people loved it, because we were picking up the beat' (Rogovoy 2001). Players such as the Dirty Dozen Brass Band's Kirk Joseph have amplified the sousaphone to emulate many characteristics of the electric bass guitar.

Bibliography

Discography

Trombone
The European trombone (German posaune, Old French sacquebouté, Old English sackbut) has existed in similar form since 1551. Over the course of its existence, the instrument has evolved into five types marked by bore and bell sizes: the alto, tenor, symphonic tenor, bass and contrabass trombone. With the later development of mechanized brass, the trombone also developed a valve variant, consisting of a tenor trombone bell section and a section with three piston or rotary valves replacing the slide. All forms of the instrument except the valve version have been widely used in European art music ensembles. Popular music uses are dominated by the tenor slide and valve trombone, although the bass trombone has also developed distinctively in European brass bands and in big band jazz ensembles.

The worldwide spread of brass instruments and brass band music was a direct result of the diffusion and consolidation of European colonialism, particularly in the eighteenth and nineteenth centuries. This led to the presence of the trombone in military, church and other popular ensembles in various parts of Africa, Latin America and Asia-Pacific. In the years since, numerous fusion, hybrid and Creole forms of indigenized brass, percussion and brass, or bamboo and brass music have emerged in these regions. The trombone is part of many of these musical forms, although, as in the brass bands of Eastern and Western Europe, valve instruments (bass trumpet, baritone horn, euphonium) appear more often than the slide or valve trombone.

In the New World, the continuous and increasingly popular presence of the trombone in instrumental music is largely due to its role in jazz from the beginning of the twentieth century. Jazz has produced distinctive trombonists in every era and genre – performers who have cumulatively expanded the possibilities for trombone range, sound quality capabilities and performance speed in ways completely unanticipated and unimaginable in European art music. It is here, in the popular sphere, that the trombone has made its most expressive impact as an instrument with unique vocal and emotional qualities.

The 'tailgate' trombone style, critical to the sound of Dixieland collective improvisation, was developed substantially in the second and third decades of the twentieth century by Edward 'Kid' Ory and Jim Robinson. Jack Teagarden, Jimmy Harrison, Vic Dickenson, Benny Morton and Dicky Wells extended the melodic and rhythmic capabilities of the trombone in the 1920s and 1930s in the transition to swing. Band leader trombonists like Glenn Miller and Tommy Dorsey developed the trombone's role as a lyrical lead instrument with the big bands.

The timbral range and sound qualities of the trombone developed substantially in the vocal and muting techniques of Lawrence Brown, Quentin 'Butter' Jackson, Brit Woodman, Juan Tizol and Joe 'Tricky Sam' Nanton, all longstanding members of Duke Ellington's band and important interpreters of his music. As a soloist in the Count Basie band and other ensembles, Al Grey developed the art of the plunger mute to virtuoso standards on the trombone. The whisper and soft-tongue trombone solo work of Bill Harris while a member of the Woody Herman Herd further developed the instrument's vocal capabilities.

The bebop era in jazz produced players with remarkable tonguing speed, dexterity and ability to play the slide using alternate positions, thus overcoming limitations set by the natural overtone series of the instrument. Bop trombonists, with J.J. Johnson, Curtis Fuller, Slide Hampton, Kai Winding and Jimmy Knepper among the most recorded and admired, were able to keep up with stylistic developments largely associated with players of the trumpet and saxophone. The bop era also produced big band soloists like Carl Fontana, Frank Rosolino, Urbie Green and Phil Wilson, all of whom played in Stan Kenton's groups, and all of whom took the speed and register capabilities of the instrument to new heights.

In important avant-garde ensembles, like those of Archie Shepp or the Jazz Composer's Orchestra, as well as in groups of their own, trombonists Roswell Rudd and Grachan Moncur III restored and expanded many Dixieland and swing techniques in the new free jazz trombone vocabulary of the 1960s and 1970s. Albert Mangelsdorff developed the trombone's capability as a multiphonic instrument during the same period, mas-
tering the technique of singing and playing notes simultaneously. These approaches were developed and extended by George Lewis and Ray Anderson in the ensembles of Anthony Braxton and in other groups. Other often-recorded consolidators of this avant-garde jazz trombone legacy include Craig Harris and Frank Lacy.

In addition to the trombone’s success in every style and variety of jazz, the distinctiveness of a vernacular trombone voice developed in other African-American instrumental genres. Harlem’s McCullough Sons of Thunder, an ensemble consisting of 10 trombones plus sousaphone and percussion, provides an example of the instrument’s use in contemporary gospel music. Another example of the distinctiveness of a vernacular trombone voice is provided through the role of the trombone in the New Orleans brass band tradition. This role has developed continuously and is well represented in contemporary performance and recording by the Rebirth Brass Band, the Dirty Dozen Brass Band and Dejeans Olympia Brass Band. The most recent innovation in the New Orleans trombone tradition is the band Coolbone and its style, known as brass-hop, a fusion of hip-hop and vocal rap backed by a trombone-led horn section playing funk and New Orleans brass band riffs.

Distinctive creolized styles of New World African-Latin trombone playing also developed in dialog with jazz, rhythm and blues, and indigenous genres in the Caribbean. Among the most popular examples is Jamaican ska, whose best-known trombonists, Don Drummond and Rico Rodriguez, both performed with the prolific Skatalites. Distinctive styles of playing also developed in Cuba, especially with Generoso ‘Tojo’ Jiménez and Juan Pablo Torres, and in Brazil, with Raúl de Souza.

Although Latin trombone influence was introduced by Juan Tizol in Duke Ellington’s band, trombones contributed most distinctively to the Afro-Latin jazz fusion sound that developed in New York City in the 1940s and 1950s, particularly under the guidance of big band arranger-leaders like Dizzy Gillespie, Chico O’Farrell, Tito Puente, Tito Rodriguez and Benny (sometimes spelled ‘Benny’) Moré. Trombonist Barry Rogers played a prominent role in the emergence of Eddie Palmieri’s New York brass and percussion small group salsa sound in the 1960s, a role developed further in the 1990s by Conrad Herwig. In the 1970s, New York Puerto Rican trombonist and band leader Willie Colón developed the three-trombone sound in the fusion of Puerto Rican and Cuban salsa. That sound also developed in the Fania All Stars and Tito Puente’s bands, with trombonists Reynaldo Jorge and Lewis Kahn. Trombonists Steve Turre and Angel ‘Papo’ Vasquez also played an important role in the 1980s New York Latin jazz during the same time, in bands like Manny Oquendo’s Conjunto Libre and Jerry González’s Fort Apache Band. Turre went on to develop a style fusing Afro-Cuban, Brazilian and bebop jazz forms featuring a combination ensemble of trombones and conch shells. The legacy of this trombone-rich New York Puerto Rican-Cuban salsa sound crossed over into mainstream pop in the late 1980s when it was incorporated into projects by David Byrne and Talking Heads.

Trombones were rarely heard in rock music during its formative years. By the late 1960s, some rock and electric blues bands regularly or occasionally augmented the core band with a horn section consisting of trumpet, trombone and saxophone. Well-known examples, where the trombone contributed distinctively, include Chicago, the Paul Butterfield Blues Band, Blood, Sweat and Tears, the Buddy Miles Express, Dreams, the Average White Band and Roomful of Blues.

In soul and funk, the trombone had a major presence in the horn section of James Brown’s classic bands. By the early 1970s, trombonist Fred Wesley was featured both as a key soloist and as the arranger and leader of Brown’s instrumental backup ensemble, the JBs. Wesley later played with other members of the JBs (Maceo Parker and Pee Wee Ellis), and with Bootsy Collins and George Clinton, in Parliament and Funkadelic. The trombone was also represented in forms of avant-garde and jazz-influenced rock by Bruce Fowler’s work in some of Frank Zappa’s 1970s and 1980s ensembles.

Discography
Drummond, Don. Don Drummond, Greatest Hits. Treasure Isle TICD 004. 1989: USA.
Trumpets and Cornets

Trumpets and cornets are the highest-pitched modern brass instruments, all of which are lip-vibrated aerophones — that is, instruments in which a vibration is produced within the air column by means of air blown between the player’s lips, which are pressed against a mouthpiece. Trumpets in the broadest sense of the term — a length of (usually) metal tubing with a flared bell and a mouthpiece that is more or less cup-shaped — have existed for millennia. Upon the invention and application of valves early in the nineteenth century, brass instruments became fully chromatic, no longer limited to the notes of the overtone series. Most modern trumpets and cornets are pitched in B♭, with three piston valves and a tubing length of about 51” (130 cm). Orchestral players generally prefer to play C trumpets most of the time, with occasional use of instruments in B♭, D, E♭, F, G, and high A and B♭ (piccolo trumpets). However, in popular music, the standard B♭ trumpet has been almost universally used since the late 1920s.

Cornets are distinguished from trumpets by their more compact shape (tubing of the same length is differently folded), a more conical bore and a softer, mellower sound. Cornets were generally favored over trumpets in the nineteenth and early twentieth centuries; in certain respects more agile than trumpets, cornets are, however, capable of less brilliance, power and upper range. Louis Armstrong also remembered the difference as one of cultural prestige, at least in the second decade of the twentieth century:

Of course in those early days we did not know very much about trumpets. We all played cornets. Only the big orchestras in the theaters had trumpet players in their brass sections. It is a funny thing, but at that time we all thought you had to be a music conservatory man or some kind of a big muckity-muck to play the trumpet. For years I would not even try to play the instrument. (Armstrong 1986, 213–14)

Armstrong and most other jazz players switched from cornet to trumpet in the following decade, but the brilliant and powerful style of much jazz trumpeting can sometimes make it difficult to discern by ear whether a trumpet or cornet is being played on a given recording. The flugelhorn, a similar instrument with a larger bell, deeper mouthpiece and correspondingly darker sound, was used in jazz from the 1930s, and especially after Miles Davis popularized it in the 1950s. Noted players of the flugelhorn include Clark Terry and Art Farmer. Most jazz trumpeters now double on it at least occasionally.

There have arguably been four great styles of trumpet virtuosity: the valveless, high-range ‘clarino’ playing of eighteenth-century Europe; the cornet soloists of the late nineteenth and early twentieth centuries; modern orchestral and concert trumpeting; and twentieth-century jazz and jazz-influenced popular genres. The second category includes virtuosos such as Herbert L. Clarke, who was for a time featured with John Philip Sousa’s immensely popular band. This was the peak of a tradition of trumpet use by military and civic bands that continued throughout the nineteenth and twentieth centuries. However, it is the last of these categories that is of primary importance to popular music, since twentieth-century players of jazz and other popular music reinvented the trumpet, extending its power, lyricism, agility and expressive potential. The sheer volume produced by the trumpet facilitated its leadership role within a host of modern musical styles, and trumpet mutes allowed a great range of timbres.

Early jazz cornet players of note include band leader Joe ‘King’ Oliver, whose bluesy solos and use of mutes were widely imitated, as well as the legendary Buddy Bolden (who never recorded) and Freddie Keppard. The most influential cornet and trumpet player of this era, and arguably of the entire century, was Louis Armstrong. He set new standards for the instrument in terms of range, endurance, brilliance and power. His sense of rhetoric, swing and timing, together with his thrilling imagination and technical precision, brought him fame as the first great jazz soloist and affected virtually all jazz musicians who followed him. Armstrong’s white contemporary, Bix Beiderbecke, was an imaginative soloist in a restrained, cooler style; appropriately, he continued to use the cornet throughout his career.

The swing era was marked by saxophonists’ challenges to the trumpet’s dominance, but trumpeters continued to be central to popular music both as soloists and as members of sections of up to five players. The ‘growlers’ of Duke Ellington’s band — trumpeters Bubber Miley and Cootie Williams, as well as trombonist Joe ‘Tricky Sam’ Nanton — developed a rough, expressive manner of playing that Ellington used for what he called ‘jungle’ music. Roy Eldridge continued to develop the brilliant approach of Armstrong, and the trumpet’s technical possibilities began to rival those of the saxophone. These were glory days for the trumpet: players such as Armstrong and Harry James were stars of mainstream popular culture — a phenomenon that would not really occur