MEET A MAKER

THE BUFFET-CRAMPON COMPANY

When today we hear in our orchestras the chant of these flutes, oboes, clarinets, bassoons and saxophones which delight us by the purity of their timbre and their irreproachable intonation - and also when we admire the perfection of their workmanship and the precision of their ingenious mechanism - we cannot help wondering what were their predecessors and most distant ancestors. The degree of perfection in our modern instruments has only been achieved very slowly and often over a long period of centuries. For if in certain rare cases their birth is relatively recent, (such as the SAXOPHONE of which the prototype only dates from 1841 - patented in 1846 - and the CLARINET which only made its bow in 1690), others were already known in far distant times, such as the FLUTE and the Greek AULOS (forerunner of our oboe), or also they were at least known at the outset of the Middle Ages. It is therefore not without interest to follow briefly their growth which has nevertheless been so slow. And this survey, permitting a comparison between their rudimentary features in the distant past and their present state of perfection, forces our admiration all the more for the talent - not to say the genius - of the artisans and artists who have accomplished such a marvelous transformation.

In all ages and in all parts of the world, man's musical instinct has suggested the production of sounds either by blowing into tubes of various shapes or by using primitive handmade stringed instruments of which the strings were either rubbed, plucked or tapped.

Of the instruments operated by man's breath, the FLUTE may be considered as the most ancient. In early Grecian times it existed as the SYRINX or PAN'S FLUTE, which was simply a number of reeds of differing lengths, tied together. Then came much later the BEAK-FLUTE, or FLAGEOLET, a simple cylindrical tube pierced first of all with three holes, then with six. The "GALOUBET", with three perforations and without keys, and which is still used in the south of France, represents the simplest type of beak-flute such as it existed in the Middle Ages.

The GERMAN FLUTE, or "FLUTE TRAVERSIÈRE", which has its orifice cut in the side of the tube, was introduced into France at the time of the Renaissance by the German minstrels, thus explaining its name, but it must not be deduced from this that it was invented by the Germans as its real origin has never been clearly established. In his fine book, "The origins of musical instruments", André Schaeffner has shown that the "flûte traversière" can be traced back over a very long but uncertain period of time, and even existed among certain tribes of savages. How long the instrument had been in use among them will never be known as when our European explorers reached them and questioned them on the matter, they were quite incapable of replying. And in the same way, rudimentary flageolets have been played in many parts of the world from time immemorial, as very ancient instruments of this kind, dating back to the pre-Columbian epoch, have been found amongst the Incas. These discoveries prove to us therefore that the origin and use of the flute, in one form or another, are lost in the night of time.

Plate 1 (from left to right)
Cromorna
English horn (alto-oboe)
Baritone-oboe
Tenor-oboe

The modern oboe, as we know it, has also a venerable ancestry. We can trace it first to the ancient Greeks under the name of AULOS which was not a double beak-flute, as it was believed over too long a period, but the coupling of two tubes perforated with holes and furnished with a double reed. In the Middle Ages, and in the

form of a simple pipe, the instrument formed part of the family of BOMBARDI and CROMORNAS: it was known in France as the TOURNEBOUT, as the extremity was "turned" or curved up. The word "cromorna", is derived from the German KRUMMHORN which signifies a "bent horn".

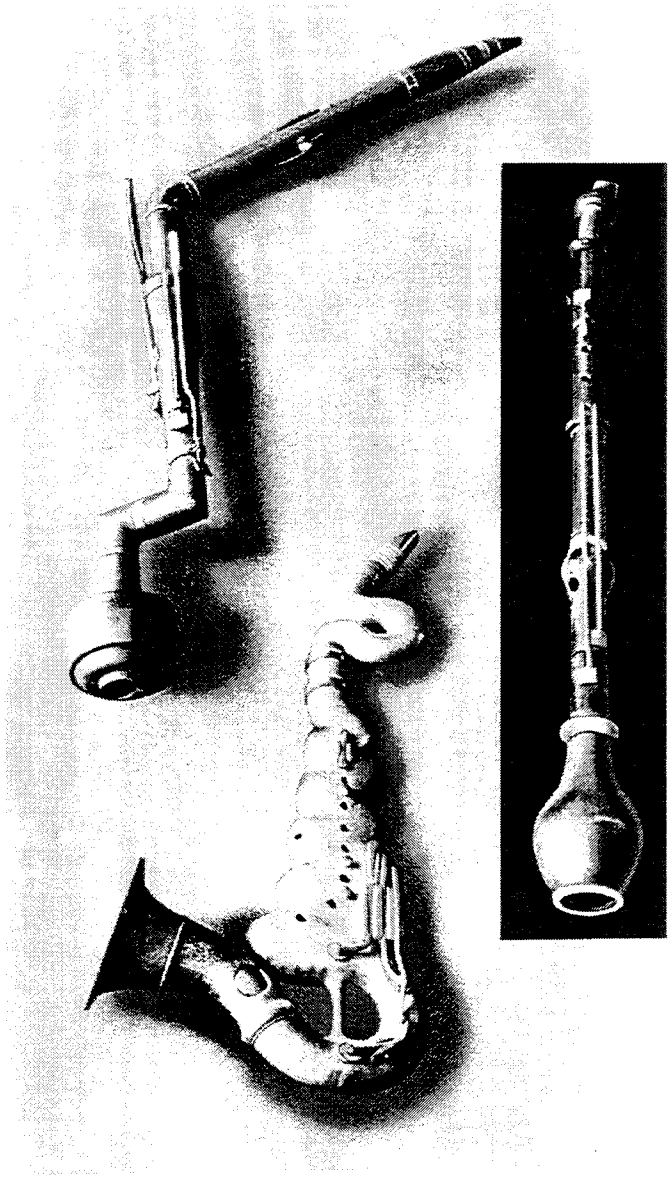


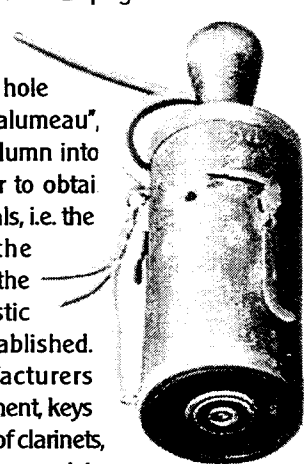
***Plate II** (from left to right)*
Basset horn, Bass-clarinet, Clarinet

The BOMBARD and the CROMORNA gave birth, much later, to the OBOE which became in turn the forerunner of quite a family. On plate 1, for example, near the cromorna, we can see one of its offspring, an alto-oboe or ENGLISH HORN (in French: COR ANGLAIS). The bent form of this instrument may perhaps justify the term "horn" in its name but there appear absolutely no grounds for calling it "English" as it was not invented by the English who formerly, as a matter of fact, used to call it the "French horn" (??). The most likely explanation of the name "English horn" seems to derive from a mistaken translation of the German "ENGLISCHES HORN" which signifies both "ENGLISH HORN" and "ANGELIC HORN", as the Germans had a special fondness for the sweet and expressive tone of the instrument. It appears therefore quite possible that they should have named it "angelic horn", all the more so as there existed already a soft, sweet-toned stringed instrument called "the angelical."

For a long time wind instruments had no keys, these latter only being added step by step in line with the ingenious discoveries of the makers whose aim it was to facilitate the playing of the instrument. As one can see from plate 1 the cromorna has no mechanism whatever and the English horn has but few keys. On the same plate we present a BARITONE-OBOE, already richer in keys and which curiously affects the shape of an Alsatian pipe. On the right of Plate I is shown a TENOR-OBOE (another name for the "cor anglais" or English horn) but in this case the form is straight.

As we are in the domain of double-reeded instruments let us take a glance into the ancestry of our present-day bassoon. This originated certainly in the mediaeval "DULCIAN" of deep and sweet tone, an instrument taking a bass part, but mention must also be made of a strange contraption which can be seen below: this is the "CERVELAS" or "SAUSAGE", so named from its short, thick and podgy shape, certainly not without resemblance to its edible namesake! It had a long bent tube inside. As to the RACKETT or RANKET, cited by Praetorius, this was a similar instrument but having a mouthpiece in place of a reed. It was in use as early as the 15th century.

Let us pass now to the clarinet and look into its origin. During all the Middle Ages and later, well beyond the period of the Renaissance, a cylindrical instrument, having only one single reed, was in use under the name of SHAWM, (French: "CHALUMEAU", from the Latin "calamus", reed) concurrently with the conical double-reeded shawm which could produce the second octave like the old bombardi, or POMMERS. The compass of the "cylindrical" shawm was fairly limited, this instrument being unable to produce the octave harmonic, and consequently the second octave but, in 1690, a German manufacturer, Johann Christopher Denner (born 1655 in Leipzig and who died in 1707 at Nuremberg where he had established his business), made an all-important discovery by piercing a hole exactly at the upper third of the "chalumeau", just where a knot divides the air column into three, and thus enabling the player to obtai the 3rd harmonic of the fundamentals, i.e. the upper twelfth. In this way the "quintoiement" (or production of the fifths) was found and the acoustic principle of the clarinet duly established. Denner's son and other manufacturers perfected still further the new instrument, keys were added and soon a whole family of clarinets, covering both the lower and the higher registers, came into being. In all these new instruments, however, the name "chalumeau" - the venerable



Cervelas

ancestor - was retained to designate the register of the natural fundamental scale, whereas the acute register (harmonics of the twelfth) was called the, "clarion" - a tradition which is still respected.

About 1771, a Bavarian manufacturer named Horn invented the BASSET-HORN, or alto-clarinet in F, which instrument was subsequently perfected by the brothers Stadler, celebrated manufacturers of Vienna. The basset-horn could go down then to low C and it was this instrument that Mozart used in 1781 for his admirable "GRAND SERENADE FOR WIND INSTRUMENTS" and also in his two "ADAGIOS" (K. 410-411). As one can see on the left of **Plate II** the basset-horn assumed the strangest shapes. The one we reproduce is all angles, with a brass bell and it has ten keys. As to the BASS-CLARINET, extremely difficult to play when it was invented in 1793 by Grenser in Saxony, many were the attempts made to perfect its fingerings, and the instrument itself assumed the weirdest shapes, as is shown by the specimen just in the centre of Plate II. This "serpentiform" bass-clarinet is due to the Italian Papalino, of Chiaravalli, who produced it right at the beginning of the 19th century. On the right of the same plate we show a further deep-toned model, called the CLARINET D'AMOR which has a pear-shaped bell similar to that of the English horn.

Since the invention of the clarinet by J. Chr. Denner, in 1690, his instrument having 2 keys only, the soprano-clarinet, which typifies the group, has witnessed a progressive increase in the number of its keys and there were already 6 when Xavier Lefèvre (1763-1829) was appointed head of the clarinet class at the time of the foundation of the French "Conservatoire National de Musique" in August 1795. But this poor system restricted players to a limited number of keys and clarinetists were then obliged to take several instruments and extra parts with them when playing at a concert. Then, in 1811, the Germano-Estonian clarinetist and manufacturer Ivan Muller (1786-1824) produced an instrument with 13 keys, which marked already very considerable progress, but much more remained to be done. And it is this stage in the development of the clarinet which will serve as our starting point in retracing the immense influence which the firm of Buffet-Crampon has exercised, since 1825, in bringing the clarinet to its present pitch of perfection, with the help of a pleiad of notable artists of whom the first and most illustrious was the incomparable virtuoso of the clarinet, H. E. Klosé.

***H. E. KLOSE** (1808-1880) the famous virtuoso who made known to the world the Boehm system clarinet.*

A skilled French instrument maker named Buffet-Auger, set up in 1825 his business right in the heart of Paris, Passage du GrandCerf (where still today Buffet-Crampon has its head-office and its sales warehouse), and he soon became known in musical circles by the outstanding quality of his clarinets made with 13 keys according to the Ivan Muller system which was then at the height of its fame. Like all his confrères, Buffet-Auger was a simple artisan who, with a few helpers whom he guided with great skill, worked like them almost entirely with his hands - and that for the very excellent reason that the mechanical side of the industry was then almost entirely inexistent save for the pedal-lathe which as in the earlier centuries was the only mechanical aid available.

BUFFET-AUGER and his family specialized in the manufacture of clarinets, his son and younger brother (Louis-Auguste Buffet) being like himself past masters in this art. In 1830, Buffet-Auger left the firm to his son - who married in 1836 Miss Crampon - and who decided to add his wife's name to his own in order to distinguish himself from his uncle. As to the latter (Louis-Auguste), a tireless worker and with his head always full of ideas, he had the good fortune to link up with an exceptionally gifted clarinetist, Hyacinthe-Éléonor Klosé, whose fate it was to play an outstanding role in the history of his instrument. Klosé was born in 1808 on the island of Corfu but when still quite young he went to France in order to study music. After playing for a time in the band of the 6th regiment of the Royal Guards, he was appointed bandmaster to the 9th Light Infantry regiment, but resigned in 1836. During this time the young clarinetist had made astonishing progress in perfecting his virtuosity under the guidance of his teacher Friedrich Berr, Professor at the French Conservatoire, and when the latter died in 1838 Klosé was appointed to replace him, due to the reputation he had acquired. But Klosé was not only a virtuoso and an incomparable teacher, he had (like Louis-Auguste Buffet) an inquiring and inventive brain: so together they undertook to perfect the mechanism of the 13 key clarinet and they had the genial idea to apply to the instrument the system of articulated rings which the German Theobald Boehm (1794-1881) had invented for the flute. The problem proved far more complicated for the clarinet but the cooperation of the two friends enabled them to perfect their plans down to the smallest details.

The new, or "Boehm" clarinet was thus born and brought before the public in 1839: it immediately met with success among connoisseurs and in 1844 a patent was taken out under #16036. Naturally, as is the case with most inventions, criticisms and some obstruction were encountered on the part of certain artists who were used to the 13 key instrument, but the new system revealed itself so far superior, it overcame so many difficul-

ties in the fingering of certain passages, trills and rapid runs which up to then it had been practically impossible to execute that it lost no time in taking a firm and permanent hold on the musical world, marking thus the end of the Ivan Muller instrument. The new "Boehm" system was thus adopted by all the different makers and Buffet-Crampon was naturally the first to exploit and to disseminate his uncle and Klosé's joint invention, for the greater joy of all clarinetists.

In 1850, due to the considerable progress which the business had accomplished, Buffet-Crampon went into partnership with his brother Louis and F. Tournier: and the same year it was found necessary to establish an atelier outside Paris concurrently with the one in the Passage du Grand-Cerf. In this way an entirely new industry was to make its appearance at Mantes-la-Jolie, a charming country spot about 35 miles west of Paris. We shall see in the following paragraphs how from this modest beginning an important factory was to be created.

Five years later, thus in 1855, Louis Buffet was replaced by P. Goumas. F. Tournier died in 1859 and it was then that a new company, Buffet-Crampon & Co., was formed between Buffet-Crampon, P. Goumas and the clarinetist Leroy, a pupil of Klosé. April 17th, 1865 was a sad day for the business as it was marked by the death of the founder, Buffet-Crampon, and as Leroy had retired, P. Goumas remained alone at the head of the firm which, however, was never to drop the name of Buffet-Crampon so well known in the world of music. In that same year, 1865, the maestro Klosé, who had done such splendid work in renovating the art of the clarinet, was awarded the cross of the Legion of Honour by the Imperial Government. Three years later, at the age of sixty he retired from the Conservatoire, surrounded by the affection and esteem of his many pupils.

In 1871, P. Goumas took his two sons-in-law, Leon Legeay and Leon Crampon, into the business which had continued to develop, and the Mantes factory no longer limited its production to clarinets: all key instruments were turned out, including of course saxophones which were then quite a novelty. As one universal exhibition followed another, Buffet-Crampon carried off the highest awards and, in 1878, by a unanimous vote, the firm obtained the Gold Medal for its presentation of 42 instruments: complete families of clarinets and saxophones, oboes, flutes and bassoons. The jury declared moreover that all the instruments exposed were perfect, as well for pitch as for quality. And it was a joy for the veteran Klosé to witness this success, the triumph of the Boehm system which he had so ingeniously applied to the clarinet. Our virtuoso had still two years to live and, at the end of August 1880, he passed away peacefully in Paris.

On July Ist 1885 Goumas was awarded the cross of the Legion of Honour in consecration of all the fine work he had accomplished. Then shortly after, in August of the same year, he turned over the management of the firm to Paul Evette and Ernest Schaeffer. Under these latter the reputation of the business continued to progress and, at the 1889 Exhibition, the only first prize granted went as a supreme award to Evette and Schaeffer who personified the fine old name of Buffet-Crampon. This outstanding success had as an immediate result the appointment of Buffet-Crampon in France as the official suppliers of wind instruments to the Paris Conservatoire National de Musique as also to its provincial branches and to various other musical academies in France: and to all this must be added the numerous and important overseas orders which the firm received.

Paul Evette died on March 25th 1918 and the management of the business was passed on to his son Maurice who remained in charge until 1929. Upon his retirement a joint-stock company was formed with Mr. Paul E. Le Seigneur as chief executive, Gabriel Franot, an ex-regimental bandmaster, as business manager, while the technical management of the factory was assured by Paul Lefèvre. Gabriel Franot having died prematurely in the spring of 1938, Mr. P. E. Le Seigneur became sole manager of the new limited liability company which was then constituted and is still operative today, Mr. Robert Carrée having taken over the technical management of the Mantes factory upon the death of Paul Lefèvre.

From the most skilled specialist to the most exacting player. If the name of Buffet-Crampon has acquired such a reputation over a long period past, and is universally known today, and if the firm is able to export in ever increasing quantities the high-class instruments manufactured in its workshops, it is due not only to its long experience, going back over a century, but to the fact that it makes use of the most up-to-date and perfected machinery, run by a staff of specialists under the supervision of a technical manager and foremen always on the alert for the slightest shortcomings. And a further reason is that all the instruments - of whatever nature -receive before leaving the factory a thorough testing by eminent specialists and virtuosi, chosen among the best. When the test has given full satisfaction, when the tiniest defects have been corrected - either from the point of view of pitch or in the mechanism - only then is the instrument given its exeat before delivery in full confidence to the eventual purchaser, under the firm's guarantee.

We have shown in the preceding paragraphs that all the instruments were entirely made by hand when the business was founded in Paris in 1825. It is easy to imagine the high degree of manual skill which the artisans of that period had to attain in order to overcome all the problems and difficulties which faced them, and this state of things lasted quite a number of years. Little by little however certain rudimentary mechanical appliances enabled the first stages of the work to be done, after which however the instruments were finished by hand with the aid of the appropriate tools: files, pliers, gouges, fraises, saws, etc., while the keys were hammered out. All this shows again the skill of the men who carried out manually and so successfully such delicate work.

When, in 1850, Buffet-Crampon, his brother Louis and F. Tournier opened their workshop at Mantes, the staff consisted in all and for all of... three workmen! This was certainly a very slender

beginning but the men in question were helped by a few of the local residents whom they had taught to make some of the auxiliary parts for the instruments, including the pads and springs. This work was done at home, and certain of these part-time helpers specialized in making keys, others took home the rudimentary wooden bodies of the instruments as they came off the lathe and adjusted the keys and the articulated rings, and it was only after this stage in the procedure that the precise calculations were made for boring the finger-holes: and all this of course was done by hand. The outcome of all this careful and skilled work was to produce a range of instruments attaining a comparatively high degree of precision but, after all, this could only be relative. Nevertheless, and allowing for the empiricism of the manufacturing methods employed - necessitating the occasional rejection of some part of the output as substandard - the firm succeeded in producing instruments of real quality, but only, of course, in strictly limited quantities. Every effort was made, however, by the management to deliver to its clients and artists nothing but high-class instruments.

It now became a vital necessity to find ways and means of increasing production and reducing overhead costs without in any way impairing the quality of the instruments. The introduction of machinery could alone solve this problem - which moreover was being felt throughout the whole field of manufacturing - and the time had come when the artisan had to yield his place to the oncoming tide of industry. Little by little machines of ever increasing precision were invented, and in the field of musical instrument production, Buffet-Crampon was always in the lead. At the first opportunity a steam-powered, 25 h.p. machine was installed in the Mantes factory, which at the time represented quite an achievement - although naturally in due course this was in turn replaced by more powerful electrical motors. Today the modest workshop of 1850 has given place to an extended factory which employs more than one hundred specialists, without counting the outdoor staff who still work at home or in town for account of the firm. A rapid tour of the factory will enable us to better appreciate the many and varied aspects of its activity.

Under the capable guidance of Mr. Robert Carrée, technical manager of the plant, we can follow in detail the making of a clarinet from the raw material stage right up to the finished instrument. One must first of all note the two main elements in the fabrication: a) - all that concerns the wood, and b) -all that has to do exclusively with the metal. Therefore on the one hand we have the cabinet-making aspect, and on the other the metallurgical, and both follow a parallel course according to a rigorously established programme: the various operations are accomplished with methodical precision and when, in each of the two main subdivisions (wood and metal), the individual parts are completed, it is then possible to put the instrument together in its finished form.

Let us follow first the various transformations through which the wood passes, i.e. the basic grenadilla as it reaches the factory direct from East Africa. The wood as delivered has already been partially prepared, being cut into small segments for use as follows: the rectangular parallelepipeds, or, "carrelets" measuring 37x37x275 millimetres, are destined for the lower body of the clarinets; others, 37x 37x 245 m/m are for the upper body of the instrument; some still smaller, viz. 37x37x70 m/m are for the barrels and finally the bells are carved from small blocks of ebony shaped like truncated pyramids and measuring 40x40 m/m at the top, 65x65 m/m at the bottom, and having a height of 120 m/m. Needless to say all the wood used is of the finest quality available.

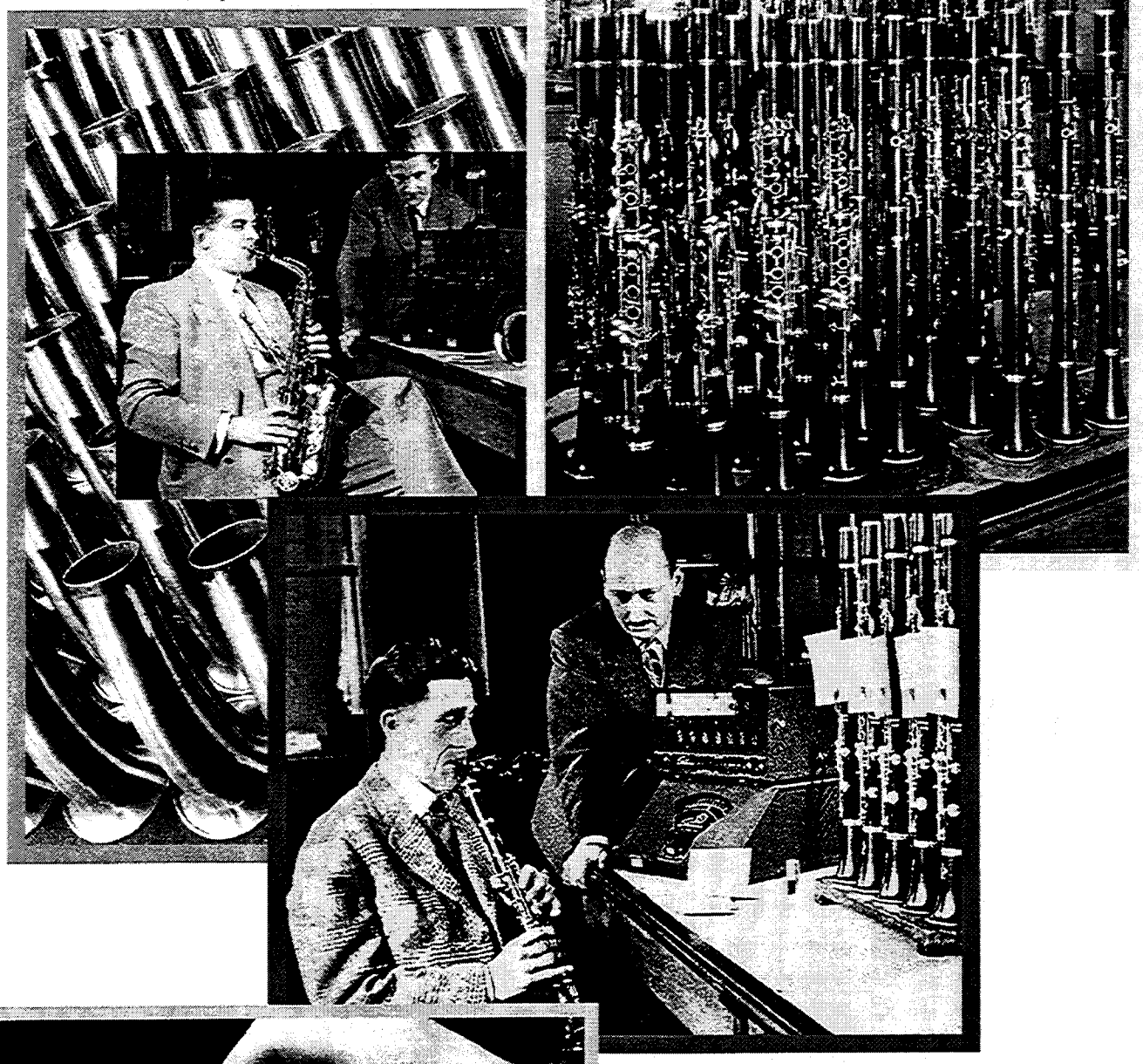
On reception all the woods are roughed out, shaped and drilled lengthwise on a special lathe. Then these bodies are ranged in the pigeonholes of the wood storehouse where they will be left for drying in open air for a period of about three years. The barrels and bells are in turn dressed and trimmed by lathe and bored; they are then grouped in chaplets, threaded on strings and also set aside in the wood storehouse to be left to dry like the other parts and for a similar period.

After this long drying period, indispensable for the "stability" of the instruments, the bodies are then fashioned in order to undergo the ensuing stages of actual manufacture. The first operation is the drilling of the bore a little under the definitive dimensions for the reasons given later on. Then, on a planing lathe, the next operation is the preparation of the "épaulements", or shoulder pieces, preliminary to carving the "bosses". These latter consist of all those parts of the wooden framework which stand out from the body of the instrument itself, all the small protuberances necessary for piercing the lateral holes which receive a raised edge and which later will be hollowed out to receive the mobile metal ring, exactly fitted to its circular groove. The bosses are not fashioned at the outset, first the "épaulements" have to be prepared and carved, as indicated above.

To better understand what exactly is meant by these "épaulements", or shoulder pieces, one can study the photos A, B and C, on page 61. Fig. A represents the cylindrical wooden segment before the tooling operation which produces the "épaulements". The segment is placed on a lathe which, in one moment, planes off all the parts where no bosses are foreseen; on the whole of this surface the diameter of the cylindrical tube will therefore be slightly reduced. The only portions remaining in relief will be the wooden circles, the concentrical rings, which can be seen on Fig. B and it is precisely out of these rings or circles - thicker than the adjacent parts which have been planed - that the bosses are fashioned. This operation is carried out by another lathe, invented by Buffet-Crampon, which carves off all the superfluous wood thus producing the new aspect as shown on Fig. C. These bodies or joints will be pumiced and oiled for a second period of drying which varies from 6 to 8 months. Yet another lathe is employed for tooling and shaping the extremities of the wooden joints into either sockets or tenons: the latter are subsequently covered with cork, thus ensuring the absolute stability and airtightness of the joints throughout the whole body of the clarinet when all is finished and the instrument is ready for playing.

When all the bosses have been formed on one body of the instrument, the next step is to pass on to the machine which bores all the lateral holes, as well as those destined later to produce the notes under the fingers of the artist, and also the small superficial cavities

Daniel Deffayet is here seen testing saxophones; with him is the clarinetist Jacques Lancelot. C. 1960



Jacques Lancelot testing and controlling clarinets with the help of the "Stroboconn". C. 1960

in which will be screwed the pivots of the rods, posts which are called "boules" (tiny spheres). All the necessary notches are also marked out on the wood by the drilling machine in question, and it is fascinating to see this highly perfected instrument at work. Enormous progress has been realized over the work done formerly by hand for, whereas in the old days errors, and sometimes fairly obvious ones, could arise in the marking out of the holes, today such errors are absolutely impossible. The special aspect of this admirable machine is the large steel cylinder on which are marked, with the utmost precision, all the points where the holes, large or small, deep or shallow, have to be drilled. This cylinder, with its precious indications, revolves at the same speed, and on a parallel axis, as the piece of wood ready to be drilled. The rotation is not continuous and can be regulated by the workman charged with boring the holes with the appropriate bits - and following the indications of the cylinder - without the slightest risk of error. All the guiding marks are reproduced exactly on the wood, thus permitting the drilling to be accomplished with rigorously mathematical precision.

Not far from this drilling machine we can follow the "tapping" of all the small holes destined for the various screws: the threads are prepared rapidly on a special machine. When the drilling and tapping operations are over, the wooden bodies are ready to receive the posts or "boules". Then comes the shaping of the sonorous tube with "boring tools". The calibre of these tools, sort of long steel bayonets, is minutely calculated according quotas which represent an important secret of manufacturing process. Each firm, each mark has its own special 11 bore, which plays an all-important role in the air-column which by its vibrations produces the sound. It is for these various reasons that the bores were "restrained" until this last operation which is trusted on a member of the "mastership".

We come now into the metallurgical aspect of the question, but before going on, a word must be said regarding the carving of the barrels and the bells of the instruments, and it is fascinating also to follow the work of the lathes whose function it is to perform these operations with a similar degree of precision. The graceful widening out of the bells and delicate curving of the barrels are accomplished as by enchantment, and the two operations are carried out faultlessly in less time than it takes to write it. These are further examples of the wizardry of our modern machine age.

On the metallurgical side of the manufacture of the instruments we come first to the pressing out of the nickel-silver keys: this is done by machines having a pressure of 45 tons. Subsequently the keys pass through another machine (pressure 35 tons), on which they are stamped into final or standard shape, each key espousing the outline of the matrix with such precision that all are interchangeable. The rings are cut out and stamped in similar fashion, after which operations we come to the brazing of certain of the metal parts. This is done by hand, but very rapidly, thanks to the expert skill of the specialists involved. As to the posts, or "boules", they are tooled mechanically with the same overall precision.

A further remarkable feature is the machine which, in one operation and with the greatest speed, fraises all the pivots mounted on a supporting cylinder: sharp circular blades cut into these tiny "posts" and with extraordinary accuracy level down the faces destined to be mounted with the screws. The posts are then drilled on another machine. Further still comes the polishing of all the metal accessories, - this operation being entrusted to very fast buffing machines which give a magnificent finish.

All the independent parts, once completed, are passed on to the mounters who adjust and assemble them by hand. The pads of felt & gold-beater's skin, are then fixed on as well as the various springs. The ebonite mouthpieces having already been molded and polished, the cork is then affixed to the tenons: and when thus the clarinets are completely finished they are put aside on special trays-held upright by the bells on vertical supports, and are then ready to be tested by the clarinetist-virtuosi.

We have laid particular stress on the making of clarinets as these instruments constitute the major part of the output of the firm: but saxophones of the highest quality and workmanship are also manufactured by Buffet-Crampon in substantial quantities. The bodies of these instruments are cut by hand out of brass sheets and then shaped by mallet on appropriate mandrels but all the key work is done by machinery. The saxophones are then lacquered in an oven, after which they appear in all their opulant livery - a coat of golden lacquer, guaranteed of lasting quality. Other of the saxophones are silver-plated with or without a gilded bell, following the taste of the client. Today the proportion of the former or gilt saxophones is well ahead of the silver-plated models.

The making of the flutes, oboes and bassoons is still done entirely by hand, the output of these latter instruments being far smaller. But all the work is carried out by qualified specialists and is capable of giving the fullest satisfaction to the most exacting artist, just as for the clarinets and saxophones.

Since the inception of the firm, Buffet-Crampon has always made a point of having its instruments tested by eminent artists, not only to ensure their perfect pitch and purity of intonation, but also to avoid the slightest irregularity or lack of flexibility in the mechanism. At the outset, as we have seen, it was H. E. Klosé who tested the clarinets, and he was succeeded by other prominent artists among whom special mention must be made of C. Rose, Professor at the Paris Conservatoire during the last twenty years of the 19th century, and Henri Lefebvre, clarinet-solo at the Opéra and the Lamoureux Concerts at the commencement of the 20th. Subsequently, about 1931, it was the latter's nephew, Pierre Lefebvre, who was entrusted with the testing of the clarinets. This remarkable artist, who was for many years first clarinet solo of the Lamoureux Concerts, of the Garde Républicaine Band, and a member of the famous "Trio d'Anches" (Reed Trio), was also first clarinet-solo at the Paris Opéra-Comique. An incredible number of clarinets had passed through his hands and he certainly holds the record for the number of instruments tested. But to keep pace with the constantly growing production it became necessary to bring in someone to second Pierre Lefebvre, and thus, he found an ideal assistant in his young and talented confrère Jacques Lancelot, former clarinet-solo of the Lamoureux Concerts and who, at that time was Professor at the Rouen Conservatoire: both Pierre Lefebvre and Jacques Lancelot were *moreover artist-virtuosi* members of the eminent Fernand Oubradous

chamber-music society. One can thus see that under the talented and exacting control of two such masters of their art, the Buffet-Crampon clarinets had nothing to fear from the point of view of testing. One must also quote, among the artists who have tested the clarinets of the firm: Maurice Briançon, ex-E flat clarinet-solo of the Garde Républicaine Band and the leading concerts; also Georges Pigassou, ex-bass clarinet of the Opéra-Comique and of the Lamoureux Concerts, and who was a member previously, in America, of Toscanini's famous orchestra.

As to their oboes and English horns, Buffet-Crampon were fortunate in having for a long while the assistance of the prominent virtuoso Myrtil Morel, oboe-solo of Colonne Concerts, of the Garde Républicaine Band, of Oubradous Concerts, and who was also member of the Trio d'Anches 1, (Reed Trio). Later, Pierre Pierlot, the remarkable soloist of the Opéra-Comique and of Oubradous Concerts, ex-soloist of Lamoureux Concerts, who, in his own inimitable way, tested Buffet-Crampon's oboes and English horns.

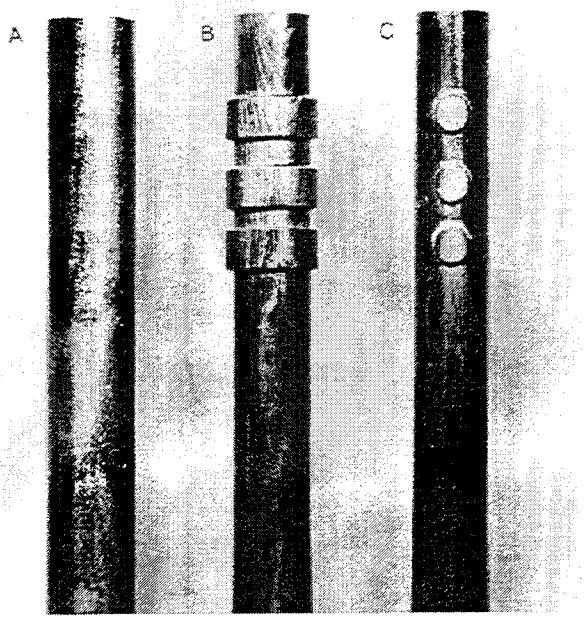
During a long period the bassoons were tested by the late regretted Leon Letellier, Professor at the Conservatoire, and soloist at the Opéra and the Société des Concerts. When he retired it was his pupil and disciple Fernand Oubradous who replaced him for the testing of these instruments. Before reaching fame as the conductor of the admirable concert group which bears his name, and also before he was appointed Professor of the Instrumental Ensemble class at the Conservatoire, Fernand Oubradous was a master of the bassoon, soloist at the Opéra and at the Société des Concerts, and, with his friends Pierre Lefebvre and Myrtil Morel, a member of the "Trio d'Anches". After having formed his own chamber orchestra, Fernand Oubradous became artistic adviser to Buffet-Crampon and the testing of the bassoons was handed over to a young but most highly talented bassoonist, Maurice Allard, first soloist at the Opéra and who was also for a number of years first bassoon at the Lamoureux Concerts. Meanwhile his outstanding talent obtained for him a Professorship at the Paris Conservatoire where he succeeded his own master Gustave Dhérin, soloist at Colonne Concerts and at the Opéra-Comique: and regarding this latter, although Gustave Dherin was not officially in charge of testing the Buffet-Crampon bassoons, he always came there personally each year to choose the instruments for the pupils of his class. And at this point it is important to state that Buffet-Crampon has no rival in France for the supply of bassoons: one can safely state that at that time all the bassoons and contrabassoons played in the principal lyric theatres and the main symphony orchestras were Buffet-Crampon instruments. Let us add that the contrabassoons were all tested by Paul Hongne, then soloist at the Opéra and also of the Fernand Oubradous concert group.

Coming now to the flutes, these were tested for several years by J.P. Rampal but the testing later was the responsibility of Kurt Redel, known universally for his recordings, and R. Hériché, of the Opéra. As to the saxophones, foremost artist-musicians like Fernand Lhomme, soloist of the Garde Républicaine Band and of the principal concert associations, and Daniel Deffayet, the outstanding concert virtuoso and soloist at the Opéra, the Opéra-Comique, the National Radio Orchestra and the large symphonic concert groups, were in charge of the testing. And at this point we must pay tribute to the memory of Raymond Pont, baritonesaxophone soloist of the Garde Républicaine, and member of the Saxophone Quartette, and who has left a lasting souvenir in the firm. The highly reputed Quartette which we have just named only used instruments bearing the Buffet-Crampon trademark: the Quartette was made up of: M. Nouaux, soprano-saxo (replacing F. Lhomme, retired), H. Pollin, altosaxo (replacing L. Daquet), R. Gateau, tenor-saxo, and A. Beun, baritone-saxo (replacing R. Ceugnard).

What has been said above goes to show that all the instruments which leave the salerooms, of whatever category, are tested in the most exacting fashion by specialized artists of the highest calibre. And we must not close this discussion without a fervent hommage to the memory of an outstanding clarinetist who, although not officially attached to the staff in a testing capacity, was nevertheless for Buffet-Crampon a very close and most efficient collaborator, the celebrated Louis Cahuzac, first clarinet-solo of Colonne Concerts and who, after a most brilliant career, died during the summer of 1960, aged eighty, as the result of a stupid accident. He was still, at this age, an extraordinary clarinetist, and he had always remained faithful to the instruments of Buffet-Crampon since, in 1899, he had obtained a brilliant first prize at the Conservatoire, in the class of his professor Rose. Louis Cahuzac was a concert soloist and a conductor whose name will always be remembered in the annals of music, not only in France but also abroad. He was always for the firm Buffet-Crampon and its instruments, which he admired so much, a devoted and admirable ambassador during his memorable concert tours around the world.

The various artists who have accepted the responsible task of testing the Buffet-Crampon instruments are all endowed, needless to say, with a faultless sense of hearing: in addition, however, they can now fall back on a marvellous electronic device which, by controlling with the utmost precision their own delicate work, enables perfection to be obtained. The human ear, however sensitive it may be, is always subject to fatigue after testing a number of instruments, particularly when the pitch is not identical in each case. In this connection it must be remembered that there is far from being universal agreement regarding pitch, and that the difference in the number of vibrations per second corresponding for example to A^3 - in the French and continental system - is at times considerable. In France, since the decree of February 16th 1859, which fixed officially the pitch at 435 double vibrations, the said arrangement was respected until the end of 1918, but from then on there has been a progressive rise in pitch in the different orchestras, the responsibility lying unquestionably with the string artists, always anxious to give more "éclat" to their playing by the continuous stretching of the strings of their instruments. It is not for us to discuss here this constant tendency towards a higher pitch and its accompanying drawbacks - not to say perils when it is a question of accompanying singers - but we can only note the fact that musical pitch varies according to different countries and that the factory making the instruments must take into account the requirements of its various clients. As of today the average pitch may be given as from 440 to 442 vibrations.

The firm therefore receives orders for instruments of which the pitch varies considerably, the extremes being usually 435 and 445, pass-

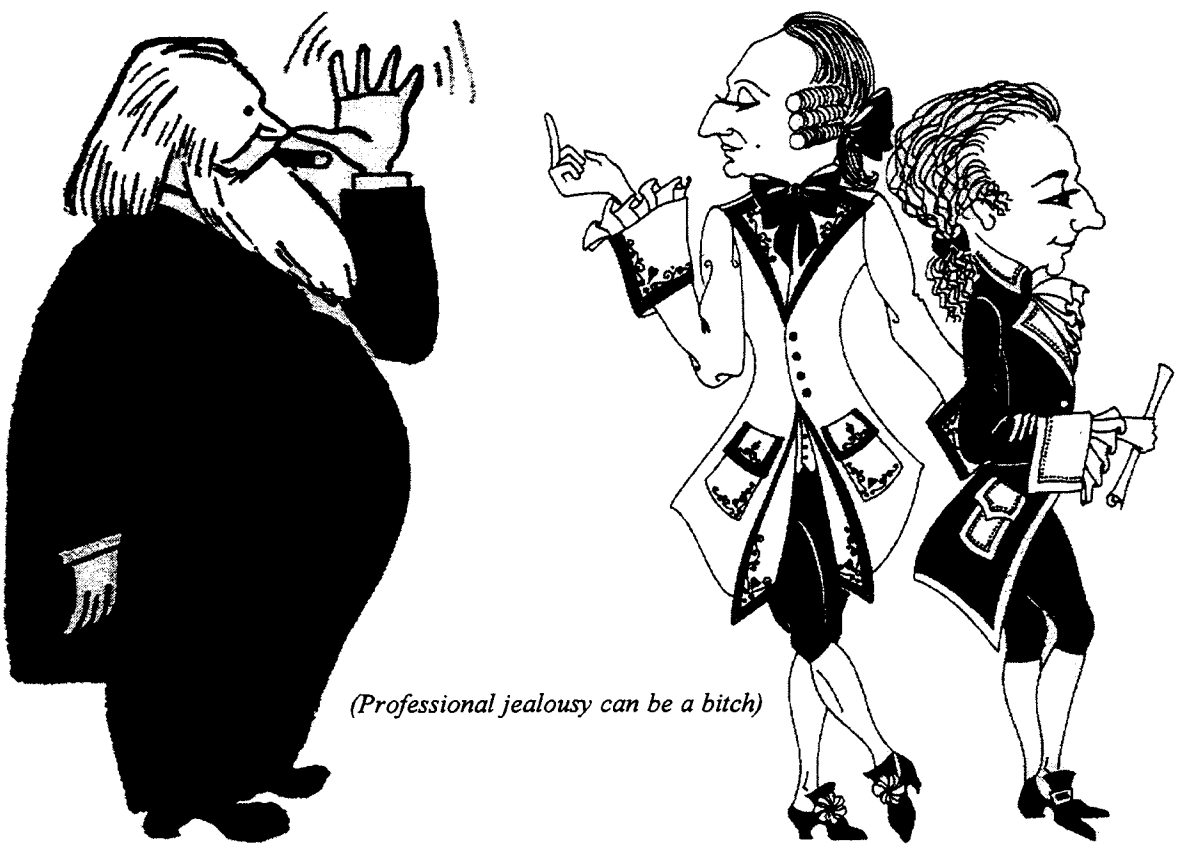


ing of course through all the intermediary degrees; but certain countries do not hesitate to push up beyond 445, even to 450 or 452, although this is relatively rare. Formerly the tuning of the instruments, according to all these differing degrees of pitch, necessitated the use in the factory of a large number of standard harmoniums.

The study of the four preceding subdivisions will have enabled the reader to measure up the vast progress realized in perfecting step by step, and by dint of patience and perseverance, the primitive instruments of former times, thus enabling them to acquire that degree of perfection which is theirs today. In this respect the firm of Buffet-Crampon, since its foundation and right up to the present day, has always been in the lead, in the vanguard of progress, not only in their researches and findings regarding the purity and beauty of tone, the perfect pitch of their instruments but also in everything connected with their mechanism. The name of Buffet-Crampon has thus become over the years the symbol of all that is best in the making of wind and key instruments, not only in France but throughout the world. It can thus be stated, and without any risk of exaggeration, that instruments bearing the Buffet-Crampon trademark - in particular their flutes, oboes, clarinets, bassoons and saxophones - are sure of a warm welcome in all corners of the globe.

Each month Buffet-Crampon exports large quantities of different instruments not only to the various European countries, but also to the United States, Canada, South America, Japan, Australia, South Africa and Israel. Their name is also well known in the Soviet Union and as far as China. This all goes to show that instruments signed by Buffet-Crampon have truly acquired worldwide reputation. They are played by the most eminent artists of all countries, in the principal symphony orchestras and lyric theatres, conservatoires and schools of music: also on the other hand in the best-known jazz formations, military bands and popular instrumental groups.

NOBLESSE oblige! The present management of this well-known company, and those who share the responsibility with them, either from the artistic or technical point of view, are all proud of its magnificent past achievements in producing the highest class French instruments. They remain fully conscious of their debt to their predecessors and are giving of their very best in the endeavour not only to maintain but, if in any way possible, to extend ever further their firm's outstanding and so highly merited reputation.



(Professional jealousy can be a bitch)