

1 Invention and development

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Introduction

The word ‘saxophone’ means ‘the sound of Sax’ – specifically that of Adolphe Sax. The Greek word ‘phone’, according to the *Oxford English Dictionary*, relates in particular to vocal sounds, so we should not be surprised that the saxophone is often described as a ‘singing’ instrument. In fact, the saxophone is the most flexible and expressive of musical instruments, exceeded, perhaps, only by the human voice. The human voice, of course, is capable of sounds as varied as cheerleading and Schubert lieder; it is capable of producing guttural sounds and fine-spun eloquence, of rabble-rousing and of inspiring. The saxophone is similar in its potential to move people, both viscerally and emotionally.

As a ‘singing’ instrument, the saxophone is unmatched by its mechanical counterparts. This is often reflected in its classical repertoire, but there can be little doubt that the saxophone is the pre-eminent jazz instrument. If jazz first came from the work-shouts and the blues sung in the nineteenth century, then it is natural that a ‘singing’ instrument such as the saxophone should be well suited to jazz and popular music. What is remarkable is that the instrument took so long to be adopted by jazz musicians.

The saxophone is the invention of a single man, Adolphe Sax. Both a thinker and a doer, he had the genius to conceive a new and versatile instrument, the practical background to bring his theories to fruition and the foresight to create the mechanisms necessary to ensure that it would become an important part of the musical world.

Adolphe Sax

Born in Dinant, Belgium, on 6 November 1814, Adolphe Sax was the first child of Charles and Maria Sax (christened Antoine Joseph, he was called Adolphe from childhood). Shortly afterwards the family moved to Brussels and Charles began a new and successful career which was to profoundly influence his son – he turned from the manufacture of cabinets and tables to the manufacture of clarinets and brass instruments.

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Fig. 1.1 Dinant, Belgium, birthplace of Adolphe Sax

Charles was appointed Instrument Maker to the Court of the Netherlands, and is perhaps best remembered for his version of the *cor omnitonique*. The instrument was intended as a solution to the numerous and cumbersome crooks of the hand horn, but lost out to the lighter-weight and more efficient valved horn.

Adolphe was often to be found in his father's workshop and at an early age learned the skills necessary to the profession. In addition to the instruction he received from his father, he also received a formal education and music instruction at the Brussels Conservatory. He studied voice and flute; later he also studied clarinet. It is said that Sax could have pursued a successful career as a clarinetist, but his interest in overcoming the instrument's acoustical shortcomings kept returning him to the workshop to seek solutions.

Sax's skill as an instrument maker grew rapidly, and his work soon began to attract favourable comment. Horwood suggests that Charles was principally concerned with the production of instruments for sale and that he left various experimental projects to Adolphe. These experiments included the development of valved bugle-horns – the saxhorns – and the combination of a conical metal tube with a single-reed mouthpiece – the saxophone.¹

Another important success of this period was the construction of a vastly improved bass clarinet. It was the bass clarinet which first brought Adolphe Sax to Paris in 1839, where he sought out Isaac Dacosta, solo

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clarinet at the Paris Academy of Music and creator of his own improved bass clarinet. Sax persuaded Dacosta to listen to him perform the solo from Meyerbeer's *Les Huguenots* and to acknowledge the superiority of Sax's instrument. During the course of this first visit Sax met many prominent musicians, including Berlioz, Halévy, Kastner and Meyerbeer. These influential contacts were to prove crucial to Sax when, in 1842, he returned to Paris for good.

Sax's decision to leave Brussels was sealed by officials of the Brussels Exhibition of 1841. Among the items which Sax prepared for the Exhibition were several clarinets and, Sax's friend Georges Kastner tells us, a saxophone. This would have been the first public presentation of the saxophone except that, Kastner continues, the instrument 'was sent flying with a kick by an unknown person at a time when the inventor, Adolphe Sax, was away'.² The examining committee recommended the young craftsman's display for the Premier Gold Medal, the Exhibition's highest award. The recommendation, however, was rejected by the Central Jury, which declared against his youth: if Sax were to receive the first prize this year, there would be nothing to give him the next year. Sax's response was typical of the man: 'If I am too young for the gold medal, I am too old for the silver'. Paris beckoned.³

Shortly after this incident Sax was visited by an influential aide to the French king Louis-Philippe. Lieutenant General Comte de Rumigny spoke to Sax of ambitious plans to revitalise French military bands, and saw the Belgian's work as a means to that end. Sax was further encouraged by a letter from composer Jacques Halévy, whom he had met in Paris. The self-confident instrument maker left Brussels behind and moved to Paris with his ideas, his creations and his hopes in the spring of 1842.

Successes and opposition

Sax's arrival was heralded by Hector Berlioz in the 12 June 1842 issue of the highly regarded *Journal des débats*. In a column entitled 'Adolphe Sax's Musical Instruments' Berlioz introduced the young inventor to the French public. After a few paragraphs in which Berlioz describes the development of musical instruments, he presents:

M. Adolphe Sax of Brussels, whose work we have just examined. . . . He is a man of penetrating mind; lucid, tenacious, with a perseverance against all trials, and great skill. . . . He is at the same time a calculator, acoustician, and as necessary also a smelter, turner and engraver. He can think and act. He invents and accomplishes.⁴

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Fig. 1.2 Bust of Adolphe Sax

There follows a description of several of Sax's instruments, including the first detailed account of the saxophone. Berlioz closes with the prediction that 'Composers will be much indebted to M. Sax when his instruments come into general use. May he persevere; he will not lack support from friends of art.'⁵

One of the results of this announcement was a public concert that same month at the Paris Conservatoire, at which Sax played proficiently and talked eloquently about his instruments. Sax met and was befriended by many of the most distinguished musicians in Paris, including Auber, Habeneck, Spontini and Donizetti. Funds were gathered for the establishment of the Adolphe Sax Musical Instrument Factory at No. 10 Rue Saint Georges.

He also aroused the beginnings of a bitter enmity between himself and the established instrument makers of Paris. They had been put on notice that the young Belgian would undoubtedly challenge their businesses, and his close association with so many prominent musicians clearly threatened their success. Thus began a round of threats, thefts and legal battles (and, possibly, even an attempt on his life) that would pursue him for decades. Berlioz, in a letter dated 8 October 1843, wrote:

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It is scarcely to be believed that this gifted young artist should be finding it difficult to maintain his position and make a career in Paris. The persecutions he suffers are worthy of the Middle Ages and recall the antics of the enemies of Benvenuto, the Florentine sculptor. They lure away his workmen, steal his designs, accuse him of insanity, and bring legal proceedings against him. Such is the hatred inventors inspire in rivals who are incapable of inventing anything themselves.⁶

Among the tactics employed by these adversaries was an engineered opposition to the general acceptance of Sax's instruments in orchestras. Many important performers served as consultants to instrument manufacturers and refused to play on an instrument by a rival maker. One such incident occurred in 1843, when, while writing his opera *Dom Sébastien*, Gaetano Donizetti prepared a part for the Sax bass clarinet. The principal clarinettist of the Opera orchestra threatened that, if the instrument were to be used, the orchestra would walk out. Donizetti, despite his high regard for Sax, was forced to bow to the musicians' demands.

The animosity between Sax and his rivals intensified when the French government made an announcement that would affect every wind instrument maker in France: the reform of the French military bands. The abysmal state of French military music was an embarrassment to French patriotism and prestige. To address the situation a commission consisting of musical, military and acoustical representatives, and headed by General de Rumigny, met on 25 February 1845. Manufacturers were requested to submit instruments for consideration by the commission; only Sax gave a full response to the invitation.

Perhaps the most auspicious event of the commission's activities occurred on 22 April of that year when two bands performed in competition before an audience, estimated at 20,000, gathered on the Champ du Mars in Paris. One band, under Michele Carafa, director of the *Gymnase de musique militaire* and a member of the commission, represented a conservative reorganisation of the existing ensembles. The other band, directed by M. Fessy, demonstrated fully Sax's comprehensive reforms and his instruments – the saxophone and, especially, the saxhorn.

Each band was to consist of forty-five players and would perform arrangements of music by Adolphe Adam and a work selected by their conductor. The audience declared Sax's ensemble the clear winner, and the commission took the results under advisement as part of the process. The final report, submitted to the Minister of War on 9 August 1845, was a distinct victory for the Belgian – the government had declared a near monopoly mandating the use of his instruments.

Rival instrument makers had been placed in an untenable position. Faced with financial destruction, they consolidated against the common

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enemy from Dinant. *L'Association générale des ouvriers en instruments de musique* (the United Association of Instrument Makers) was established to protect their interests.

One of the Association's first lawsuits opposed Sax's application to patent the saxophone. Various contradictory lines of attack were made: the instrument does not exist; if it does exist, it is a completely unmusical invention; and, in any event, it is not original because it already exists in other forms. Among the presumed antecedents were the 'English tenoroon', a bass clarinet by Desfontenelles, and the German bathyphone by Wieprecht. In another tactic several saxophones were purchased and sent to other countries; Sax's identification was removed and the instruments were then re-engraved to indicate foreign manufacture. These forgeries were poorly executed and quickly revealed as a ruse.

Of greater legal consequence was the contention that, because the saxophone had been performed before a large public audience during the contest on the Champ du Mars, it was invalid for patent. Here the Association could cite a legal precedent. Sax's response was direct and dramatic: he challenged his opponents to create the instrument (which did or did not exist) known as the saxophone and he withdrew his patent request for a year to give them ample time to do so. The plaintiffs were unable to create a rival instrument.

To respond in the form of a challenge was typical of Sax. Also typical was the impatience that led him to reapply for the patent shortly before the year's respite had elapsed. Sax was granted a patent for the saxophone family on 22 June 1846, sometimes referred to as the birth date of the saxophone. The Association, however, was not through.

The Revolution of 1848 provided the Association with a new opportunity when King Louis-Philippe was forced to abdicate. Louis-Philippe's staff, which included many of Sax's most influential supporters, fled with him. Sax's lengthy relationship with the king was now a serious liability, and the 1845 reforms of military bands were revoked by the new government in a bill introduced by the Association. Orders for new Sax instruments were cancelled and deliveries were returned. The closure of the factory seemed inevitable until an anonymous benefactor stepped forward; his generosity unintentionally led the impulsive Sax to bankruptcy.

The anonymous business associate, concerned by rising unemployment in Paris during the turbulent period, gave Sax 30,000 francs to pay his workmen. Because no receipt was requested, Sax understood the sum to be a gift rather than a loan. The benefactor died in 1852, with the money unaccounted for in his estate. Sax rashly acknowledged in writing that he had received the money as a loan and was immediately ordered to

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repay the debt within twenty-four hours. He fled to London and pleaded his case by mail. His pleas were ignored and he returned to Paris and financial ruin.

Battles and bankruptcy

The series of lawsuits and appeals begun in 1846 would consume Sax's physical and financial resources throughout the remainder of his life. Although there seems to be no evidence that the Association was involved in the circumstances which led to Sax's bankruptcy, they were undoubtedly pleased by the turn of events. Sax's ability as an inventor was not matched by his acumen as a businessman nor as a litigant.

The Revolution of 1848 greatly affected Sax's legal status. Whereas in late 1847 his patents had been upheld by the courts, by 1849 an appeal by the Association rendered the patents for *bugles-à-cylindres* and saxotrombas void. The saxophone patent, however, was sustained. Appeals and counter-appeals by both Sax and the Association led to an eventual conclusion at the Imperial Court at Rouen in 1854. Eight years after the original lawsuit was filed the high court ruled completely in favour of Sax, declaring that his patents were valid and that he was entitled to damages and reimbursements from the Association. None the less, damage had been done. Time and money which could have been spent creatively and productively had been expended on seemingly endless legal procedures.

Undoubtedly Sax had several reasons to be optimistic at the apparent conclusion of his legal battles. In April 1854 he was appointed Musical Instrument Maker to the Household Troops of Emperor Napoleon III. The emperor further showed his favour by assisting Sax in his bankruptcy. Arrangements were made with Sax's numerous creditors, allowing him to reopen his factory on the Rue Saint Georges, now at No. 50.

Despite his vindication in the courts and the renewed support from the emperor, Sax was adversely affected by his years of legal battles. Perhaps his natural contentiousness was intensified by the slanderous misrepresentations to which he was subjected, or perhaps he felt that he now understood the legal system and could use it to his advantage. Whatever the cause, there can be little doubt that his health was also an important factor.

Since 1853 Sax had been concerned about a dark spot on his lip which had blackened and grown in size. The tumour was diagnosed as malignant; surgical removal of the tumour, including lip and part of the jaw, seemed inevitable. The cancer obstructed Sax's throat to the extent that it became necessary for him to be fed by means of a tube. The recommended

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operation was delayed by the lawsuits, and Sax cast about for a cure that would avoid disfiguring surgery. He was introduced to Dr Vries, an Indian doctor in Paris, who had achieved some success in treating incurable ailments, and in 1859 the black spot began to decrease until it had completely and miraculously disappeared.

It was during this troubled period that Sax made the decision to return to the courts, but now as a plaintiff. In 1859 Sax sued Pierre Louis Gautrot for a perceived infringement of his saxophone patent. In 1856 Gautrot had patented a family of instruments by M. Sarrus. The instruments, called sarrusophones, were too similar to the saxophone in Sax's judgement. Like the saxophone, the sarrusophone is conical in shape, has the same written range from b to f³,⁷ and is grouped in similar keys and registers. The sounds produced by the two instrument families, however, are markedly different, and the court ruled against Sax, deeming the instruments to be completely different.

Sax again returned to the courtroom as a plaintiff in 1866, and this time was successful in a suit which did him no good. A well-known opera singer, Marie-Constance Sass, had grown dissatisfied with her name and had changed it to 'Sax'. The inventor's objections, upheld by the court, led her to suggest 'Saxe' as an alternative. This was also unacceptable to Sax and to the court, whose ruling gave Sax a victory of doubtful significance.

Other events were of more value to Sax. In 1847 he was appointed Musical Director of the stage brass band at the Opera, a position he would hold until his death, and which would become his sole reliable source of income.⁸ On 7 June 1857, Sax was asked to institute a saxophone class at the Paris Conservatoire; he remained in that position until the catastrophic war of 1870 between France and Prussia. He received medals and awards from the emperor and around this time became the father of two sons and a daughter. Charles, born in October 1856, died in infancy in 1858. Adele, born 29 November 1858, lived until 1938, and his son Adolphe Edouard, born 29 September 1859, lived until 1945. Adolphe Edouard continued the family business until it was sold to the Henri Selmer Company in 1928.⁹

Sax continued to present his instruments at various exhibitions and in 1867, at the Paris International Exhibition, was awarded the Grand Prize. Horwood reports that the display included an example of every musical instrument Sax had invented or improved. The centrepiece was an exquisite gold-plated alto saxophone.¹⁰

This distinction may have been the apex of Sax's life. Because Sax had regained solvency since his bankruptcy of 1852, he was astonished to learn that because the recovery had not been officially recorded by the Commerce Court, he was dismissed from the Legion of Honour. The

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decoration, bestowed by the emperor in 1849, was one of Sax's most distinguished awards and he wore the cross with justifiable pride. Its loss in 1860 because of an administrative omission humiliated him.

The emperor himself was deposed after the French surrender at Sedan to the Prussians in September of 1870, costing Sax his most influential ally. Many of Sax's close colleagues passed away in the years between 1867 and 1871 – Kastner in 1867, Rossini in 1868, Berlioz in 1869, and Auber and Féti's in 1871. Their counsel and support would be sorely missed in the years ahead.

By this time he was estranged from his brother Alphonse, also an inventor and instrument maker, with whom he had quarrelled at the 1862 Exhibition in London. His father, Charles, had died in 1865, and in 1871 his brother Charles-Joseph passed away; both had provided important assistance at the factory on the Rue Saint Georges.

Sax had been unable to take full benefit of the opportunities his exclusive patents had afforded him. When his patents ceased in the mid-1860s, other instrument manufacturers moved quickly on the expired patents, and orders to the Sax factory diminished. As his financial situation worsened, he was struck another blow.

The French defeat at Sedan caused a number of financial rescissions, including the close of the saxophone class at the Conservatoire in 1870; it would not be reinstated until 1942. Not only was Sax deprived of an important source of income, the future of the saxophone was endangered. Realising that without teachers there could not be students for the new instrument, Sax offered to continue to teach without fee; his proposal was rejected. In 1873 Sax, for the second time, was declared bankrupt.

The Rue Saint Georges factory was shut down, its contents sold to appease creditors. Sax's acclaimed collection of 467 musical instruments was sold in December 1877; many examples are still in museums in Brussels and Paris.¹¹

All that remained were the lawsuits and the position of Musical Director at the Opera. The Association had continued to contest the judgement of 1854; throughout the 1880s Sax persevered in his battle for the compensation due him but was never to receive the reparations he had been awarded.

A poignant final petition came from Sax in 1887 in the journal *La Musique des Familles*. In his 'Appeal to the Public' the seventy-two-year-old Sax asks once again for justice in his attempts to gain restitution from the Association after twenty-six years of waiting. This remarkable document brought no response from the legal system.¹² It did succeed, however, in motivating several musicians, led by composer Paul Lacôme,

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Fig. 1.3 Alto saxophone by Adolphe Sax, c. 1857

in their own appeal on Sax's behalf. The request resulted in a modest pension for the aged inventor.

In keeping with the turbulence of his life, there is also controversy about the date of Sax's death. Several sources, including *Grove*, Horwood, and Ronkin, cite 4 February 1894 as the date of his death. Gee gives, simply, 1894, while Kochnitzky says that 'Sax lived to the age of eighty'.¹³ Because Sax was born 6 November 1814, this implies that he lived past 6 November in 1894. The correct date, found in *Baker's*, Deans, and Haine, is 7 February 1894.

The saxophone: theories of invention

Various theories surround the creation of the saxophone, many of which are as complex and confusing as the lawsuits which plagued its creator. Several of these theories seem to have derived some credibility from their mention in the lawsuit of 1846 in which Sax's patent of the saxophone was challenged and, ultimately, upheld. There are, in fact, precedents for Sax's creation, of which his challengers seem to have been unaware.