

The Selmer Factory

By Paul Elmen



At every corner of Paris one is reminded of the history of Paris. Surfacing at Metro Republique, a three hundred-sixty degree turn reveals a corner of history in each view. A short walk places us at the Selmer office on Rue de la Fontaine au Roi. It is here that we meet Patrick Selmer, the great-grandson of Henri Selmer. Henri Selmer was a clarinetist with the Paris Opera Orchestra and the founder of the Selmer Company, which was started in 1885 making mouthpieces and reeds. Later, in 1902, clarinets were produced. Henri's brother, Alexandre, who was a clarinetist with

the Boston Symphony Orchestra showed a selection of clarinets at the St. Louis Exhibition in 1904. As a result of the display of clarinets an important shop was opened in New York. Selmer began producing saxophones shortly after the 1904 Exhibition. When Alexandre returned to Paris in 1918, the American distributorship was sold to George M. Bundy. Bundy had been Alexandre's assistant while in the United States. The distributorship stayed in New York until 1927, when Bundy moved it to Elkhart, Indiana.

Sales were primarily from the Selmer plant in France up until World War II. At that time, the American company began producing its own clarinets and flutes for the rapidly expanding school band programs.

The Selmer USA company is financially independent from the Selmer Paris company.

Saxophones had become very popular instruments in early concert bands such as the Sousa and Goldman Bands. The saxophone had also become the double for violinists, who wanted to play popular music of the day. This explains why the early saxophone sound had that very wide vibrato associated with violinists.

Patrick Selmer drove me, along with



my family, to the Selmer factory in Mantes. Mantes is a lovely, medium-sized town about forty kilometers northwest of Paris toward the Normandy coast. The wind instrument tradition has been in place at Mantes since the mid-seventeenth century. The town of Mantes was designated the location of all brass and woodwind manufacturers since Louis XIV. The string manufacturers are located on Rue de Rome, very close to the Opera in Paris, which at one time housed L'Academie Nationale De Musique. The level of local craftsmanship is very high, and has been for centuries.



As Mantes and its surrounding area have been the site of wind instrument manufacturing for centuries, a number of the employees have had generations of their families working in this industry. This instills a pride of workmanship in the people, bound by tradition, skill of craftsmanship, and personal satisfaction in their work.

The original Selmer factory began

behind the Selmer house in the garden, and quickly expanded to now include most of the street and other avenues nearby. Outside, and immediately inside the factory entrance, are fifty gallon drums full of various raw parts to be drilled, stamped, and shaped into necessary parts for the saxophones. As we enter the factory, we see workers forming the bells of the saxophones. The tenors, baritones, and bass clarinets have bells that are hand-formed. The alto bells are

machine pressed.

The bells start as a sheet of brass. These brass sheets are rolled into the basic shape of the bells and then hand-pounded to finish the shape. The rounded edge of the bell is achieved by rolling the flat edge of the bell over wire, creating the nice, smooth, round edge at the end of the bell.

The Selmer factory produces about



eighteen hundred saxophones each month. A combination of hand-done functions, and some that are completed by automated machinery, are used here.

After the shapes of the body and bell are made, the process of making drawn tone holes begins. The drawn tone holes were a great improvement over the soldered tone holes. This new technique stopped a main area of leakage on the saxophone. After the hole is drilled, a mandrel with metal balls on the end, is pulled through to draw out the brass to form the hole.

The neck of the saxophone has oil injected under pressure, to shape the neck to the correct dimensions. To prevent the neck from breaking when being bent into the proper shape, liquid nitrogen, in the form of ice, is injected. This enables the craftsmen to have less breakage and loss of material. It is much easier to manipulate the neck into the desired shape this way. Before ice was used lead was injected into the neck. This process was too elaborate, with heating, cooling, and then reheating to melt the lead out of the neck. The new process

is easier, more cost efficient, and very practical.

All the metal is tempered and annealed in the process, to maintain the desired shapes. This is quite necessary, as each process disturbs the metal's structure. The bells are spun on a machine to enable the material to have its curved shape.

As we move from the noisy pounding of processing machines, an abundance of small parts is evident in the next area. There are about ten thousand spare parts, consisting of springs, posts, rollers, screws, thumb rests, and



other pieces for all the manufacturing performed here.

Flow charts are used to assist in cost and time management. Each instrument has a chart, showing who worked on it and how much time was involved in each process. We will encounter this information again, at the final station for each instrument.

For the small parts, there are basically three operations: cutting, drilling, and sometimes engraving. As we entered this work area we saw a forest of metal rods to be used in working the small parts. Although the small parts are a lighter color, it is still the same metal. The lighter color is a result of acid cleaning. The small parts are now all made in the factory, but at one time the screws were imported, coming from Switzerland.

Shipping problems arose, however, and quantity was uncontrollable, resulting in short supplies on occasion. At times, quality would have the same difficulties and would exacerbate the quantity problem. It became necessary to be self-sufficient. With self-sufficiency, quantity and quality are maximized, maintaining a steady flow of instruments, and allowing a smoother flow of business decisions. These business decisions and their economic impact could then be controlled more efficiently.

Some of the machines have dual functions, such as drilling small holes

and threading, and with a larger drill bit boring out mouthpieces. Most of these machines are fully automated, except for maintenance and feeding the material into the mechanism. The production of

screws goes on about eighteen hours a day. Springs also are made this way. There are huge bins that these small parts drop into upon completion of machining, joining thousands of the same parts. The machines take about eight hours to set for a new operation, which will run a series of ten thousand to fifteen thousand pieces. The machines are computer driven and are set to make special cuts for shapes, lengths, and thickness. There is quite a din created by all the machines in this work area.

There are ten or twelve people who

work on the mouthpieces. Mouthpieces are first cut to length from long, solid tubes of hard rubber or metal. They are then bored out according to specifications. The facing is cut next in the process, then rubber is hardened with sulfur. Cork is added to the clarinet mouthpieces. All of the mouthpieces are finished by hand.

As I mentioned earlier Selmer has long since expanded beyond the garden area behind the house. Manufacturing and production continues in another building, a few blocks from the house. Reeds are also made here, completing the total, self-sufficiency required for high quality control. This second set of buildings, is where the assembly and finishing take place.

When speaking of a "series," they are referring to a model. For example: The Mark VI was manufactured from about 1954-1973, which was a long run. A normal series is about ten years. The Super Action 80 II was started in 1986 or 1987, so it has been going for eight or nine years now. The two most popular series are the Balanced Action and the Mark VI, this latter series has been identified with so many of the great stars. Selmer is often asked why they don't make the Mark VI today? When a Mark VI is purchased today, it is of course, a used instrument. It has been played for many years and is filled with emotion and a great deal of playing. This cannot be duplicated on a new instrument. The Super Action 80 II has a different sound, a better scale, and improved key mechanisms.

In the second building complex the posts are soldered in the first operation coming from the main building. The positioning of the posts is accomplished by electrical pointing, after which it is attached. From here, the partially completed saxophone is then given an acid bath to remove the excess solder. As we move along, we come upon a room with long rods of wood (grenadilla and rosewood). The wood comes from Africa and South America, and is pre-selected upon arrival into France. At this point, we discover that Selmer imports the needle springs and plastic thumb rests because it is more economical to do so.

The horn is buffed, and then it goes

to an ultra-sonic cleaning to remove dust and buffing residue. Lacquering is next. The horns are sprayed, and then cooked at eighty-six degrees centigrade (one hundred sixty-nine and six tenths degrees Fahrenheit) to harden and set. There is a control point after this process, as there are after the major manufacturing stations along the route to completion.

Now comes the fascinating process of engraving. The scrolling is all done by hand with an assortment of edges and shaped blades. The engraving on each horn is unique, they all vary. When a blade slips, a different design can take shape to incorporate that slip of the blade.

For a while the saxophones sent to the United States did not have the engraving because it was too expensive. The prices of the horns then were higher, so the American stores wanted horns without engraving to save on the cost. When the Series 80 II came out Selmer said the engraving was going on the horns. The engraving adds so much to the appearance of the horn, regardless of the shine it possesses.

About twenty percent of the horns are silver-plated on a regular basis. Gold-plating is done on request, as a special order. This is the final manufacturing step before assembling the instrument. Barrels of stamped-out, used sheets of brass, are recycled. All the soldering of keys occurs here. The workers rotate about every hour, moving to a different assembly process. This keeps the immediate work environment stimulating and results in a higher quality of production. The altos and tenors are more standardized in the parts and the manufacturing process. More "traditional" workers are used to assemble the sopranos and baritones.

Now the horns go into a room with about six or seven people who test the horns. Each station has a horn and its flow chart. The testers use a leak light to make sure the pads are seated properly. The key mechanisms are checked to see that they run smoothly. If any error is found, the flow chart shows which station is responsible, and corrections are made at that specific manufacturing station. After the horn is checked, the moment of truth comes in the playing. A sound test is employed,

and sometimes the horn is checked again as a result. I had the opportunity to play an alto in the testing room. This new series has characteristics of the Balanced Action and the Mark VI series. The scale is much more even, and the horn played beautifully.

My visit to the Selmer factory was very enlightening and a great pleasure. The care with which the instruments are made is very high, and the pride of craftsmanship is visible in each worker in the factory. §