THE SAXOPHONE: ITS DEVELOPMENT
AND USE IN THE ORCHESTRA

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THE SAXOPHONE: ITS DEVELOPMENT
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THESIS

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The purpose of this study is to trace the invention and development of a greatly abused instrument, the saxophone, and its use in the symphony orchestra. The first chapter concerns the instrument's invention and acceptance. The second chapter discusses physical characteristics of the saxophone. The third chapter deals with the particular methods of using the saxophone in orchestral literature by various composers, from its use in the nineteenth century through the present. An appendix provides a comprehensive listing of orchestral literature in which the saxophone is utilized.
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CHAPTER I

THE HISTORY OF THE SAXOPHONE

Adolphe Sax--Inventor

Antoine Joseph (Adolphe) Sax was born in Dinant, a small town in Ardennes, Belgium, on November 6, 1814. His father, Charles Joseph Sax (1791-1865), was first a cabinet maker and afterward a mechanic in a spinning-machine factory. He then set up business in Brussels as a maker of wind instruments. He had served no apprenticeship to the trade; his only qualification was that he could play the serpent and was therefore obliged to investigate for himself the laws concerning the bore of instruments. Charles Sax had great manual dexterity and a turn for invention and was soon able to produce serpents and flutes of fair quality. He later won a medal at the Industrial Exhibition and gained much attention for his work with clarinets and bassoons.¹

Adolphe, the eldest of eleven children, grew up in the environment of his father's workshop. As a child he was remarkable for his manual skill and would make toys out of the odd bits of metal in his father's workshop.² He entered the


Brussels Conservatoire and studied the flute and clarinet, the former with Lahou and the latter with Bender, who considered him one of his best pupils.\(^3\)

Sax became intensely interested in improving the clarinet. He worked primarily with the bass clarinet and, like his father, wanted to simplify the fingering and improve the intonation. The experiments which led to the invention of the saxophone were undertaken by Adolphe Sax in the years 1840 and 1841, while he was still associated with his father's musical instrument business in Brussels.\(^4\) During that time Sax also improved the bass clarinet and designed a double-bass clarinet in B-flat.\(^5\)

When Sax exhibited his new saxophone in Brussels, it met with very little enthusiasm, winning him only a small silver medal. Disappointed, he went to Paris in 1842 with the hope of gaining fame and wealth. Soon after arriving, he established himself in a small workshop on the Rue Saint-Georges.\(^6\)

Sax was met with enthusiasm and won the friendship and financial backing of such influential people as Berlioz, Halevy, and Kastner by playing a concert on instruments he

\(^{3}\) Adolphe Sax (author not given) (Dinant, 1962), p. 2.


\(^{5}\) Nicholas Bessaraboff, *Ancient European Musical Instruments* (Boston, 1941), p. 106.

had either modified or invented. With this money, he had planned to enlarge his shop at Rue Saint-Georges and start a factory. From this day forward Sax was destined to have his success overwhelmed with problems.\(^7\)

At that time the separate parts of musical instruments were made by many different manufacturers. Sax wanted no part of this method. He insisted on having all the parts of his instruments tooled to his exact specifications under his supervision in his own factory. Sax was a perfectionist and thus wanted his instruments to be perfect.\(^8\)

The other instrument manufacturers were jealous and foresaw a threat to their own businesses. They attracted his workers by offering higher pay, and spread rumors of Sax's financial difficulty. The manufacturers even persuaded the musicians not to play Sax's instruments.\(^9\)

His competitors next proceeded to organize a campaign against him. They bribed his employees to steal his production secrets and then involved him in a network of court trials claiming Sax himself had stolen the idea for the saxophone. Police, lawyers, and money lenders paraded in and out of his workshop while Sax, having to bear the costs of the lawsuits, became hopelessly in debt.\(^10\)

\(^7\)Adolphe Sax, op. cit., p. 3.
\(^8\)Holloway, op. cit., p. 66.
\(^9\)Elbogen, op. cit., p. 8.
\(^10\)Ibid., p. 8.
Despite his troubles, he exhibited his brass and woodwind instruments in the French Exhibition of 1844 and received a silver medal. In 1845, he took out a patent for the saxhorn, a new kind of bugle, and for a family of cylinder instruments called saxo-tromba, intermediate between the saxhorn and the cylinder trumpet. On June 22, 1846, he registered the saxophone family.\(^1\)

At the suggestion of General Rumigny, a music-loving friend, Sax opened up the Sax Instrument Manufacturing Company, which was to be handled by the Parisian Stock Exchange. The competitors were enraged and within a few weeks, they had bought up almost all the inexpensive stocks and sold them at the Exchange at 50 per cent below their value. Thus, the Sax Company was ruined before it started. Not to be outdone, General Rumigny introduced Sax to the Ministry of War. After much red tape, it was decided a concert would be held with two bands, one playing the old instruments and the other playing Sax's new instruments.\(^2\)

On April 22, 1845, hundreds of spectators crowded around the two bandstands on the Champ de Mars. The first band, directed by the well known conductor, Michele Enrico Carafa (1787-1872), consisted of forty-five professional musicians playing the instruments that had traditionally been used in

\(^1\)Lee Patrick, "The Saxophone," Instrumentalist, XXII (November, 1967), 70.

\(^2\)Elbogen, op. cit., p. 9.
the military band. They were duly applauded. Next, the thirty-eight musicians directed by Sax began to play. Sax's list of instrumentation was used and his instruments, being more robust than those of the other band, sounded much better outside. It was a decisive victory for Sax. Months later, on July 31, 1845, he received an order for hundreds of his instruments for the military bands.\(^{13}\)

Now Sax's only problem was how to manufacture so many instruments. He had no money and no workers. Again, General Rumigny had an unusual idea. He wrote a letter of introduction to the director of the large prison in Melum near Paris. "These laborers cost nothing," the General laughed, "and thieves have dexterous hands." Thus Sax's manufacturing company was finally started with thieves, embezzlers, crooks, and murderers as his devoted workmen.\(^{14}\)

While the reorganization of the military bands was in progress, the 1848 revolution broke out and the new government set aside the decree of 1845. Another plan for the organization was then issued, completely ignoring Sax. This generated considerable comment. Berlioz wrote strongly on the matter in the *Journal des Débats* and the government was petitioned by many prominent musical and military men. In 1852, Albert Perrin issued his pamphlet on *The Organization*  

\(^{13}\)Adolphe Sax, *op. cit.*, p. 5.  
of Military Bands, which created considerable stir. Sax was recalled and the government issued the following in 1854 as the instrumentation for the bands of the Imperial Guards, and soon to the entire army:

**Infantry**

2 Flutes or Piccolos.
4 Clarinets, E flat.
8 Clarinets, B flat.
2 Oboes.
2 Soprano Saxophones.
2 Alto Saxophones.
2 Tenor Saxophones.
2 Baritone Saxophones.
2 Cornets.
4 Trumpets.
3 Tenor Trombones.
1 Bass Trombone.
2 Soprano Saxhorns, E flat.
2 Soprano Saxhorns, B flat.
2 Alto Saxotrombas.
2 Baritone Saxhorns, B flat.
4 Bass Saxhorns, E flat.
2 Double Basses, E flat.
2 Double Basses, B flat.
5 Drums, etc.
Total 55.

**Cavalry**

1 High Soprano Saxhorn, B flat.
2 Soprano Saxhorns, E flat.
4 Soprano Saxhorns, B flat.
2 Alto Saxhorns, A flat.
2 Alto Saxotrombas, B flat.
2 Baritone Saxotrombas, B flat.
4 Bass Saxhorns, B flat.
2 Double Bass Saxhorns, E flat.
2 Double Bass Saxhorns, B flat.
2 Cornets.
6 Trumpets.
2 Alto Trombones.
2 Tenor Trombones.
2 Bass Trombones.
Total 35.15

A short time later Sax obtained the last patents for the saxophone after a ten-year court battle. Sax was well known throughout Europe and enjoyed some amount of financial success. But in the following decades, through speculations and constant new experiments, coupled with his lack of a

---

"business mind," he once again became penniless. In 1857, the Paris Conservatory nominated him to the position of honorary professor of saxophone, which he held for thirteen years. However, during this relatively successful period, he was forced to sell his priceless collection of 467 musical instruments.16

During his last years, he lived on a modest pension provided by the French government. With all his friends and protectors dead, the lonely Adolphe Sax died on February 4, 1894.17

The Invention of the Saxophone

The original purpose of Sax in his invention of the saxophone remains somewhat obscure. It has been suggested that the birth of the saxophone was probably the result of accidental experimentation. The following is an interesting account of the beginnings of the saxophone:

The invention of the saxophone . . . has been described as an accident. Sax was conducting some experiments with the ophicleide, an old type of cup-mouthpiece instrument then in use, but now obsolete. Sax was curious to find out what would happen if he played the instrument with a clarinet mouthpiece.

The strange blending of the brass and reed tone did not sound quite like the ophicleide. It was reedy from the clarinet mouthpiece and reed, but it did not sound like the clarinet. It did not behave like the clarinet either for while the

17Ibid., p. 34.
clarinet has only the odd partials in the scale, the new cross between the brass instrument and the clarinet had both the even and the odd partials. Sax realized that he had produced a new tonal coloring among musical instruments, and after further experiments, during which he gave the saxophone body the inside dimensions different from those of the ophicleide, he produced the instrument known today as the saxophone.18

More probable, however, is the suggestion that Sax set out deliberately to design an instrument that would furnish military bands with a good tonal link between the clarinets and the tenor brasses. The early nineteenth century band lists indicate that the army bands of the time were far from satisfactory in that part of the range and Sax's known preoccupation with the military band reinforces the idea.19 It is held by some authorities that Sax's ultimate intention went even further, that with the higher-pitched members which were the last to be added to his group, he hoped to supersede the military clarinets altogether.20

Actually, Sax was not the first person to combine a single reed with a conical tube. William Melk, a Scotsman of whom little is known, invented the alto fagotta (mistakenly called tenoroon) in 1830.21 Two well preserved specimens of the alto fagotta are to be seen in the Victoria

---

21 Bessaraboff, op. cit., p. 105.
and Albert Museum, South Kensington, London, and another in the museum of the Conservatoire at Brussels complete with the original mouthpiece and ligature, which are missing in the former specimens.\textsuperscript{22} The instrument is about twenty-one inches in length, has a sharply defined conical bore, and a short crook on which a contemporary clarinet mouthpiece is mounted. It is made of sycamore or maple and is mounted with seven or eight keys of bassoon design. It is also provided with an ingenious tuning slide.

\begin{figure}[h]
\centering
\includegraphics[width=0.2\textwidth]{fig1.png}
\caption{Alto Fagotta\textsuperscript{23}}
\end{figure}

In externals, then, it differs from the saxophone, but the principle is the same in both instruments, i.e., a single beating reed allied to a conical bore. Meikle's instrument, however, differs in that the slenderer reed and

\textsuperscript{22}Grove, \textit{op. cit.}, p. 432.

\textsuperscript{23}Bessaraboff, \textit{op. cit.}, p. 105.
mouthpiece, together with the wooden body and smaller tone-
holes, give the alto fagotta a mellower and more refined quality of tone. Like the clarinet, it was made in three pitches--C, E-flat, and A--and had a compass from C to C'''\textsuperscript{2}.

Some historians do not credit Adolphe Sax with the invention of the saxophone at all:

Adolphe Sax . . . was not the actual inventor of the saxophone. The addition of a mouthpiece and a vibrating reed to a conical tube was made for the first time in 1807 by Desfontenelles \[a\] clockmaker from Lisieux]. . . . The first model, made of wood, was very imperfect. Sax perfected it. His chief improvement was to add a key enabling the music to sound an octave higher, whereas Desfontenelles' instrument could raise it only a fifth [twelfth]. Sax further simplified the fingering, softened the tone quality, quietened the mechanism, and added a copper or brass bell. In 1846 the instrument in this form became usable.\textsuperscript{25}

The author of the above lines is apparently confusing the saxophone with the bass clarinet. Many of Sax's enemies tried to discredit his work in any way they could. In Desfontenelles' instrument they saw the prototype of the saxophone. Certainly this rather crude wooden instrument with its clarinet mouthpiece, upturned bell, and the conical bore provides a striking resemblance; but the well known authority, Jaap Kool, who has tested the instrument, states .

\textsuperscript{24}F. G. Rendall, "The Saxophone Before Sax," The Musical Times, LXXIII (December, 1932), 1078.

\textsuperscript{25}Musique pour Saxophone (author not given) (Paris, 1951), p. 3.
quite definitely that it speaks not in octaves but in twelfths, thus making it an early bass clarinet.\textsuperscript{26}

The pitch and size of the original saxophone is somewhat debatable. Three weeks after Sax arrived in Paris with his new instrument, Berlioz wrote the following article in the June 12, 1842 issue of the Paris \textit{Journal des Débats}: 

\begin{quote}
The saxophone (Le Saxophon), named after its inventor, is a brass instrument with nineteen keys. . . . Its mouthpiece . . . is similar to the mouthpiece of the bass clarinet. . . . It has a compass of three octaves beginning from the lower B-flat [probably B-natural] under the staff (bass clef); its fingering is akin to that of the flute or the second part of the clarinet. Its sound is of such rare quality that, to my knowledge, there is not a bass instrument in use nowadays that could be compared to the saxophone. It is full, soft, vibrating, extremely powerful, and easy to lower in intensity. As far as I am concerned, I find it very superior to the lower tones of the ophicleide, in accuracy as well as solidity of the sound. But the character of such sound is absolutely new, and does not resemble any of the timbres heard up till now in our orchestras, with the sole exception of the bass clarinet's low E and F. Owing to its reed, it can increase or diminish the intensity of its sounds.

The notes of the higher compass vibrate so intensively that they may be applied with great success to melodic expression. Naturally, this instrument will never be suited to rapid passages, for complicated arpeggios; but the bass instruments are not destined to execute light evolutions. Instead of complaining, we must rejoice that it is impossible to misuse the Saxophone and thus to destroy its majestic nature by forcing it to render mere musical futilities.

The composers will be very indebted to Mr. Sax when his new instruments are generally employed. If he perseveres, he will meet with the
\end{quote}

\textsuperscript{26}Jaap Kool, \textit{Das Saxophon} (Leipzig, 1931), p. 185.
support of all friends of music.\textsuperscript{27}

It appears the instrument Berlioz described was the bass saxophone in C, however, in a recent conversation, saxophonist Sigurd Rascher claimed "it must have been a smaller saxophone \[smaller than the bass saxophone\] because Sax carried the instrument under his arm to Paris." Rascher maintained it cannot be stated with any authority just which variety of saxophone was originally designed by Sax.

The group of saxophones described by Georges Kastner in 1844\textsuperscript{28} comprised only four instruments:

\begin{center}
\begin{tabular}{l}
Soprano in C or B-flat  
Alto or Tenor in F or E-flat  
Bass in C or B-flat  
Contrabass in F or E-flat 
\end{tabular}
\end{center}

The question here becomes one of nomenclature. Either the instruments Kastner called bass and contrabass were actually what we would call tenor and baritone, respectively, or the lower two instruments were pitched two octaves below the upper two instruments. The latter seems highly unlikely.

The original patent specification of 1846 shows that Sax had planned to make the saxophones in two groups of four each, pitched an octave apart. The main or lower group was to be as follows:

\begin{center}
\begin{tabular}{l}
\begin{tabular}{l}
Translated by Leon Kochnitsky. \\
\textsuperscript{27}Translated by Leon Kochnitsky. \\
\end{tabular}
\end{tabular}
\end{center}
No. 1 Tenor in E-flat
No. 2 Saxophone in C or in B-flat
    (the original instrument)
No. 3 Contrabass in G or in A-flat
No. 4 Bourdon in C or in B-flat

The higher group, numbered 5, 6, 7, and 8 were to be pitched each an octave higher than those in the lower group, the highest being No. 8, the small straight instrument in E-flat. This projected scheme was apparently never carried out and, at that time, only No. 1 and No. 2 were actually in existence.\(^{30}\)

If, however, the highest pitched instrument (No. 8) was what we know as the sopranino in E-flat, this would make No. 2 (the original instrument) actually what we call the bass saxophone. The others would be:

No. 1 actually Baritone in E-flat
No. 2 actually Bass in B-flat
No. 3 actually Contrabass in E-flat
No. 4 this instrument was never made
No. 5 actually Tenor in B-flat
No. 6 actually Alto in E-flat
No. 7 actually Soprano in B-flat
No. 8 actually Sopranino in E-flat

In 1847\(^{31}\), Kastner gave the following extended group in his *Manual Général de Musique Militaire à l'usage des Armées Françaises*:

---

\(^{29}\)Brevet de Adolphe Sax, No. 3226, du Mars, 1846, pour Systems d'instruments à vent dits saxophone.


High Soprano in F or E-flat
Soprano in C or B-flat
Alto in E-flat
Alto-tenor in B-flat
Tenor-baritone in E-flat
Bass in C or B-flat
Contrabass in F or E-flat

There is some doubt as to whether or not the contrabass in F or E-flat was actually in existence in 1847.\textsuperscript{32} Nine years later in 1856, Berlioz lists only six varieties of saxophone:

High Soprano in E-flat
Soprano in C or B-flat
Alto in F or E-flat
Tenor in C or B-flat
Baritone in F or E-flat
Bass in C or B-flat\textsuperscript{33}

The thirteen varieties of saxophone in existence today include:

\begin{tabular}{ll}
E-flat Soprano & F Soprano \\
B-flat Soprano & C Soprano \\
E-flat Alto & F Mezzo-soprano \\
B-flat Tenor & C Tenor (C-melody) \\
E-flat Baritone & F Baritone \\
B-flat Bass & C Bass \\
E-flat Contrabass & \\
\end{tabular}

Until some further information is found, the reader will have to make his own decision as to which instrument is the original. The important point remains that Sax was the first person to conceive a whole family of instruments and to subsequently manufacture them within a relatively

\textsuperscript{32}Schwartz, \textit{op. cit.}, p. 145.

short period of time.

Acceptance of the Saxophone

Sax's reputation among musicians proceeded him to Paris. A few weeks before his departure, he received a letter from Halevy, who was anxiously anticipating Sax's arrival:

I take the opportunity of M. Vieuxtemps' stay in Paris and his imminent return to Brussels to ask you about the instruments that you had requested me to hear, and that you are now busy perfecting. I hope you will reach your aim. Your efforts should excite the interest of every composer. You enlarge the number and the power of orchestral effects. At the Paris Conservatory, we have already had the opportunity to try out your new and excellent combinations of tones. I hope you will speedily terminate the construction of your new instrumental group. It will be of great help to the poor composers seeking for innovations and to the public that demands them, even were there nothing new on earth.

Mille compliments,

Halevy

Although much was said about the saxophone by Berlioz and others, it did not make its playing debut for nearly two years. The saxophone was first heard in Paris (Salle Herz) on February 3, 1844, in a public concert under the direction of Berlioz, who had written a piece specially devised to show the merits of Sax's instruments. This composition, Chant sacré, was for six instruments:

High Trumpet in B-flat
Cornet
Clarinet

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34Kochhautsky, op. cit., p. 10.
35Grove, op. cit., p. 434.
Bass Clarinet
Flugelhorn
Saxophone

The saxophone part was played by Sax himself on an instrument that had not yet been finished; some of the keys were held in place with wire and sealing wax. Toward the end of the number the keys began to loosen and just as the number was over, the instrument fell to pieces, making the audience laugh as well as applaud.37

Georges Kastner was the first composer to utilize the saxophone in the orchestra, making use of an instrument which belonged to the "bass compass" in his biblical drama Le dernier Roi de Juda which was first performed at the Paris Conservatory on December 1, 1844.38

Soon after, such prominent composers as Meyerbeer, Bizet, Massenet, and Thomas wrote for the saxophone, mainly in solo passages, and it began to enjoy some popularity.

In 1845, the saxophone was introduced into the military bands of France and Belgium. Today these bands include at least a quartet of saxophones, with the larger bands using as many as eight.

36 Eugen Rosenkaimer, "Das Saxophon," Die Musik, XX (September, 1928), 896.


In Germany the saxophone was disregarded for many years. This was probably due to the ingrained prejudice against the Boehm fingering system.\(^{39}\) Realizing this problem, in 1890 the firm of W. Heckel brought out the Heckel-Clarina. This short lived instrument was for all intents and purposes a saxophone adapted to the "old" system of fingering for the right hand.\(^{40}\)

The status of the saxophone in Germany through the years has not improved. In 1903 Richard Strauss experienced the greatest difficulty recruiting players for the saxophone quartet in the Berlin performance of his Symphonia Domestica.\(^{41}\) Even today, according to Sigurd Rascher, there is not one concert saxophonist in Germany.\(^{42}\)

The first sign of the saxophone in England was in 1849 when Henry Distin, a member of the brass quintet called the Distin Family, advertised that he had Sax's instruments for sale at his depot in Cranbourne Street. The Illustrated London News of July 7, 1849, printed a woodcut of the saxophone (Figure 2) that was exhibited at the Paris National

\(^{39}\)Grove, *op. cit.*, p. 432.


Exposition and in 1850 the new instruments were heard at Jullien's concert and again in 1852 in concerts at the Musical Union, played by Soualle and Wullie, both of whom were Belgian clarinettists. The English military bands have not accepted the entire saxophone family; they do, however, use the alto saxophone in E-flat and the tenor saxophone in B-flat.

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Fig. 2--Saxophone Exhibited at the National Exposition in Paris in 1849

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43 Carse, The Orchestra, p. 409.
44 Grove, op. cit., p. 444.
45 Carse, The Orchestra, p. 408.
The first composer to use the saxophone as a solo instrument in the orchestra was the American William Henry Fry (1813-1864), who called for a soprano saxophone solo in his *Santa Claus Symphony*, which was performed in New York City by Jullien in 1853.\(^{46}\) Even so, in America there was little known of the saxophone from 1840 to 1880. Only a few were imported from Europe, and these were rendered useless from lack of music. About 1885 C. G. Conn began to make a few saxophones in America. His cause was greatly helped when E. A. Lefebre, great saxophone virtuoso of Europe and personal friend of Sax, came to America and toured the country as soloist with Patrick Gilmore's band. In 1895 Lefebre was employed by Conn Company to supervise the manufacture of the American saxophone.\(^{47}\)

In the early 1900's Tom Brown and his saxophone sextet appeared on the vaudeville stage. The appearance of this group had a profound effect on the status of the saxophone.\(^{48}\)

Tom Brown was a great showman; he made the little known saxophone the most talked about instrument in America. Within a short time there were scores of acts like his and during the next few years thousands of people began buying the C-melody saxophone. Because of its relatively simple fingering system, anyone could pick up the instrument and play it after a few


\(^{48}\)Ibid., p. 140.
hours of practice. Thus, a saxophone squawked on every block
and the instrument acquired a reputation that has taken forty
years to lose.\textsuperscript{49}

Many authorities still refuse to recognize the saxophone
as a serious instrument. Walter Piston states in regard to
the saxophone:

Modern developments in saxophone playing have
completely changed the nature and sound of the in-
strument from what it was when melodies were assigned
to it by Bizet and other European composers before
1920. From a pure, steady tone, partaking of both
horn and reed qualities, its tone has become, coin-
cident with its ascendancy in the field of popular
music, tremulous, oversweet, sentimental; and is
almost invariably played out of tune. The saxophone
as played today cannot be successfully used in instru-
mental combinations, and it is for perhaps this
reason that it did not, as seemed likely twenty-five
years ago, become a member of the symphony orchestra.\textsuperscript{50}

It should be noted that Piston refers to the way the instru-
ment is played, not the instrument itself. However, not
everyone shares his opinion. Marcel Mule, saxophone virtuoso,
states:

The saxophone can play a role of the first
level in the symphonic orchestra with the same
importance as all the wind instruments habitually
employed in the orchestration. In order that it
does not jar against its elders, it should ob-
viously be played with as much care as other
instruments. That is to say, to cling to the
quality of timbre, to the intonation, to the pre-
cision of the attacks in all the nuances—in a word,
to acquire a very serious general technique.\textsuperscript{51}

\textsuperscript{49}Schwartz, \emph{op. cit.}, p. 141.

\textsuperscript{50}Walter Piston, \emph{Orchestration} (New York, 1955), p. 186.

\textsuperscript{51}Marcel Mule, "The Saxophone," \emph{Symphony} (November, 1950)
p. 7.
During the last ten years, mainly in France and the United States, there have been many serious saxophonists. The instrument is slowly reaching a place of respect in conservatories and leading composers are beginning to realize its potential.\textsuperscript{52}

\textsuperscript{52}\textit{Ibid.}, p. 8.
CHAPTER II

CHARACTERISTICS OF THE SAXOPHONE

Physical Description

The body of the saxophone is a fairly wide conical tube of thin brass expanded at the larger end into a small flare that is of little more than ornamental use. Figure 3 illustrates the four sections of the saxophone body.

![Diagram of saxophone sections]

(a) Neck (detachable)
(b) Body
(c) Crook
(d) Bell

Fig. 3--Sections of a saxophone body

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At intervals along the tube are eighteen to twenty-one note-holes of graduated size, all large in relation to the bore, and above these are two extremely small octave or "speaker" holes which assist in sounding the upper register. Each hole is surrounded by a ring or collar which is drawn from the body of the saxophone and provides a level seating for the associated key-pad.3 Throughout the instrument all holes are controlled by keys, some open when at rest, others closed, according to a fingering system similar to the old one-keyed flute.4 See figure 4.

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\begin{array}{cccccc}
\cdot & \cdot & \cdot & \cdot & \cdot & 0 \\
\cdot & \cdot & \cdot & \cdot & \cdot & 0 & 0 \\
\cdot & \cdot & \cdot & \cdot & \cdot & 0 & 0 & 0 \\
\cdot & \cdot & 0 & 0 & 0 & 0 & 0 & 0 \\
\cdot & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
```

d' e' f' g' a' b' c'-sharp

**Fig. 4**—Fingerings for fundamental scale of saxophones

Extra keys are used to produce the upper four (or five with added f-sharp key) semitones and the lower four (or five with added a-natural key) semitones.5 The two octave keys are interconnected and are operated by a left hand thumb-lever. The lower octave key is used to overblow the

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tones from d'' to g''-sharp while the upper octave key, located on the neck, is used for the tones a'' upward.6

The mouthpiece (Figure 5), originally made of wood, is now available in ebonite, plastic, crystal, or metal in a large variety of styles. This has been the subject of much controversy in recent years. Many authorities, notably Sigurd Rascher, maintain that the saxophone mouthpiece has changed radically since the original and that the change has greatly affected the concept of saxophone tone.7

Fig. 5--The saxophone mouthpiece8

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6 Bessaraboff, op. cit., p. 106.
Adolphe Sax was very specific about the dimensions of his mouthpiece. In the patent letter he drew a picture (Figure 6) and described a short stubby mouthpiece. In his treatise on orchestration, Georges Kastner writes of a demonstration of the saxophone, given by the inventor, in which the latter stressed the fact that the interior of the mouthpiece was of an excavated character.

![Fig. 6--Original pattern for soprano saxophone mouthpiece](image)

Many saxophonists today, especially jazz players, use a mouthpiece which has a very small, narrow chamber. This produces a harsh, strident tone due to the "... magnification of and increased emphasis on the upper partials." The principal fault that could be found with even the best examples of the older mouthpieces was in the difficulties

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encountered in trying to produce a tone that would combine texture and flexibility with a satisfactory volume and an adequate dynamic range.\textsuperscript{13} For this reason saxophonists experimented with changing the facing and tone-chamber of the saxophone mouthpiece. Today it is possible to obtain a mouthpiece which is flexible and will produce the necessary dynamic range without obtaining a harsh or strident tone.\textsuperscript{14}

Range

The accepted standard range (written) of most saxophones in use today is from b-flat below the treble clef to fourth space f above the treble clef. Figure 7 shows the range of saxophones in concert pitch.

![Diagram of saxophone range](image)

Fig. 7--Range of saxophones in concert pitch\textsuperscript{15}

As previously mentioned, Berlioz stated in his article, "It has a compass of three octaves . . ."\textsuperscript{16} The original

\textsuperscript{13}Leeson, \textit{op. cit.}, p. 86.  \textsuperscript{14}Ibid., p. 87.
\textsuperscript{15}Teal, \textit{op. cit.}, p. 14.
\textsuperscript{16}Hector Berlioz, \textit{Journal des Débats} (Paris, 1842).
saxophone had a range of b-natural to f'\'\'\'\'. In 1887 one lower semitone was added, making the range b-flat to f'\'\'\'. Sax apparently used overtones to produce the range of which Berlioz spoke. Kochnitsky inaccurately reports, "In later years, Sax decided to reduce by seven semitones the compass of his saxophones because of the unsatisfactory sonority of the higher notes." Although he could produce the higher tones, Sax himself never admitted them as part of the range.

Today there are a few exceptional players who are able to extend the range of the saxophone as much as an octave and a half, increasing the total range to four octaves. The notes used are octave harmonics produced by forked and alternate fingerings combined with especially sensitive lip and breath control.

Acoustics of the Saxophone

The saxophone acts as an "open pipe" and its fundamental tone is the same as that of an "open pipe" the same length. If the capability of the air column to vibrate at the

17Bessaraboff, op. cit., p. 106.
18Grove, op. cit., p. 430.
19Kochnitsky, op. cit., p. 15.
20Grove, op. cit., p. 430.
21Sigurd Rascher, Top-tones for the Saxophone (Boston, 1962), p. 3.
fundamental frequency is destroyed, the second partial becomes the most prominent. This results in a pitch an octave higher.\(^{24}\) Because of the saxophone's conical bore, it yields both even and odd harmonics.\(^{25}\) As figure 8 illustrates, these overtones occur in varied intensities.

Culver notes that while a small percentage of the ninth and twelfth harmonics is present, several of the adjacent partials are either absent or represented only by a trace.\(^{27}\)

\(^{24}\)Teal, op. cit., p. 45.


\(^{26}\)Ibid., p. 143.

\(^{27}\)Ibid., p. 142.
The prominence of overtones varies for different pitches. Donald McCathren's study of the most prominent, prominent, and less prominent overtones of the E-flat alto saxophone sounding various notes revealed:

The overtones themselves did not fall into patterns as they did in the other instruments [flute, oboe, clarinet]. The most prominent overtones of one fundamental would be a major second [ninth partial], that of another an octave [second or fourth partial], and another a fifth [third or sixth partial]. Major seconds seemed to fill the important overtone positions more so than did the octave and the fifth. 28

<table>
<thead>
<tr>
<th>Eb Alto Sax Pitch</th>
<th>Concert Pitch</th>
<th>Most Prominent Overtone</th>
<th>Prominent</th>
<th>Less Prominent</th>
</tr>
</thead>
<tbody>
<tr>
<td>d^1</td>
<td>f</td>
<td>f^2</td>
<td>c^2 c^4 g^2 g^4</td>
<td>f^2 f^4 a^2 a^4</td>
</tr>
<tr>
<td>g^1</td>
<td>a^#</td>
<td>c^4</td>
<td>f^2 f^4 d^3 d^4</td>
<td>a^# a^# a^# a^#</td>
</tr>
<tr>
<td>e^1</td>
<td>d^#</td>
<td>g^4</td>
<td>d^# d^#</td>
<td>a^# a^# g^3 g^4</td>
</tr>
<tr>
<td>c^#^2</td>
<td>e^1</td>
<td>b^4</td>
<td>g^# g^# e^4</td>
<td>e^3 f^#</td>
</tr>
<tr>
<td>d^2</td>
<td>f</td>
<td>f^4</td>
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<td>a^3 a^4</td>
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<tr>
<td>g^2</td>
<td>a^#</td>
<td>f^4</td>
<td>a^# a^# a^#</td>
<td></td>
</tr>
<tr>
<td>d^3</td>
<td>f</td>
<td>f^4</td>
<td>a^4 c^6</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 9--Overtone chart of E-flat alto saxophone sounding various pitches 29

Researchers in the science of acoustics are in agreement that the relative prominence of partials of the fundamental tone is a major factor in determining the characteristic sound of each instrument. 30 The saxophone's comparative lack of

28 Donald McCathren, "An Experiment in Overtones of Woodwinds," Woodwind, III (December, 1950), 5.

29 Ibid., p. 5.

30 Teal, op. cit.; p. 45.
prominent overtones could account for its distinctive tone
quality and its ability to blend with almost any instrument.\textsuperscript{31}
Further research in this area could provide valuable inform-

\textsuperscript{31}McCathren, \textit{op. cit.}, p. 6.
CHAPTER III

THE USE OF THE SAXOPHONE IN
ORCHESTRAL LITERATURE

The Saxophone as a New Soloistic Color

Since its debut in 1844, the most frequent use of the saxophone in the orchestra has been as a solo instrument. The peculiar tone quality of the saxophone has been described in many ways. In his treatise on orchestration, Berlioz states:

These newly gained orchestral voices have rare and valuable qualities. In the high range they are soft yet penetrating; in the low range they are full and rich; and in the middle range they are very expressive. On the whole it is a timbre quite its own, vaguely similar to that of the violoncello, the clarinet, and the English horn with a half-metallic admixture which gives it an altogether peculiar expression.

Agile, suited just as well for rapid passages as for soft melodies and for religious and dreamy effects, saxophones can be used in any kind of music; but they are particularly suited to the slow tender compositions.

The high tones of the low saxophones have a plaintive and sorrowful character; their low tones, however, have a sublime and, as it were, priestly calm.

Ingenious composers are going to achieve wonderful, still unpredictable effects by joining the saxophones and the clarinet family or by means of other combinations.¹

Georges Bizet, in his famous L'Arlésienne Suite No. 1, (1872), scored a very melancholy alto saxophone solo in the

¹Berlioz, Orchestration, p. 135.
Andante section of the Prelude.\(^2\) This is a typical example of cantilena style often found in compositions of the nineteenth century.

![Musical notation]

Fig. 10--Alto saxophone solo from Bizet's *L'Arlésienne Suite No. 1, Prelude*\(^3\)

Philip Hale, noted music journalist, had this to say about Bizet's use of the saxophone:

... If Halévy called for saxophones to add to the anguish and despair of humanity on the Last Great Day, so Bizet used it to express gentle melancholy, inexpressible sadness, resignation, hopelessness, grief, that which is ghostly, the remembrance of happy days in present stress of sorrow, "the depth of some divine despair," the odor of leaves in the autumn, the room in order awaiting the guest that has gone forever. What instrument is more suggestive to the hearer of sentiment or imagination?\(^4\)

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Another famous soloistic use of the saxophone is found in Modeste Mussorgsky's *Tableaux d'une Exposition* (1922), which has been orchestrated by Maurice Ravel. In the second movement, *Il Vecchio Castello* (The Old Castle), the alto saxophone effectively portrays a singing troubador before the castle walls.5

![Fig. 11--Alto saxophone solo from Mussorgsky-Ravel's *Tableaux d'une Exposition, Il Vecchio Castello*](image)

Soon after Kastner's use of the saxophone in his opera, *Le dernier Roi de Juda*, such prominent composers as Massenet, Delibes, Halevy, d'Indy, Charpentier, Thomas, and Meyerbeer began to include the saxophone in their operatic scores. Upon hearing the saxophone for the first time, Auber said, "What a lovely tone, and what advantage could be derived from this

5 *Panhorst, op. cit.,* p. 44.

instrument combined with the human voice.7 The following example from Ambroise Thomas' *Hamlet* (1868) illustrates typical nineteenth century usage of the saxophone in opera.

The Hungarian composer, Zoltan Kodaly, scored a mournful alto saxophone solo in the fourth movement of his * Háry János Suite* (1927). This movement, entitled *Battle and Defeat of Napoleon*, opens with the trombones and percussion forcefully stating the battle motive (Figure 13). In the coda, marked *Tempo di Marcia Funebre*, the alto saxophone accompanied by three trombones, bass tuba, piccolo drum, and bass drum, plays a grotesque variant of the battle theme. See figure 14.

Fig. 13--Battle motive, *Háry János Suite*  
*Battle and Defeat of Napoleon*9

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7Kochnitsky, *op. cit.*, p. 18.
Eb Alto saxophone
Trombones I & II
Trombone III
Bass Tuba
Piccolo drum
Bass drum

Fig. 14—Excerpt from Kodaly's Hary Janos Suite, Battle and Defeat of Napoleon

10 Ibid., pp. 53-54.
There are many other instances of effective soloistic usage of the saxophone; however, in compositions of this nature the saxophone cannot be considered a true member of the orchestra. Its introduction into the score is somewhat of a novelty and its prime function is that of a new tone color only. If the saxophone were to be replaced by another instrument, the compositions would certainly lose some of their effectiveness; however, the saxophone still cannot be considered a vital orchestral member.

The Saxophone as a Member of the Orchestral Woodwind Family

There are many compositions which do treat the saxophone as an equal member of the orchestra. In some cases, it is employed as a solo instrument as well as in the supporting role; in other instances, it becomes entirely a supporting instrument. In either case, it is a valuable asset throughout the entire composition.

An outstanding example of this use is Benjamin Britten's Sinfonia da Requiem (1941). Throughout the entire composition the saxophone is effectively used not only as a solo instrument, but as a member of the woodwind section. In the first movement, Lacrymosa, the saxophone is assigned an unusual melody (Figure 15) composed of skips of major and minor sevenths.
Later in the same movement the alto saxophone outlines increasing skips against the rising chromatics of the other woodwinds (Figure 16). This builds toward the climax of the movement where the alto saxophone plays in unison and octaves with the strings at a triple forte dynamic level.

This two bar motive (measures 196-197) is repeated several times, each time reducing in both dynamics and range until

11 Benjamin Britten, Sinfonia da Requiem (London, 1942), pp. 4-5.
12 Ibid., p. 21.
the movement fades away with the saxophone playing in unison with the violas and the cellos at a pianissimo dynamic level.

Fig. 17--Excerpt from closing bars of Britten's Sinfonia da Requiem, Lacrymosa

In the second movement, Dies Irae, Britten calls upon the saxophone to play technical passages with the other woodwind instruments.

Fig. 18--Technical passage from Britten's Sinfonia da Requiem, Dies Irae

\[\text{\textsuperscript{13}Ibid., p. 23.}\] \[\text{\textsuperscript{14}Ibid., p. 31.}\]
Figure 19 illustrates a difficult tonguing passage in the same movement.

Later, in a section of the same movement marked *Alla Marcia*, the saxophone is given a grotesque solo utilizing chromatics followed by a large skip. This short melody is repeated twice; first, by the saxophone in canon with the

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flutes, oboes, and clarinets. The second time, the saxophone, in octaves with the other woodwinds, builds toward a towering climax (Figure 21) in which the saxophone part is extended to include the notes f'''-sharp and g'''.

Following the climax the tempo quickens and the music becomes more and more grotesque. In the closing bars the saxophone and the other woodwinds take up a percussive motive, followed by a portamento (Figure 22). Britten's use of flutter-tonguing adds to the percussive effect of this motive. As the percussive motive and the portamento alternate, the tempo and dynamics decrease. This continues until the last bars of the movement fade into the first section of the next movement, marked Andante molto tranquilo.

Fig. 21—Excerpt from Britten's Sinfonia da Requiem, Dies Irae

17Ibid., p. 43.
In the third movement, Requiem Aeternam, the saxophone is given a simplified version of the melody being played by the string section. This technique of orchestration adds color to the total string sound and stability to the upper violin part.

Fig. 22--Percussive motive from Britten's Sinfonia da Requiem, Dies Irae

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Fig. 23--Excerpt from Britten's Sinfonia da Requiem, Requiem Aeternam

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\[\text{Ibid.}, \text{ p. 51.}\] \[\text{Ibid.}, \text{ p. 61.}\]
The tenor saxophone part in Ralph Vaughan Williams' Symphony No. 6 in E Minor (1948) demands good technique and much flexibility on the part of the player. In the first movement, Vaughan Williams quite frequently uses the tenor saxophone in unison with the first bassoon an octave above the second bassoon and contra-bassoon. The saxophone adds strength as well as color to the bassoon sound.

![Excerpt from Vaughan Williams' Symphony No. 6 in E Minor, First movement](image)

Later in the same movement, the saxophone is given a rhythmical part which requires some flexibility to play.

![Rhythmical excerpt from Vaughan Williams' Symphony No. 6 in E Minor, First movement](image)

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Throughout the entire first movement, Vaughan Williams makes good use of the saxophone's technical ability. Figure 26 is a typical example of the sixteenth-note runs throughout the movement.

Fig. 26--Technical passage from Vaughan Williams' Symphony No. 6 in E Minor, First movement

In the third movement the saxophone is awarded a rhythmic solo which is particularly effective because of the lyrical quality of the upper register in which it is written.

Fig. 27--Tenor saxophone solo from Vaughan Williams' Symphony No. 6 in E Minor, Third movement

Following the tenor saxophone solo, the melody is repeated by the upper brass and the upper woodwinds. Beneath this melody, the tenor saxophone and the B-flat clarinets are given a running sixteenth-note accompaniment in unison with the string

\[22\text{Ibid., pp. 40-41.}\]

\[23\text{Ibid., pp. 100-101.}\]
section. The clarinet and saxophone parts are slurred while the string parts are articulated. The clarinet and saxophone add roundness to this combination.

Serge Prokofieff also effectively used the tenor saxophone in his music for the film Lieutenant Kijé (1933) and in his Romeo and Juliet Suites No. 1 and No. 2 (1936). Both of these works hold a familiar place in the standard orchestral repertoire. In Lieutenant Kijé suite, the tenor saxophone represents the character "Lieutenant Kijé." In the closing bars of the first movement, The Birth of Kijé, the saxophone plays the motive which represents "Kijé" in a duet with the flute.

\[ \text{Fig. 28--Excerpt from Vaughan Williams' Symphony No. 6 in E Minor, Third movement}^{24} \]

\[ ^{24} \text{Ibid., p. 102.} \]

\[ ^{25} \text{Panhorst, op. cit., p. 44.} \]
In the second movement, Romance, Prokofieff uses a tenor saxophone, two bassoons, and one horn in unison playing the melody. This combination, written in the lower register for the saxophone and horn, produces a very dark, stately sound.

Later this same melody is played by the tenor saxophone while the flute plays the new, rather humorous melody in counterpoint. See figure 31. These two melodies are accompanied by pizzicato strings. Following this, the saxophone plays the melody the flute had previously played and this leads to the recapitulation.

26Serge Prokofieff, Lieutenant Kijé (New York, 1933), p. 11.
27Ibid., p. 15.
Fig. 31—Flute and saxophone counter-melodies from Prokofieff's Lieutenant Kije, Romance.\textsuperscript{28}

Prokofieff scored the familiar melody in the fourth movement, Troika, for tenor saxophone, two bassoons, and cellos.

Fig. 32—Excerpt from Prokofieff's Lieutenant Kije, Troika.\textsuperscript{29}

\textsuperscript{28}Ibid., p. 17. \hspace{1cm} \textsuperscript{29}Ibid., pp. 37-39.
During the 1920's and the 1930's, the saxophone was used quite frequently in a very stylistic manner. At that time the saxophone had become the representative instrument of jazz, and composers were attempting to combine the aspects of jazz with "classical" music. Grofé scored for two alto saxophones and a tenor saxophone in Gershwin's *Rhapsody in Blue* (1923), while Gershwin himself included alto, tenor, and baritone saxophones in his *An American in Paris* (1928). Aaron Copland used a soprano saxophone in his *Concerto for Piano and Orchestra* (1927). Figure 33 shows the influence jazz and ragtime had on this composition.

Fig. 33--Excerpt from Copland's *Concerto for Piano and Orchestra*31

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30 Panhorst, *op. cit.*, p. 44.

After a visit to the United States, Darius Milhaud wrote his ballet, *La Création du Monde* (1923). The ballet concerns a group of Negros and their conception of the beginning of the world. The alto saxophone, which has a prominent part throughout the entire composition, was a likely choice to portray the Negros' feeling for jazz. The composition shows some influence of Gershwin's style.

![Excerpt from Milhaud's *La Création du Monde*](image)

**Fig. 34--Excerpt from Milhaud's *La Création du Monde***

The Saxophone Section

When Adolphe Sax conceived the idea of the saxophone, he had hopes of creating a new family of instruments. These instruments would be so similar in characteristics that it would be possible to achieve excellent blend, and that smooth transitions would be possible from the lowest notes to the highest notes, similar to the string section of an orchestra.

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Few symphonic composers have used the saxophone section to its fullest potential. Many of the late nineteenth century composers used various groupings of saxophones; however, many of these works are rather obscure. Gustav Charpentier employed both soprano and alto saxophones in the symphonic drama *The Life of the Poet* (1892) and in the orchestral suite *Impressions of Italy* (1913). Vincent d'Indy included soprano, alto and tenor saxophones in the lyric drama *Fervaal* (1897), while in *Legend of Saint Christopher* (1920) he employed a soprano, two altos, tenor, baritone, and bass saxophones.35

The German composer, Richard Strauss, scored for the less common saxophones--soprano in C, alto in F, baritone in F, and bass in C--in his *Sinfonia Domestica*, Op. 53 (1904). Although this composition is not considered to be one of his better works, it does successfully use saxophones.36 Strauss rarely used the saxophones as a separate choir; and, with the exception of a few instances, the four saxophones do not play at the same time. Strauss frequently used the soprano saxophone in unison with the upper winds, while writing the alto, baritone, and bass saxophones in unison with the violins, cellos, and double basses, respectively.

Figure 35 is a typical example of Strauss' treatment of the soprano and alto saxophones. The soprano is in unison

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35 Panhorst, *op. cit.*, p. 44.
with the oboe while the alto is in unison with the first violins.

Figure 36 shows one of the few instances when all four saxophones are simultaneously playing.


38Ibid., p. 177.
The soprano saxophone is in unison with the flutes and oboes while the alto saxophone is in unison with the English horn. The baritone and bass saxophones are in unison with the bass clarinet, bassoon, and cellos an octave above the double basses.

Perhaps the greatest example of saxophone section writing is Ralph Vaughan Williams' Symphony in E Minor, No. 2 (1957). This work utilizes two alto saxophones and a tenor saxophone, placing emphasis upon the saxophone section as a distinct and separate choir as well as combining them with other sections.

Early in the first movement, Vaughan Williams uses the saxophones to strengthen and add color to the string section. The two altos are in unison with the cellos while the tenor is written an octave above the double basses.

Fig. 37--Excerpt from Vaughan Williams' Symphony in E Minor, No. 2, First movement

Later in the same movement, the saxophones become members of the brass section. The first alto, second alto, and tenor saxophones play in unison with the first, second, and third trombones, respectively.

Fig. 38—Excerpt from Vaughan Williams' *Symphony in E Minor*, No. 2, First movement

In the closing bars of the first movement, the saxophones are featured as a choir. The string section and the horns sustain an E minor chord while the saxophones play the chord progression—E minor, F minor, A-flat minor, and F minor.

Fig. 39—Passage from Vaughan Williams' *Symphony in E Minor*, No. 2, First movement

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41 Ibid., p. 39.
In the second movement Vaughan Williams uses the saxophones as members of the woodwind section. The three saxophones are in unison with the English horn an octave below the flutes, oboes, and clarinets.

Fig. 40--Excerpt from Vaughan Williams' *Symphony in E Minor*, No. 2, Second movement

In the third movement the alto saxophone states the main theme, accompanied by the other saxophones and pizzicato strings.

Fig. 41--Passage from Vaughan Williams' *Symphony in E Minor*, No. 2, Third movement

\(^{42}\)Ibid., p. 64.  \(^{43}\)Ibid., pp. 73-74.
The strings take up the rhythmic melody while the upper horns and saxophones play an accompaniment part in unison.

Fig. 42--Excerpt from Vaughan Williams' Symphony in E Minor, No. 2, Third movement\(^{44}\)

Vaughan Williams utilizes a string technique by overlapping the saxophones in continuous sixteenth-note runs.

Fig. 43--Passage from Vaughan Williams' Symphony in E Minor, No. 2, Third movement\(^{45}\)

\(^{44}\) Ibid., p. 78.  
\(^{45}\) Ibid., pp. 84-85.
At the recapitulation the first theme (Figure 40) is played in a fugue. The tenor saxophone enters first, followed by the second and first alto saxophones, respectively. The side drum accentuates the entrance of each new voice.

Fig. 44—Fugue from Vaughan Williams' Symphony in E Minor, No. 2, Third movement

Ibid., pp. 97-100.
Following the fugue, the saxophone choir states the earlier chord progression (Figure 39) in another key. In the closing bars the tenor saxophone begins to replay the fugue, this time with side drum accompaniment. The alto saxophone assumes the melody for two measures, then fades out leaving the solo side drum to finally die away.

![Musical notation]

Fig. 45—Closing bars from Vaughan Williams' Symphony in E Minor, No. 9, Third movement

In regard to Vaughan Williams' symphony, Elliott S. Schwartz states:

"This symphony represents a unique achievement for a composer in his eighties. The significance of the composer's age rests not in the worth of the music, *per se*, which is a matter for individual taste, but in its extraordinary youthfulness and its freshness of approach, both in form and orchestration."

A work of this scope proves that the saxophone section can be successfully employed in the symphony orchestra.

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The Future Use of the Saxophone in the Orchestra

Although the saxophone has not yet been accepted as a regular member of the symphony orchestra, its future chances of acceptance should not be underestimated. The saxophone is only 130 years old and must still be considered an "infant" as compared to such instruments as the trumpet or violin. The saxophone had not been invented at the time of Mozart and Beethoven; consequently, a wealth of great orchestral literature was written before its existence. The fact that many great composers used the saxophone almost immediately after its invention proves it has some merit as an orchestral instrument. The saxophone was studied seriously as early as 1857; and, until the early twentieth century it was looked upon favorably by composers and serious musicians. Whether the advent of "jazz" kept the saxophone from fading into non-existence, like the ophicleide, or from becoming a regular member of the symphony orchestra is debatable.

The future use of the saxophone depends greatly upon the quantity and quality of professional saxophonists. Musical performances of works utilizing the saxophone will inspire composers to include the instrument in future compositions. In the last decade the saxophone has gained much respect and is being studied seriously in leading conservatories and schools of music. Considering the symphonic literature in
existence today, it is not possible to list the saxophone as a "standard" orchestral instrument; however, as composers continue its inclusion in their scores, it could someday become an integral member of the symphony orchestra.
APPENDIX

American Composers

Bernstein, Leonard, Kaddish Symphony (1964), symphony; alto.

Carpenter, John Alden, Skyscrapers Ballet (1926), ballet; uses three players for seven saxophones--C soprano, Bb soprano, 2 altos, 2 tenors, baritone.

Copland, Aaron, Concerto for Piano and Orchestra (1927), concerto; soprano and alto.

__________, Music for Radio, "A Saga of the Prairie" (1937), suite; 2 altos, tenor.

Foss, Lukas, Phorion ( ), orchestral work; soprano.

__________, Symphony of Chorales (1958), symphony; tenor.

Fry, William Henry, Hagar in the Wilderness (1854), symphonic poem; alto.

__________, Santa Claus Symphony (1853), symphony; soprano.

Gershwin, George, An American in Paris (1928), orchestral piece; alto, tenor, baritone.

__________, arr. by Grofe, Rhapsody in Blue (1923), orchestral piece; 2 altos, tenor.

Gould, Martin, Latin-American Symphonette (1941), symphony; alto.

Grainger, Percy, Green Brushes (1931), orchestral piece; soprano, baritone.

__________, In a Nutshell (1916), suite; alto.

Harris, Roy, Symphony No. 5 (1943), symphony; tenor.

Ives, Charles, Symphony No. 4 (1916), symphony; tenor.
Janssen, Werner, *New Year's Eve in New York* (1928), jazz band and orchestra; soprano, 2 altos, tenor.

Shapey, Ralph, *Dimensions* (1960), soprano (voice) and 23 instruments; tenor.

Thomson, Virgil, *The Plow that Broke the Plains* (1936), orchestral suite; alto, tenor.

Wuorinen, Charles, *Into the Pipes and Steeples* (1957), antiphonal orchestra; the saxophone has no written part, but must improvise where the score indicates.

**Austrian**


_________, *Lulu* (1937), opera; soprano, alto.

**Belgian**

Poot, Marcel, *Jazz-Music* (1932), orchestral piece; alto.

_________, *Symphonie* (1935), orchestral piece; alto.

**Brazilian**

Villa-Lobos, Heitor, *Choros No. 8* (1926), orchestral piece; alto.

_________, *Choros No. 10* (1927), orchestral-choral piece; alto.

**English Composers**

Britten, Benjamin, *Sinfonia da Requiem* (1941), religious symphony (three movements); alto.

Holbrooke, Josef, *Apollo and the Seaman* (1907), dramatic symphony; soprano, tenor.

__________, *The Mask of the Red Death* (1904), ballet; alto, tenor.
Holbrooke, Josef, *The Raven* (1900), symphonic poem; alto, tenor.

Vaughan Williams, Ralph, *Job* (1931), ballet; alto.

——, *Symphony No. 6 in E Minor* (1948), symphony; tenor.

——, *Symphony in E Minor, No. 9* (1957), symphony; 2 altos, tenor.

Walton, William, *Belshazzar's Feast* (1931), oratorio for baritone (voice), chorus, and orchestra; alto.

——, *Facade Suite No. 2* (1938), orchestral suite; alto.

**French Composers**


Charpentier, Gustav, *Impressions of Italy* (1913), suite; soprano, alto.

——, *The Life of the Poet* (1892), symphonic drama; soprano, alto.

Delannoy, Marcel, *Figures Sonores* ( ), chamber orchestra; alto.

Delibes, Leo, *Sylvia* (1876), ballet; alto.


Halevy, Jacques, *Le Juif Errant* (1852), opera;

Honnegger, Authur, *Saint Joan* (1938), stage oratorio; 3 altos.

Ibert, Jacques, *Suite Symphonio* ( ), suite; alto.
Indy, Vincent d', *Fervaal* (1897), lyric drama; soprano, alto, tenor.

*Legend of St. Christopher* (1920), lyric drama; soprano, 2 altos, tenor, baritone, bass.

*Poeme des Rivages* (1921), symphonic poem; soprano, 2 altos, tenor.

Kastner, Georges, *Le dernier Roi de Juda* (1844), biblical opera; bass (?).

Massenet, Jules, *Herodiade* (1881), opera; alto.

*Werther* (1892), opera; alto.


*The Carnival of London* (1937), suite; alto.

Paladilhe, Emile, *Patrie* (1886), opera; alto.

Ravel, Maurice, *Bolero* (1928), orchestral piece, sopranino, soprano, tenor.

Saint-Saëns, Camille, *Henry VIII* (1883), opera; soprano.

*La Jeunesse d'Hercule* (1877), symphonic poem; soprano.

Thomas, Ambroise, *Hamlet* (1868), opera; alto.

*Francois de Rimini* (1882), opera; baritone.

**German Composers**

Hindemith, Paul, *Cardillac* (1926), opera; tenor.

*News of the Day* (1929), overture to the opera; alto.

*There and Back, Op. 45a* (1927), sketch with music; alto.

Meyerbeer, Giacomo, *L'Africaine* (1865), opera; alto.

Weill, Kurt, *Three Penny Opera* (1928), opera; soprano, alto, tenor.

**Hungarian Composers**

Bartok, Bela, *Three Village Scenes* (1927), four female voices and orchestra; alto.

_________, *Wooden Prince* (1917), ballet; alto.


**Italian Composers**

Dallapiccola, Luigi, *Dialoghi* (1960), cello and orchestra; alto.

Puccini, Giacomo, *Turandot* (1926), opera; alto.

**Spanish**


**Russian Composers**


Mussorgsky, Modeste, arr. by Ravel, *Pictures at an Exhibition*, "The Old Castle" (1922), suite; alto.

Prokofieff, Serge, *The Duenna* (Opera) (1940), opera; 3 altos.

_________, *Lieutenant Kijé* (1933), orchestral suite; tenor.

_________, *Romeo and Juliet Suite No. 1 and No. 2* (1936), suites from ballet; tenor.
Rachmaninoff, Sergei, *Symphonic Dances* (1941), dance suite; alto.


________________________, *Golden Mountain* (1931), film music; soprano.
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