, regardless of the level of precision, can be made by mass production with fewer man/hours by using common manufacturing techniques, which are universally known and widely utilized. The problem for flutists today is to understand the differences between these different makers when looking for a new flute.

It is difficult for people in this ever expanding market place to search for a better flute with discernment and insight. There are important trade-offs that must be made by companies which are expanding and developing new flutes for the modern flutist. Some manufacturing processes will add real value to the finished product when the accuracy accomplished for each part is more precise, when assembled pieces come together more perfectly, or when the finished instrument sounds and responds better. Other so-called improvements gained from manufactured instruments are not valuable when the important features of the traditional “hand made” flute are cast aside in favor of the more easily manufactured “commercial” model. Furthermore, when parts are plated to cover up a poor surface finish, when the embouchure hole is made without adequate undercutting to produce a good tone, when pads are seated by leaving a deep impression, when parts are assembled using techniques that leave the metal soft and pliable, and other such techniques are implemented for the sake of profit alone, the flutist is left in the dark to learn about these problems, usually after the instrument is sold and the customer is left holding the bag.

In the future, perhaps we need a new terminology for our beloved flute that reflects some of these important distinctions. We should have a clearer idea of the difference between the features of the traditional French style flute and the more common commercial model. We also need a different kind of term that distinguishes flutes from large manufactures, small firms, and independent flute makers. For example, flutes made by Company X should be classed as “Mass Produced” or “Manufactured” instruments. Flutes from Company Y could be classed as “Custom Made” or “Hand Made”. Flutes from Company Z could be called “Hand Crafted” or “Designer Circle” flutes. Such terms and distinctions would certainly aid flutists who are new in the field, so they could more easily discern one flute from another.

Below is a comparison list of features that should distinguish the so-called “hand made” flute from the “commercial model”:

Hand Made Model	Commercial Model
Soldered Tone Holes	Drawn and Rolled Tone Holes
“French” style pointed arms	“Y” style arms
Thin wall tubing (.014”)	Thick wall tubing (.016” higher)
Permanent connections, such as paper	Screw adjustments in connections
White gold springs	Bronze or steel springs
Pivot screws with heads that seat tightly	Pivot screws without heads
Pins carefully made, rounded top and bottom	Pins left sharp or ground off flush
Pads carefully shimmed for perfect air seal	Pads pressed into the tone hole without shimming
Embouchure hole carefully undercut	Embouchure hole cut without care
Hand Polished with care	Tumble polished with plating
Marking hand engraved	Marking stamped or machine engraved
Keys fitted square to the mechanism, centered over the tone hole every time, smooth finish	Keys fitted left or right of square, some not centered over the tone hole, rough finish