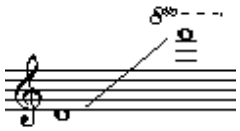
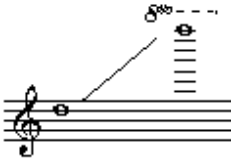
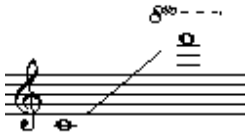
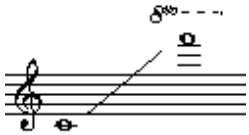
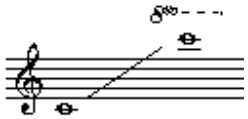
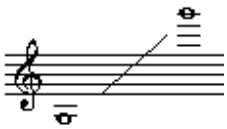
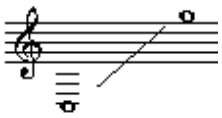
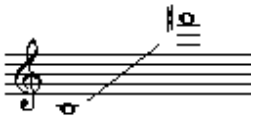
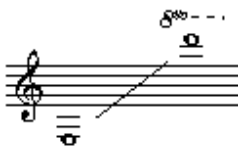
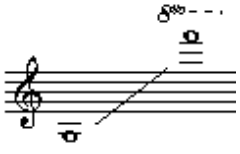
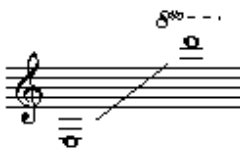
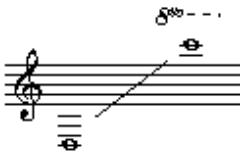
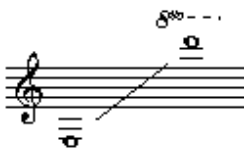
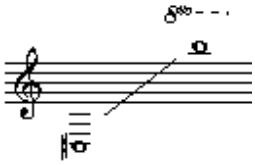
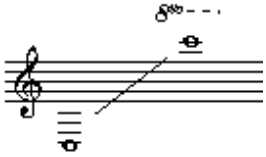
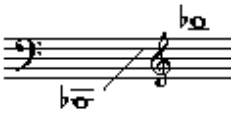
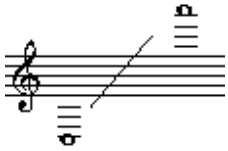
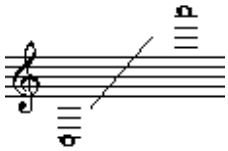
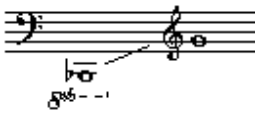
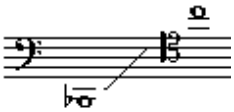
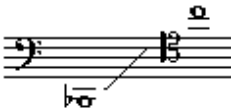
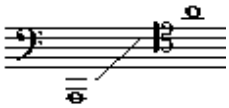
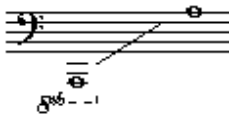
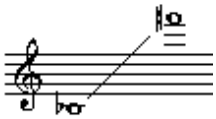
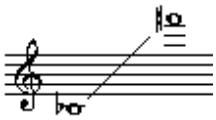
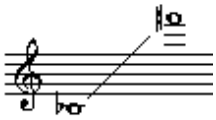
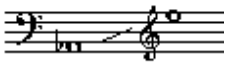
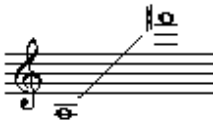
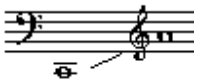
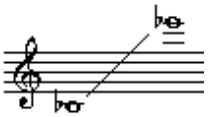
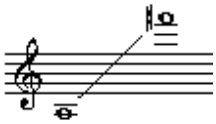
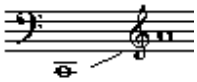
Rangos de instrumentos y su transposición (diferentes fuentes)

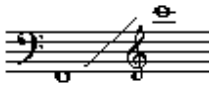
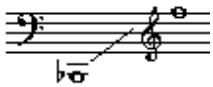
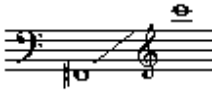
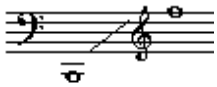
WOODWIND

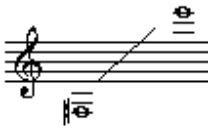
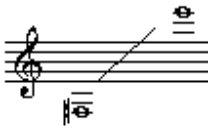
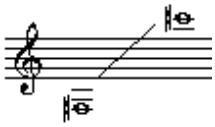
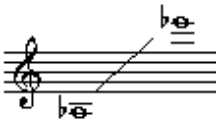
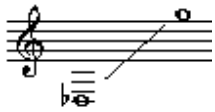
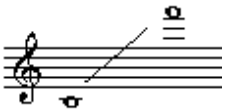
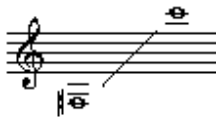
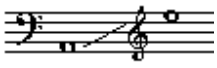
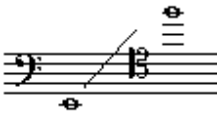
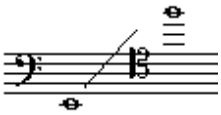
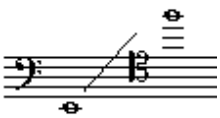
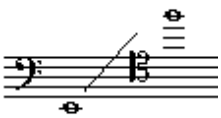
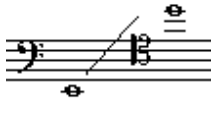
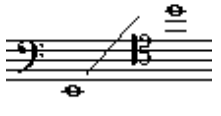
INSTRUMENT	WRITTEN	SOUNDING	NOTES
Piccolo			
Flute			
Alto Flute			The top note is approximate and will depend upon the instrument and the player.
Bass Flute			The top note is approximate and will depend upon the instrument and the player.
Oboe			Sometimes a higher top note will be possible, but these are often unstable.
Cor Anglais			
Clarinet in Eb			

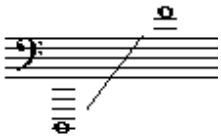
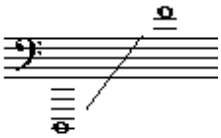
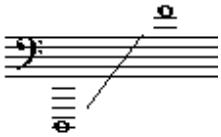
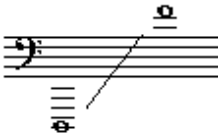
Clarinet in Bb			
Clarinet in A			
Bass Clarinet			
Basset Horn			
Contrabass Clarinet			
Bassoon			Low A is possible if a tube is inserted into the end of the bassoon. However, note that thhe low Bb becomes unavailable if you do this.
Contrabassoon			
Soprano Saxophone			A top written G is available on some sopranos. The harmonic register (written G6-D7) may be available, depnding on the player. Super high notes (Eb7-G7) should not be included without prior consultation with the player.

Alto Saxophone			The harmonic register (written G6-D7) may be available, depnding on the player. Super high notes (Eb7-G7) should not be included without prior consultation with the player.
Tenor Saxophone			The harmonic register (written G6-D7) may be available, depnding on the player. Super high notes (Eb7-G7) should not be included without prior consultation with the player.
Baritone Saxophone			The harmonic register (written G6-D7) may be available, depnding on the player. Super high notes (Eb7-G7) should not be included without prior consultation with the player.
Sopranino Saxophone			
Bass Saxophone			

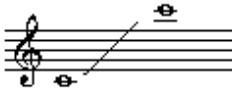
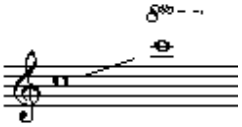
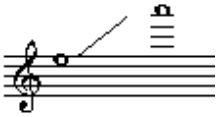
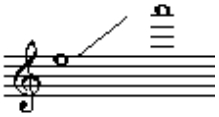
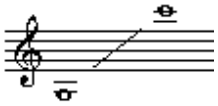
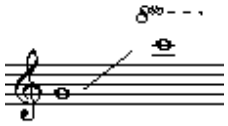
BRASS

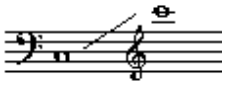
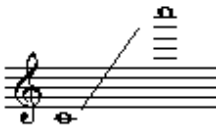
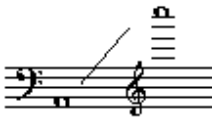
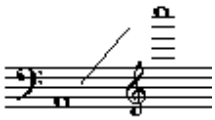
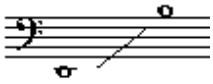
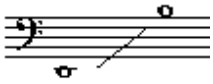
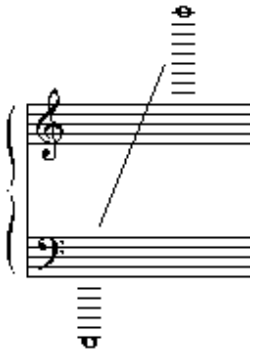
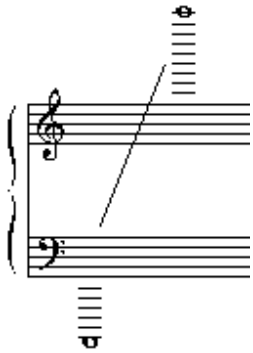
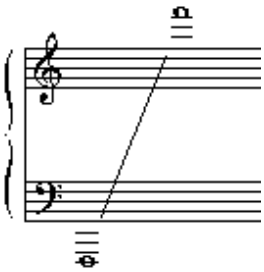
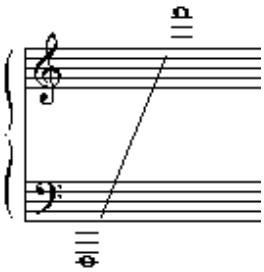
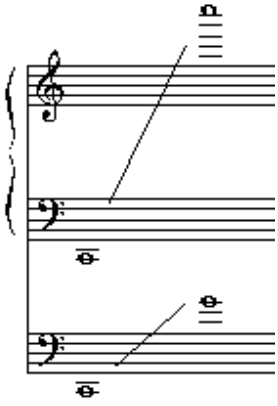
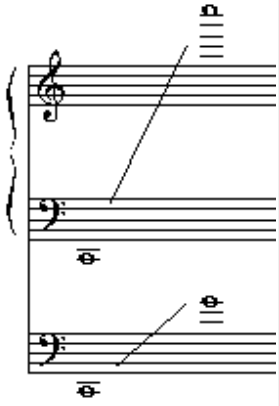
INSTRUMENT	WRITTEN	SOUNDING	NOTES
Horn in F			High horn specialist range (written): G3-C6 Low horn specialist range (written): F2-G5 Pedal notes (written): E2, Eb2, D2, Db2, C2
Wagner Tuba in F			

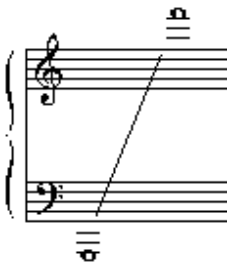
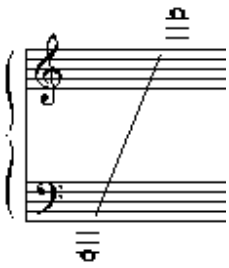
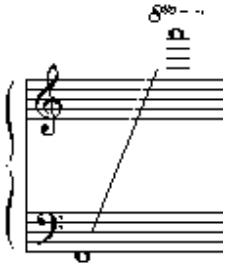
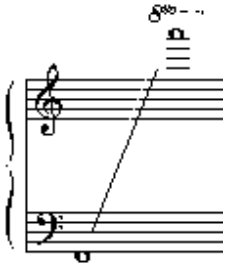
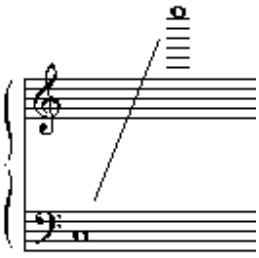
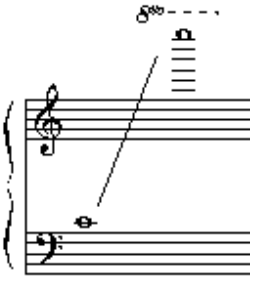
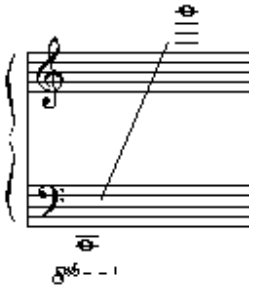
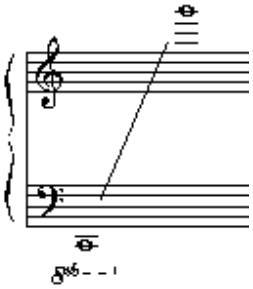
Trumpet in Bb			Pedal notes (written): C3, B2, Bb2, A2, Ab2, G2, Gb2
Trumpet in C			Pedal notes: same as Bb trumpet
Trumpet in D			
Piccolo Trumpet in Bb			
Flugehorn in Bb			
Alto Trombone			Top note is approximate
Tenor Trombone			Top note is approximate. Higher notes may be found by individual players. Pedal notes are theoretically available, but unstable and rarely used
Bass Trombone			Top note is approximate. Higher notes may be found by individual players. Pedal notes: Bb1, A1, Ab1, G1, Gb1, F1, E1
Euphonium (Tenor Tuba)			

Bass Tuba			Extra notes: Db1, C1, B0, Bb0 sometimes available
Contrabass Tuba			

PERCUSSION/KEYBOARDS/HARP

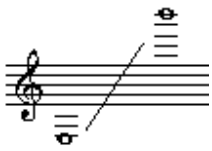
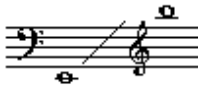
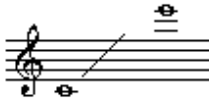
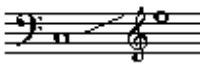
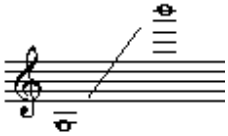
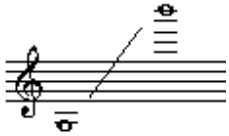
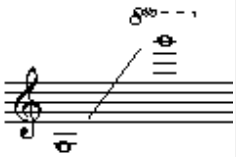
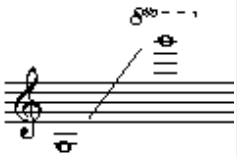
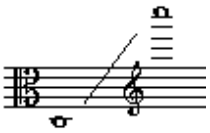
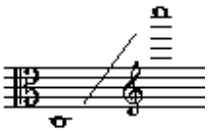
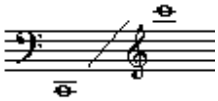
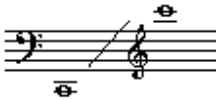
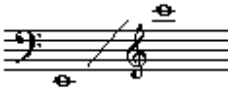
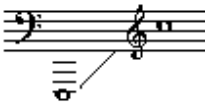
INSTRUMENT	WRITTEN	SOUNDING	NOTES
Crotales			
Flexatone			Pitches are obviously approximate.
Glockenspiel			
Tubular Bells			
Vibraphone			

Xylophone			
Marimba			
Timpani (set)			Each individual drum in a set of timpani has a range of a fifth. Check the timpani pages for further information.
Piano			Some pianos extend downwards by a further 5th. Some upright pianos only reach up to A7
Harpsichord			This is the range of the modern instrument. Historical ranges may vary.
Organ			Organ music is notated on three staves. The written ranges of the keyboards and the pedals is shown.

Harmonium			Harmonium ranges do vary greatly from instrument to instrument.
Accordion			Ths is the range of the 41-keyed concert accordion. Some accordions have fewer keys, 25 being the minimum.
Celeste			
Harp			

STRINGS

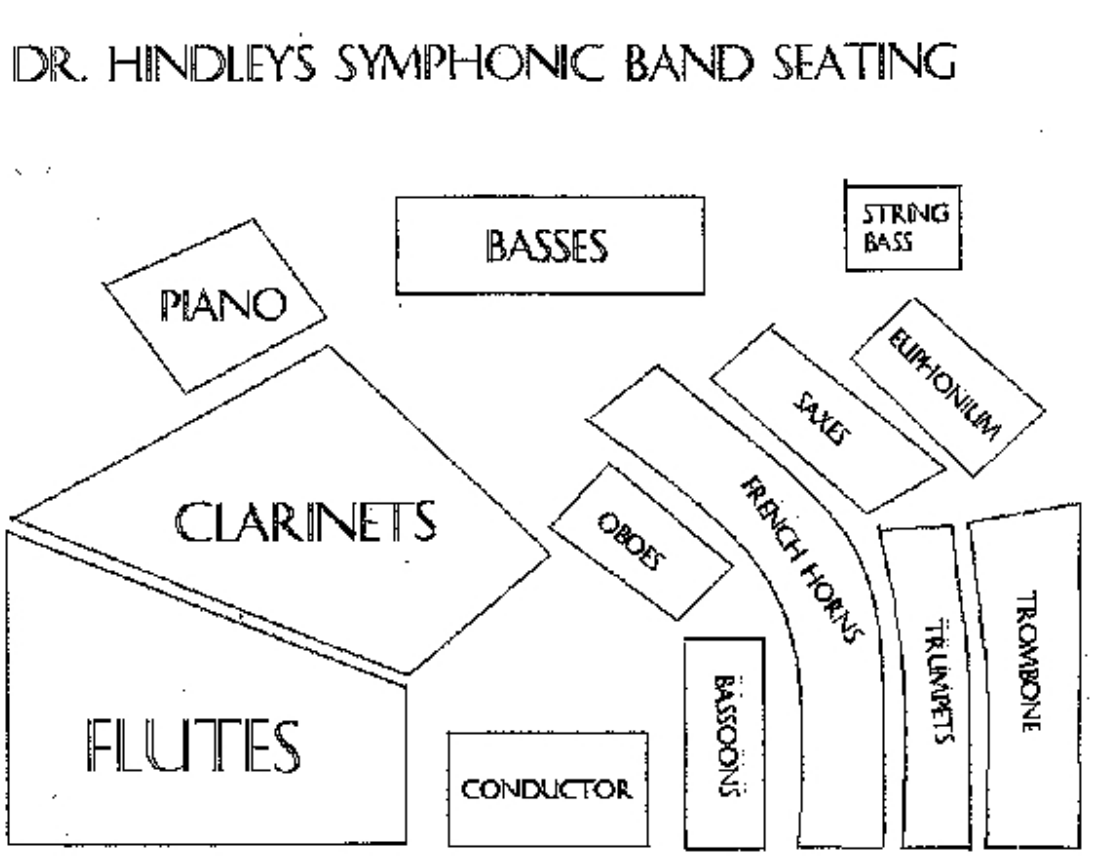
INSTRUMENT	WRITTEN	SOUNDING	NOTES

Guitar			
Banjo			This is the range of the tenor banjo. The five-string banjo is also frequently used, and this has various tunings depending upon the style of music being played.
Mandolin			Strings tuned in pairs.
Violin			
Viola			
Cello			
Double Bass			An extension gives the following additonal (written) notes: Eb2, D2, Db2, C2

Ensembles & Transposition

Orchestra

Modern Orchestras



Instrumentation

I. Strings

A. Violins

1st Violins- 16 to 18 people

2nd Violins- 14 to 18 people

B. Viola
-read C clef
-8 to 12 people
C. Cello
-8 to 10 people
D. Bass
-8 people

II. Woodwinds
A. Piccolo- 1 person
B. Flutes- 2 people
C. Oboes- 2 people
D. English Horn- 1 person
E. Bassoon- 2 people
F. Contrabassoon- 1 person
G. Clarinets- 2 people
H. Bass Clarinet- 1 person

III. Brass
A. Trumpets- 3 people
B. French Horns- 4 people
C. Trombone- 3 people
D. Bass Trombone- 1 person
E. Tuba- 1 person

IV. Percussion
A. Timpani- 1 person
B. Harp- 2 people
C. Piano- 1 person
D. Other Percussionists- 4 people

Concert Master

-first chair violin
-Tunes the whole orchestra
-Leads all strings (decides on type of bowing)
-at first, he was the conductor, everybody listened to him

Tuning

-Everyone tunes to Oboe because of harmonics. It is the hardest to tune.
-Everyone tunes to "A".

Band- Symphonic vs. Wind Ensemble

Band

-A Band is any collection of musicians.

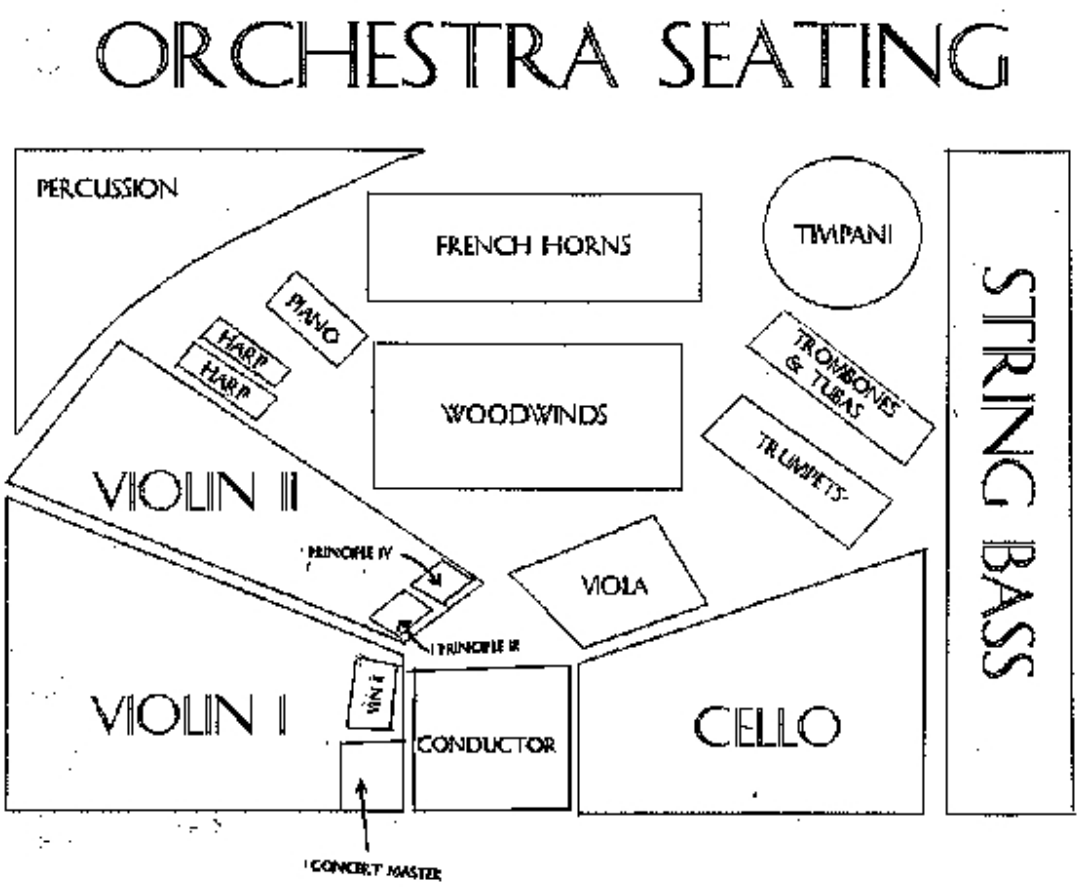
-The 2 main countries for the origin of band are USA and England.

-Bands started in the 1900's.

-There are 2 Opposing Philosophies for Band:

Symphonic Band	Wind Ensemble
Hindsley- University of Illinois	Fennel- Eastman
-started transcribing massive Orchestra music for Band.	-wanted only one person on a part.
-Had huge Bands	-Had smaller bands.

Symphonic Band



Instrumentation

I. Woodwinds

- A. 1 Piccolo
- B. 12 Flutes
- C. 4 Oboes
- D. 4 bassoons (contrabassoon
- E. 1 Eb Clarinet
- F. 20-25 Clarinets
- G. 2 Alto Clarinets
- H. 2-4 Bass Clarinets
- I. 1 Contra-Alto Clarinet (Eb)
- J. 1 ContraBass (Bb)
- K. 2 Alto Saxes
- L. 1 Tenor Sax

M. 1 Bari-Sax

II. Brass

A. 9 Cornets
B. 4 Trumpets
C. 9 French Horns
D. 10 Trombones
E. 4 Euphoniums
F. 6 Basses
G. 2 String Basses

III. Percussion

A. 1 Timpani
B. 2 Harps
C. 1 Piano
D. 4-5 Percussionists

Wind Ensemble

Instrumentation

I. Woodwinds

A. 1 Piccolo
B. 2-4 Flutes
C. 2 Oboes
D. 2 Bassoons
E. 1 Eb Clarinet
F. 6-8 Clarinets
G. 2 Bass Clarinets
H. 1 ContraBass Clarinet
I. 2 Alto Saxes
J. 1 Tenor Sax
K. 1 Bari Sax

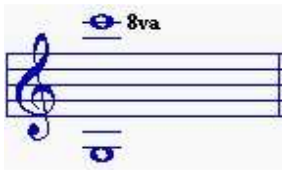
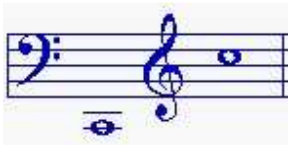
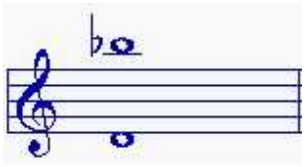
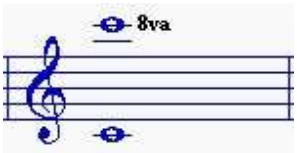
II. Brass

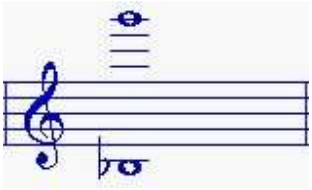
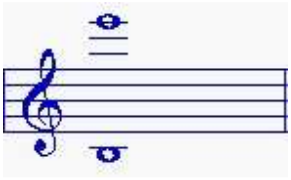
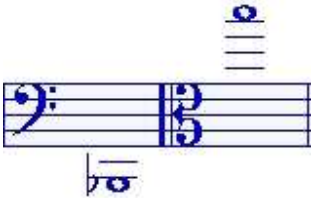
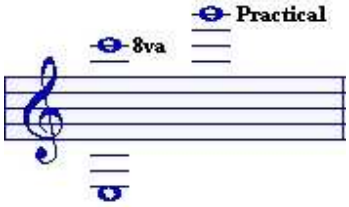
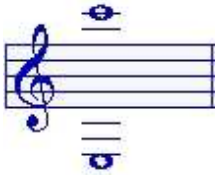
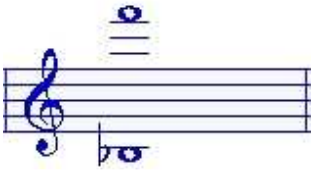
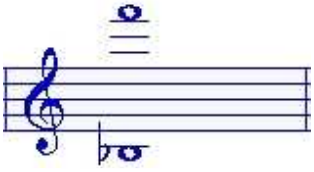
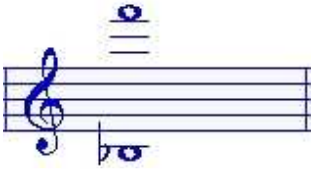
A. 3 Cornets
B. 2 Trumpets
C. 4-6 French Horns
D. 4 Trombones
E. 2 Euphoniums
F. 2 Basses
G. 1 String Bass

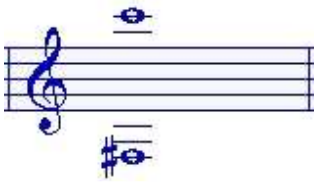
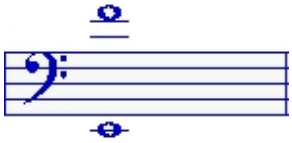
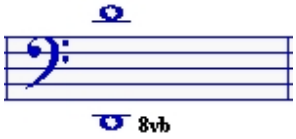
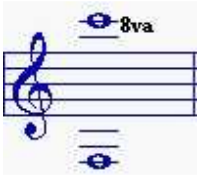
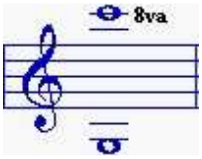
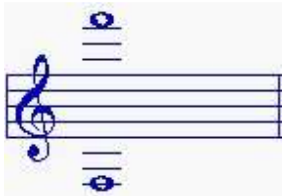
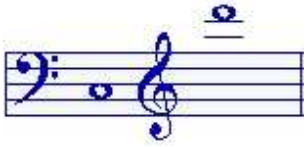
III. Percussion

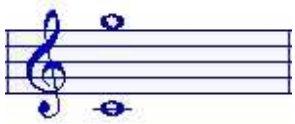
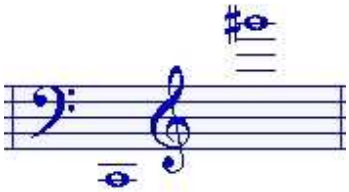
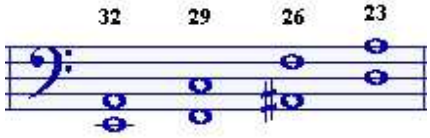
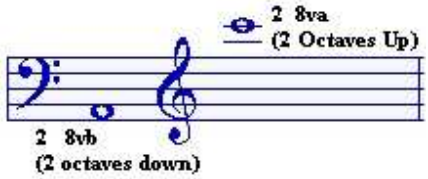
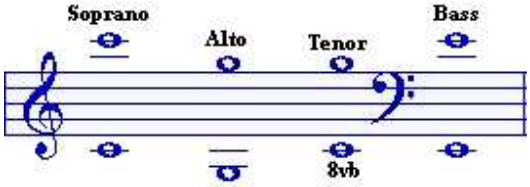
A. 1 Timpani
B. 4 Percussion

Transposition & Instrument ranges

Instrument	Key	Sounds	Transposes	Range (Instrument Note)
Violin	C	Same	None	
Viola	C	Same	None	
Cello	C	Same	None	
String Bass	C	8vb (Octave Down)	8va (Octave Up)	
Piccolo	C	8va (Octave Up)	8vb (Octave Down)	
Flute	C	Same	None	

Oboe	C	Same	None	
English Horn	F	Down P5	Up P5	
Bassoon	C	Same	None	
Clarinet	Bb	Down M2	Up M2	
Bass Clarinet	Bb	Down M2+P8	Up M2+P8	
Alto Sax	Eb	Down M6	Up M6	
Tenor Sax	Bb	Down M2+P8	Up M2+P8	
Bari Sax	Eb	Down M6+P8	Up M6+P8	

Trumpet	Bb	Down M2	Up M2	
French Horn	F	Down P5	Up P5	
Trombone	C	Same	None	
Euphonium	C	Same	None	
Tuba	C	Same	None	
Xylophone	C	8va (Octave Up)	8vb (Octave Down)	
Marimba	C	Same	None	
Bells	C	Same	None	
Vibes	C	Same	None	
Celesta	C	8va (Octave Up)	8vb (Octave Down)	

Chimes	C	Same	None	
Harp	C	Same	None	
Timani	32 29 26 23	Same	None	
Piano	C	Same	None	
Voice	Soprano Alto Tenor Bass	Same	None	

Transposing instrument

From Wikipedia, the free encyclopedia

A **transposing instrument** is a musical instrument for which written notes are read at a pitch different from sounding note concert pitch, which a non-transposing instrument, such as apiano, would play. Playing a written C on a transposing instrument will produce (sound) a note other than concert C. The concert pitch of that written C determines the key from which an instrument transposes. For example, a written C on a B♭ clarinet sounds a concert B♭. Transposing harmonia or electronic keyboards with a transpose function can also sound a different set of pitches from what is notated, but these are not usually called transposing instruments.

Contents

[hide]

[edit]Reasons for transposing

Though writing for transposing instruments entails more work for a composer or arranger, there are several reasons why instruments are transposed.

[edit]Transposition at the octave

See also octave clef.

If an instrument has a range that is too high or too low for its music to be easily written on bass or treble clef, the music may be written either an octave higher or an octave lower than it sounds, in order to reduce the use of ledger lines. Instruments that "transpose at the octave" are not playing in a different key from concert pitch instruments, but sound an octave higher or lower than written. Some instruments with extremely high or low ranges use a two-octave transposition.

Music for the contrabassoon and the double bass is written on the bass clef, one octave higher than concert pitch. Music for the guitar and, frequently, the tenor voice is written on thetreble clef, one octave higher than concert pitch. Music for the piccolo is written on the treble clef, one octave lower than concert pitch. If these instruments did not transpose at the octave many of their pitches would be written far above or below the staff, making reading comparatively cumbersome.

[edit]Historical reasons

Historically, some instruments have come to be accepted (and widely manufactured) with a certain transposition as a standard and most music written for those instruments would be transposed accordingly.

[edit]Families of instruments

Many instruments are members of a family of instruments that differ mainly in size, such as the saxophone, clarinet, flute, etc. The instruments in these families have differing ranges, with the members sounding lower as they get larger. If the music for each was not transposed to maintain the same fingerings for the same written notes, players would have to learn to read differently for each pitch of instrument (players of non-transposing instruments like the trombone or tuba have to do this anyway). As a result these instruments are transposed based on their range so that the written notes are fingered the same way on each instrument.

Instruments that transpose this way are often referred to as being in a certain "key", such as the A clarinet (clarinet in A), or the F horn (horn in F). The instrument's key tells which pitch will sound when the player plays a note written as "C". A player of a B♭ clarinet who reads a written C will sound a B♭ while the player of an F horn will read the same note and sound an F.

The flute family contains instruments with different transpositions. The standard concert flute is a non-transposing instrument with a range from middle C up about three octaves. The alto flute is a very similar instrument, but longer, and hence pitched lower, with a range starting from the G below middle C. The fingering that would produce a C on a standard flute produces the G a fourth lower on the alto flute.

The situation is similar in other families of instruments. For example, clarinets come in various pitches (A, B♭, C, E♭), with music transposed appropriately for each so that the player can maintain the same fingerings for the same written notes. For reasons of timbre or to minimize switching between different instruments, expert clarinetists sometimes use a different instrument from that for which their part calls — usually substituting the B♭ for the A or vice-versa — transposing the parts at sight instead.[*citation needed*] Advanced trumpet players may do this also, usually with the B♭ and C instruments.

In some families of instruments, the non-transposing C version had fallen into disuse; the clarinet family is one example, where only the B♭ and A members are common, but in recent years, there is a tendency to utilize the C clarinet when required. Horns are another example.

Some families containing transposing instruments:

- The clarinet family (piccolo clarinet in A♭; sopranino clarinet in E♭, D; soprano clarinet in B♭ and A; basset horn in F; alto clarinet in E♭; bass clarinet in B♭ and A; contrabass clarinetin BB♭; and several other very low clarinets)
- some members of the oboe family (oboe d'amore in A, cor anglais in F)
- the saxophone family (either B♭ or E♭)[1]
- certain brass instruments, notably the trumpet and horn.

Before valves became common about 1800, the horn could play only the notes of the overtone series from a single fundamental pitch. This fundamental could be changed by inserting one of a set of crooks into the instrument, shortening or lengthening the total length of its sounding tube. As a result, all horn music was written as if for a fundamental pitch of C, but the crooks could make a single instrument a transposing instrument into almost any key. Changing the crooks was a time-consuming process, so it took place only between pieces or movements. The introduction of valves made this process unnecessary (although Richard Wagner wrote horn parts as if crooks were still in use, evoking the tradition which was quickly becoming archaic). While an F transposition became standard in the early 19th century, composers differed in whether they expected the instruments to transpose down a fifth or up a fourth, especially when written in bass clef.

There are a few families of instruments that have instruments of various sizes and ranges, but whose music is rarely or never transposed. The recorder family is one of these. The higher members of the family (soprano and above) transpose at the octave, as do the bass instruments (bass and great bass). However, they are referred to as "C-fingered" or "F-fingered" depending on the lowest note, which is fingered the same on all sizes. A player may go from one C-fingered instrument to another easily, and from one F-fingered instrument to another easily, but switching between the two requires learning a new set of fingerings or the ability to transpose the music at sight.

[edit]Tone and sound quality

Because of tone quality issues, some C (concert pitch) instruments — the C melody saxophone, C soprano saxophone, and C soprano clarinet, for example — have declined in popularity in favor of the standard versions (B♭ soprano and tenor saxophone; B♭ and A clarinets).

It was found that sometimes instruments sounded better when built in certain keys. For instance, the C clarinet was not a very pleasant sounding instrument, nor was the D or the E♭clarinet; it was generally agreed that the B♭ clarinet was the most pleasant sounding, and for this reason was the one that remained in dominant use in the present day. This is also true of the B♭ trumpet, as well as several other instruments, such as the French horn and the trombone (which, outside the United Kingdom brass band tradition, is not treated as a transposing instrument, although its basic overtone series is B♭ or E♭).

[edit]Mechanical and physical considerations

On woodwind instruments there is one major scale whose execution involves (more or less) simply picking up each finger sequentially from the bottom to top. This is usually the scale that reads as a C scale (the major scale with no sharps or flats) on that instrument. If it is a transposing instrument,

the note written as C sounds as the note of the instrument's transposition — on an E♭ alto saxophone, that note sounds as a concert E♭, on an A clarinet, that note sounds as a concert A. The bassoon is an exception; it is not a transposing instrument, yet its "home" scale is F.

Brass instruments, when played with no valves engaged (or, for trombones, with the slide all the way in), play a series of notes that form the overtone series based on some fundamental pitch, e.g., the B♭ trumpet, when played with no valves being pressed, can play the overtones based on B♭ (although not the fundamental pitch). Usually, that pitch is the note that indicates the transposition of that brass instrument. Trombones are an exception — they do not transpose, instead reading at concert pitch, although tenor and bass trombones are pitched in B♭, alto trombone in E♭. Music for baritone or euphonium is sometimes written in bass clef at concert pitch also.

In the cases above, there is some reason to consider a certain pitch the "home" note of an instrument, and that pitch is usually written as C for that instrument. The concert pitch of that note is what determines how we refer to the transposition of that instrument.

With the exception of the bass trombone, all of the instruments in United Kingdom brass band music (including cornet, flugelhorn, tenor horn, euphonium, baritone horn, tenor trombone, and even the bass tuba) are notated in treble clef as transposing instruments in either B♭ or E♭.

[edit]On the conductor's score

In conductors' scores, music for transposing instruments is generally written in transposed form, just as in the players' parts. A few publishers, especially of modern music, provide conductors with scores written entirely in concert pitch, making the pitch relationships of the entire score easier for the conductor to see.

[edit]List of instruments by transposition

- **Instruments in C (high) — sounding two octaves higher than written**
  - Glockenspiel
  - Garklein recorder
  - Crotales
- Instruments in D♭ (high) — sounding a minor ninth higher than written
  - Piccolo in D♭
- **Instruments in C (high) — sounding an octave higher than written**
  - Piccolo

    - Celesta
    - Sopranino, soprano (descant), bass, great bass recorder
    - Handbells
    - Tin whistle
    - Xylophone

- Instruments in B♭ (high) — sounding a minor seventh higher than written
    - Piccolo trumpet (may also be tuned to A)
    - Sopranissimo saxophone (soprillo)

- Instruments in A♭ (high) — sounding a minor sixth higher than written
    - A♭ piccolo clarinet (very rare)

- Instruments in G (high — sounding a perfect fifth higher than written
    - Soprano Bugle

- Instruments in F (high) — sounding a perfect fourth higher than written
    - F trumpet
    - Descant Horn
    - Musette (piccolo oboe in F)

- Instruments in E♭ (high) — sounding a minor third higher than written
    - E♭ soprano clarinet
    - E♭ trumpet
    - Sopranino saxophone

- Instruments in D (high) — sounding a major second higher than written
    - D soprano clarinet
    - D trumpet (may also be tuned to E♭)

- **A selection of Instruments in C (unison) — sounding as written; these are *non-transposing instruments***
    - Piano
    - Vibraphone
    - Flute
    - Oboe

- C soprano clarinet (moderately rare)
- C soprano saxophone (rare)
- Alto (treble), tenor, contrabass recorder
- C Trumpet
- Bassoon
- Alto trombone
- Tenor trombone when written in tenor or bass clef
- Bass trombone
- Euphonium or baritone horn when written in bass or tenor clef
- Tuba when written in bass clef
- Marimba
- Violin
- Viola
- Violoncello

- Instruments in B♭ — sounding a major second lower than written
  - B♭ soprano clarinet
  - Soprano saxophone
  - Tenor Wagner Tuba(new notation)
  - Trumpet
  - Cornet
  - Flugelhorn
  - B♭ bass clarinet (German notation in bass clef)
  - B♭ Marching French Horn

- Instruments in A — sounding a minor third lower than written
  - Oboe d'amore
  - A soprano clarinet
  - A basset clarinet
  - A trumpet

- Instruments in G — sounding a perfect fourth lower than written
  - Alto flute
  - G soprano clarinet

    - G basset horn (obsolete)
    - Mellophone Bugle
    - Horn Bugle

- Instruments in F — sounding a perfect fifth lower than written
    - Cor Anglais
    - Horn[2]
    - F Mellophone
    - Bass Wagner Tuba (new notation)
    - Basset-horn
    - F alto saxophone (rare)

- Instruments in E♭ — sounding a major sixth below what is written
    - Alto clarinet
    - Alto saxophone
    - Tenor horn

- **Instruments in C (low) — sounding an octave below what is written**
    - Guitar
    - Bass guitar
    - Banjo
    - Double bass
    - Bass flute
    - Horn in C
    - C melody saxophone
    - C bass clarinet (obsolete)
    - Contrabassoon
    - Heckelphone and baritone oboe

- Instruments in B♭ (low) — sounding a major ninth (an octave and a major second) below what is written
    - B♭ bass clarinet (French notation in treble clef)
    - Tenor saxophone
    - Euphonium when written in treble clef (British brass band music)

    - Baritone horn when written in treble clef
    - Tenor trombone when written in treble clef (British brass band music)
    - Tenor Wagner Tuba (old notation)

- Instruments in A (low) — sounding a minor tenth (an octave and a minor third) below what is written
    - A bass clarinet (obsolete)

- Instruments in G (low) — sounding a perfect eleventh (an octave and a perfect fourth) below what is written
    - Contra-alto flute (rare)
    - Baritone Bugle
    - Euphonium Bugle

- Instruments in F (low) — sounding a perfect twelfth (an octave and a perfect fifth) below what is written
    - Bass Wagner Tuba (old notation)

- Instruments in E♭ (low) — sounding a major thirteenth (an octave and a major sixth) below what is written
    - Contra-alto clarinet
    - Baritone saxophone
    - E♭ tuba when written in treble clef (British brass band music)

- **Instruments in CC (low) — sounding a perfect fifteenth (two octaves) below what is written**
    - Contrabass flute (rare)

- Instruments in BB♭ (very low) — sounding two octaves and a major second below what is written
    - B♭ tuba when written in treble clef (British brass band music)
    - B♭ contrabass clarinet
    - Bass saxophone

- Instruments in GG (very low) — sounding two octaves and a perfect fourth below what is written
    - G subcontrabass flute (rare)
    - Contra Bugle

- Instruments in EE♭ (very low) — sounding two octaves and a major sixth below what is written
  - Octocontra-alto clarinet (very rare)
  - Contrabass saxophone (rare)

- **Instruments in CCC (super low) — sounding three octaves below what is written**
  - C subcontrabass flute (very rare)

- Instruments in BBB♭ (super low) — sounding three octaves and a major second below what is written
  - B♭ octocontrabass clarinet (very rare)
  - Subcontrabass saxophone (very rare)

[edit]Timpani

In the 17th and early 18th century, timpani were often treated as transposing instruments, as they were usually tuned to the tonic and dominant notes. These were notated as C and G, and the actual tuning was indicated at the top of the score (for example, *Timpani in A–D*). This notation style was not universal: Bach, Mozart, and Schubert (in his early works) used it, but their respective contemporaries Handel, Haydn, and Beethoven wrote for the timpani at concert pitch. [3]

[edit]See also

- Category:Transposing instruments

[edit]Notes

1. ^ The modern saxophone family is in B♭ and E♭, but there is also an *orchestral* family of saxophones in C and F: F-sopranino, C-soprano, F-alto (sometimes called mezzo-soprano), C-tenor (now called C-melody), F-baritone, C-bass, and F-contrabass. The last of these was manufactured in the 1930s.
2. ^ There are two complications with horn transposition. First, some older editions write for valved horns as if they still had crooks, and thus may change the transposition several times within a piece or movement. Second, when horn parts are written in bass clef, they may be written an octave lower than expected, transposing up, rather than down as in treble clef. In today's scores, horns always transpose down, even in bass clef; but the other notation was standard until the beginning of the 20th century."Written Vs. Sounding Pitch". Retrieved 2007-03-22.
3. ^ Del Mar, Norman (1981). *The Anatomy of the Orchestra*. Univ of California press.

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- Kennan, Kent Wheeler. *The Technique of Orchestration*, Second Edition. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970, 1952; ISBN 0-13-900316-9

hart of Sounding Range and Clefs Used

The table below shows general information about the performing ranges of particular instruments. There are variations in the type and manufacture of instruments as well as the ability of different performers. More specific information can be found in Norman Del Mar's *Anatomy of the Orchestra*; Gardner Read's *Thesaurus of Orchestral Devices*; Kent Kennan's *The Technique of Orchestration*; and Philip J. Lang's *Scoring for the Band*. If you are writing or arranging music, the best resource, in a particular case, would be the instrumentalist(s) who will be expected to perform it.

instrument	nominal key	clef(s)	written range (as 'read') middle C is C4 see legend below table	concert range (as 'heard') middle C is C4 see legend below table	comments
woodwinds					
piccolo	C, Db	treble	professional: D4-C7 amateur: G4-A6	C: 1 octave higher Db: minor 9th higher	in band music, the Db piccolo, rather than the larger orchestral C piccolo, was the mainstay until the early twentieth century, when the Db parts were gradually transposed for the C piccolo because of its stronger tone. The Db piccolo however, retains the distinction of being the first woodwind instrument to be added to the American brass bands of the mid-nineteenth century
	when writing jazz arrangements note that the piccolo is used rarely in big bands. Most saxophone players will not own or play a piccolo. Write for the instrument with discretion. [information taken from: Jazz Arranging Tutorial]				
(concert)	C	treble	professional: C4-D7		Cindy Pedder

flute			amateur: C4-C7		has written to point out that some flutes can actually play the B natural below middle C - this is achieved by using an extended foot-joint that pushes the range downwards a further semitone (from C down to B natural) - in every other regard the C flute with the low B extension follows the standard C flute fingering throughout the rest of the instrument's range
	when writing flute parts in jazz arrangements for a saxophone player, it is best to avoid extreme high or low ranges. Limiting the upper range to at least a fourth below its highest note is preferred. Remember that the low range of the flute will never be heard without amplification and the upper register will be difficult to play in tune [information taken from: Jazz Arranging Tutorial]				
alto flute	G	treble	C4-C7	a perfect 4th lower	
bass flute	C	treble	C4-C6	1 octave lower	like the concert flute in C (see comment above), some bass flutes are fitted with a low B key to extend the range downwards by one semitone without altering the fingering through the rest of the instrument
recorder	Standard convention for naming & notating recorder music				

	Recorder ranges, clefs and other useful information				
oboe	C	treble	professional: Bb3-A6 amateur: C4-E6		
oboe d'amore	A	treble	Bb3-E6	a minor 3rd lower	
English horn cor anglais	F	treble	B3-G6	a perfect 5th lower	written in alto clef at concert pitch in certain Russian scores
Heckelphone	C	treble	A3-G6	1 octave lower	
clarinet (except bass)	C, Bb, A, D, Eb	treble	professional: E3-C7 amateur: E3-F6	C: as written Bb: a whole step lower A: a minor 3rd lower D: a whole step higher Eb: a minor 3rd higher	
	many orchestra clarinet parts are often not written for Bb clarinet, and you may not have the required A, D, C, etc. clarinet. Also some passages may be present great technical problems which one does not have time to master, so one will transpose the part onto a differently pitched instrument to make the fingerings easier. The main reason for sight-transposing is that not all of us happen to own a complete set of pitched clarinets, so we have make do by transposing as we play [for playing parts on the 'wrong' size of clarinet read: How to sight-transpose clarinet parts]				
	once a favorite big band instrument, the clarinet is used infrequently in contemporary jazz arranging. Because of this, the interest and skill level of young saxophonists to double on the instrument has diminished. Most contemporary writers, writing for professional bands, continue to use the clarinet as well as other woodwind instruments to create special tonal colors when desired [information taken from: Jazz Arranging Tutorial]				
basset-horn	F	treble	C3-G6	a perfect 5th lower	
bass clarinet	Bb	treble or bass	professional: C3-C7 amateur: C3-D6	a 9th lower; a whole step lower when written in bass clef	however also read this: Bass Clarinet Transposition
	the bass clarinet is sometimes used in big band charts and is usually played by the baritone saxophone player. It provides a light feel as a bass instrument, and an interesting texture when doubled on a melodic line [information taken from: Jazz Arranging Tutorial]				
contrabass clarinet	Bb	bass	professional: C3-A6 amateur: C3-B5	an octave lower than the bass clarinet	
bassoon	C	bass and tenor	professional: Bb1-Eb5 amateur: Bb1-Bb4		low A is possible if a tube is inserted into the end of the bassoon. However, this makes low Bb unavailable.
contrabassoon	C	bass, tenor	Bb1-C5	1 octave lower	

Sarrusophone		(rare)			
saxophones (band)	Bb, Eb	usually treble	Bb3-G6	Bb soprano: a major 2nd lower Eb alto: a major 6th lower Bb tenor: a major 9th lower Eb baritone: 1 octave + major 6th lower Bb bass: 1 octave + major 9th lower	note : the Eb baritone saxophone comes in two sizes: one with a written range to low A and one with a written range to low Bb. Composers who write the low A for Eb baritone sax should be aware that it may not actually be playable if the saxophonist uses a model without an extension key
	on soprano, alto, tenor and baritone saxophones, the harmonic register (written G6-D7) may be available, depending on the player. Super high notes (Eb7-G7) should not be included without prior consultation with the player [note taken from: The Orchestra: A User's Manual]				
saxophones (orchestral)	C, F	usually treble	C3-Bb6	F sopranino: perfect 4th higher C soprano: at written pitch C tenor: 1 octave below written pitch F mezzo-soprano: a perfect 5th lower	although Maurice Ravel's 1928 orchestral work *Boléro* calls for a sopranino saxophone in F, it is unlikely that such an instrument ever existed
brass					
brass instruments generally	the range and technique on brass instruments are continually evolving, and textbooks do not keep pace with reality. Some orchestration textbooks specify the upper limit of the trumpet as written high C (for a Bb trumpet), yet composers such as Strauss and Mahler have been demanding 'concert' high Cs for nearly a hundred years. Strauss demands concert Ds in the *Alpensinfonie* and*Electra*, while Mahler demands high Eb in his 8th symphony. At the opposite end of the scale, Strauss also requires low G (3 leger lines below the bass clef stave) from the bass trombone in his *Alpensinfonie*				
French horn	F	treble or bass	professional: F#2-C6 amateur: C3-G5	a perfect 5th lower	horns may be written in a number transpositions: C, D, Eb, E, F,

					G, A alto, Bb alto, Bb basso, B (rare). Among horn players, transpositions are spoken of in terms of the Horn in F (ex. Horn in Eb is a whole step lower)
	in Mozart and Haydn´s day, the orchestra usually used two horns, first and second horns, as a pair. They would almost always play at the same time, very rarely in unison, and usually in octaves or fourths and fifths. In Beethoven´s time (and may be a tiny bit of Schubert), they began to use four horns. In fact, in Beethoven´s Third Symphony, the Eroica, there are three horns, which is a very unusual combination. Usually it´s either two (in the early classical period), or four (from the late classical period into the romantic period). The four horns are usually numbered, and first and third horn are high horns, and second and fourth are considered low horns. I think the way composers thought of it initially was as two sets of first horns and two sets of second horns. Horn players find a niche for themselves depending on whether they are more comfortable on the lower or the higher register, because the range is actually so big that they usually specialise. [information taken from: Introduction to the horn]				
	High horn specialist range (written): G3-C6 Low horn specialist range (written): F2-G5 Pedal notes (written): E2, Eb2, D2, Db2, C2 [information taken from: The Orchestra: A User's Manual]				
	key signatures are often omitted for the French horn -- the instrument most often requiring transposition! Parts for other instruments, such as the trumpet and A clarinet, are sometimes written without key signatures as well. The absence of a key signature can thus indicate either a key of C major (or A minor) or an omitted key signature. You have to determine the correct key signature from another (non-transposing) part or from the score. [information taken from: Transposition tutorial]				
Tuben Wagner tubas	Bb, F	treble or bass	Bb: C3-G5 F: F2-D5	tenor in Bb: a whole step lower bass in F: a perfect 5th lower	Tuben or Wagner tubas are played by horn players. The sounding pitch of a Bb tenor instrument playing from a part written in treble clef, should be a 9th below the written note; however, the practical realizations of hornists are not entirely consistent on

					this point. ex. Stravinsky, Rite of Spring Tuben also have parts written in E-flat (sounding a 6th lower than written) in The Ring of the Niebelungen.
trumpet (except Eb bass)	C, Bb, A, G, F, E, Eb, D	treble	professional: F#3-D6 amateur: A3-Bb5	C: as written C bass: 1 octave lower Bb: a major 2nd lower A: a minor 3rd lower G: a perfect 5th higher F: a perfect 4th higher E: a major 3rd higher Eb: a minor 3rd higher D: a major 2nd higher Flugelhorn: major 2nd lower Bb bass: a major 9th lower	for a detailed explanation of trumpet characteristics, see Del Mar, *Anatomy of the Orchestra*
	for trumpet in Bb and C, pedal notes (written): C3, B2, Bb2, A2, Ab2, G2, Gb2 [information taken from: The Orchestra: A User's Manual]				
piccolo trumpet	Bb, A	treble	F#3-G5	Bb: a minor 7th higher A: major 6th higher	sometimes written F#4-G6 Bb: sounding 1 step lower A: sounding a minor 3rd lower
Eb bass trumpet	Eb	treble	F3-C6	major 6th lower	
piccolo trombone	Bb	treble	E4-F7 (range excludes fundamentals or pedal notes)		the sopranino and piccolo trombones are even smaller and higher instruments than the soprano; they are also extremely rare. Sopranino and piccolo are pitched one octave above the alto and soprano trombones. They are called

					for in some trombone choir literature, the sopranino, for example, being used in the Moravian trombone choirs in the USA. Owing to the very high pitch of these instruments, they are played exclusively by trumpeters. [information taken from: Types of Trombone]
sopranino trombone	Eb	treble	A3-Eb6 (range excludes fundamentals or pedal notes)		the sopranino and piccolo trombones are even smaller and higher instruments than the soprano; they are also extremely rare. Sopranino and piccolo are pitched one octave above the alto and soprano trombones. They are called for in some trombone choir literature, the sopranino, for example, being used in the Moravian trombone choirs in the USA. Owing to the very high pitch of these instruments, they are played exclusively by trumpeters. [information

					taken from: Types of Trombone]
soprano trombone	Bb	treble	E3-C6 (range excludes fundamentals or pedal notes)		during the twentieth century some manufacturers made soprano trombones as doubling instruments for jazz cornet players, dubbing them slide cornets, or as a novelty, but the instrument has never been widely used or enjoyed much popularity. It rather lacks its own character and historically had little validity as it was easily replaced by the cornet or woodwind instruments and the short shifts make it difficult to play in tune. Soprano trombone slides being so short, there are often only six positions on the slide rather than seven. The soprano trombone is usually played by a trumpeter owing to the high pitch of the instrument and similar required embouchure [information taken

					from: Types of Trombone]
alto trombone	Eb	alto	A2-G5 (range excludes fundamentals, valve attachments or pedal notes)		used primarily, but not exclusively, in eighteenth- and nineteenth-century German orchestral works
tenor trombone	Bb/F	alto, tenor, bass *treble (see comment)	professional: E2-F5 amateur: E2-Bb4 (range excludes fundamentals or pedal notes)	*a 9th lower, when written in treble clef as a Bb transposing instrument	pedal tones G1-Bb1 are possible. Use of the F-trigger facilitates pitches from F2 down to C2, or B1 with the F-slide extended. *British Brass Band music for trombones in Bb is written in treble clef where the sounding pitch is a 9th below the written pitch
	top note is approximate, higher notes may be found by individual players. Pedal notes are theoretically available, but unstable and rarely used [information taken from: The Orchestra: A User's Manual]				
	tenor trombones with C as their fundamental note were almost equally popular during the mid-nineteenth century in Britain and France. Many modern tenor trombones include an extra attachment of tubing - about 3ft or 1m in length - which lowers the fundamental pitch from B flat to F. It is engaged by using a trigger or valve (these instruments are not to be confused with the three-valved valve trombone). This type of trombone is typically built with a larger bore size (0.525" or 0.547") and is known as a B flat/F trombone, F-attachment trombone, or trigger trombone. Trombones without this feature have become known as straight trombones [information taken from: Types of Trombone]				
bass trombone	Bb/F	bass	professional: Bb1-Bb4 amateur: Bb1-F4 (range excludes fundamentals or pedal notes)		
	top note is approximate, higher notes may be found by individual players. Pedal notes: Bb1, A1, Ab1, G1, Gb1, F1, E1 [information taken from: The Orchestra: A User's Manual]				

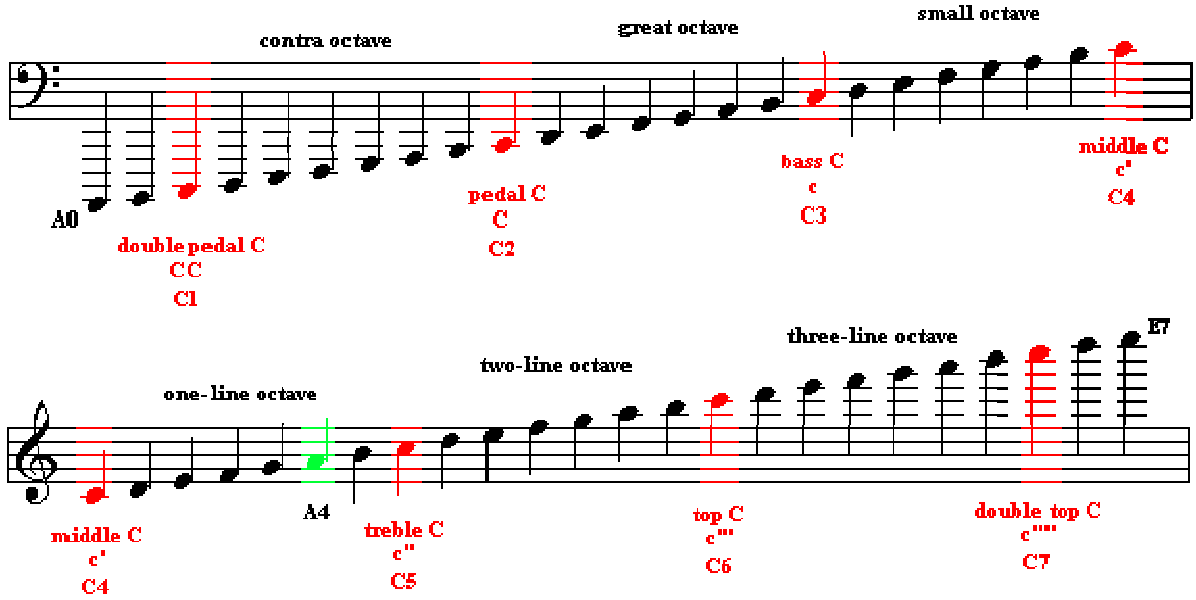
contrabass trombone	various	bass	Ab0-C5		although the name implies an octave transposition - as in contrabassoon or contrabass - the contrabass trombone plays at concert pitch, no transposition. It is primarily called for in a few select works of Wagner, Strauss, Schoenberg and Puccini. Instruments are built with fundamental tones of F, E-flat, BBb, and others in first position. The shape and design varies from straight with slide handle extension to double valve and double slide models. The choice of which instrument is most appropriate in any given situation is the players choice
tuba	Bb, Eb	bass	professional G0-C5 amateur: E1-C4		orchestral tubas play at concert pitch regardless of the pitch of a particular instrument in the British brass band tradition, Eb and Bb tubas are written in treble clef. The

					Eb tubas sound 1 octave + a 6th below the written note while the Bb tubas sound 2 octaves lower than written. The Bb tubas are technically BBb (double-Bb) tubas.
	extra notes on the bass tuba: Db1, C1, B0, Bb0 sometimes available [information taken from: The Orchestra: A User's Manual]				
tenor tuba euphonium	Bb	bass or treble, sometimes tenor	professional: Bb1-F5 amateur: E2-Bb4	Bb: a whole step lower in bass as a transposing instrument, a 9th lower in treble.	this instrument should not be confused with the Bb tenor tuba (Tuben) played by horn players. When writing for this instrument in bass clef, it is advisable to notate at concert pitch. Tenor clef may also be used. In orchestral works prior to the mid-twentieth century, the euphonium written in bass clef frequently employs B-flat transposition
percussion					
timpani	various	bass	20": F3-C4 23": D3-A3 26-25": Bb2-F3 29-28": F2-C3 32-30": D2-A2		in some cases of older notation, timpani is written in C with the root pitch indicated (ex. Timpani in D)
crotales	C	treble	C4-C6	1 octave higher	
flexatone	E	treble	E5-A6	as written	due to the nature of the instrument all

					pitches are approximate
xylophone	C	treble	G4-C7	1 octave higher	
marimba	C	treble, bass or grand staff	professional: (C2 to A2)-C7 amateur: C3-C7		some models of marimba have extended lower ranges
glockenspiel	C	treble	G3-C6	2 octaves higher	when notes exceed the range of the instrument the effective transposition is 1 octave higher
vibraphone	C	treble	F3-F6		
chimes	C	treble	C4-G5		individual chimes may extend the range of a standard set of chimes
guitar	C	treble	E3-E6	1 octave lower	
bass guitar	C	bass	E2-E5	1 octave lower	two lower notes (C2 and the B1 below it) are associated with 5-string electric basses and acoustic basses (C2 only) that have a special extension on the E string
	when writing jazz arrangements it is best to be conservative in this extended range, taking into account that the next band that wishes to play the chart may not have a bass player with an instrument capable of playing it in the register it was written. [information taken from: Jazz Arranging Tutorial]				
banjo	C	treble	C3-A4	as written (tenor sounds 1 octave lower)	the five-string banjo is also frequently used, and this has various tunings depending upon the style of music being played [information taken

					from: The Orchestra: A User's Manual]
mandolin	C	treble	G3-B6	as written	strings are tuned in pairs
harp	C	grand staff	Cb1-G#7		
keyboard					
piano	C	grand staff	A0-C8		
	some pianos extend downwards by a further 5th while some upright pianos only reach up to A7 [information taken from: The Orchestra: A User's Manual]				
celesta	C	grand staff	C3-C7	1 octave higher	
harpsichord	C	grand staff	F1-F6		the range of historical instruments varies widely
harmonium	C	grand staff	F1-F6		Harmonium ranges do vary greatly from instrument to instrument [information taken from: The Orchestra: A User's Manual]
organ	C	grand staff plus a third staff	keyboard range: C2-C7 pedal range: C2-G4	as written	organ music is notated on three staves, two for the hands and one, the lowest, for the pedals
accordion	C	grand staff	F2-F6	as written	this is the range of the 41-keyed concert accordion. Some accordions have fewer keys, 25 being the minimum [information taken from: The Orchestra: A User's Manual]

strings					
violin	C	treble	professional: G3-A7 amateur: G3-G6	no transposition, excepting scordatura	
viola	C	alto, treble	professional: C3-E6 amateur: C3-C6	no transposition, excepting scordatura	
cello	C	bass, tenor, treble	professional: C2-C6 amateur: C2-G5	as written, but in treble clef may sound 1 octave lower (for example, Beethoven)	
double bass string bass	C	bass	professional: C2-C5 (also A2, B2) amateur: E2-G4	1 octave lower	double basses occasionally play in tenor or treble clefs (rare)
	some basses have a fifth string which is tuned below the E string (B in Europe, C in the US). Some four-string basses have an extended fingerboard and the longer fourth string can extend the E string down to the C below. This note is identical to the bottom note on the 'cello, but, of course, it sounds an octave lower. This arrangement is particularly convenient when basses and celli are playing the same part. When writing for a professional orchestra you can be certain that the bass section will have some basses of one of these types, but when writing for amateur orchestra, you should consider, if you would like a note below low E, what the alternative might be if the bass section cannot play it				
voices					
soprano	C	treble	coloratura: C4-Eb6 lyric: Bb3-C6 dramatic: Ab3-C6 mezzo: G3-Bb5 amateur: C4-A5	no transposition	
alto	C	treble	contralto: F3-F#5 amateur: F3-D5	no transposition	
tenor	C	treble (open score) bass (short score)	countertenor: G3-F#5 lyric: C3-C5 dramatic: C3-Bb4 amateur: C3-A4	1 octave lower in treble as written in bass	
baritone	C	bass	lyric: A2-G4 dramatic: A2-G4 bass: F#2-E4 amateur: G2-E4	no transpostion	
bass	C	bass	cantante: F2-F4 profundo: Db2-D4 contrabass: Bb1-G3 amateur: E2-D4	as written	
the information in this table is drawn from many sources including Ranges of Orchestral Instruments produced by the Symphony Orchestra Library Center					


contra octave
great octave
small octave
A0
double pedal C
CC
C1
pedal C
C
C2
bass C
c
C3
middle C
c'
C4
one-line octave
two-line octave
three-line octave
E7
middle C
c'
C4
A4
treble C
c''
C5
top C
c'''
C6
double top C
c''''
C7