Notes:

The Contemporary Arranger
Don Sebesky

It is not enough to know if an arrangement works – or not – you must be able to know why

Michael Morangelli The Reel Score, LLC www.thereelcore.com

Table of Contents

1 BASICS

Four Factors essential in construction of a good arrangement: Balance / Economy / Focus / Variety

I BALANCE

A. TONAL BALANCE

1 Proper distribution of tones
2 Achieves best possible sound with any combination of instruments

B. FORMAL BALANCE

1 Melody

- Should restrict to as few melodic ideas as possible
  - : Tune itself
  - : Arranger composition in contrast to tune
- Try to vary an already existing motif before injecting a new one
  - : Provides unity
  - : Eliminates confusion

2 Instrumentation

- Distribution of instrumental sounds has a great influence on formal balance
- Leave room for development and surprise
- Distribute instrument colors judiciously throughout the arrangements

3 Time

- Length will make specific demands on all basic elements
- Will (and should) have a profound effect on the formal balance of the score
- Arranger should be aware of any time restrictions if present

C. ECONOMY

1 Is the art of omitting anything from the score not absolutely necessary

- Every note in an arrangement should be there for a purpose
- Avoid sticking with only 'tried and true' to maintain a sense of experimentation
- Always be prepared to cut something from the score if necessary

2 Sometimes Less is More

D. Focus

3 Points within an arrangement where individual element is more important than any other

- Human ear is capable of interpreting a given input and unconsciously assigning varying degrees of importance
  - : However improper focus can lead to confusion because of this capability
  - : Causes listener to lose interest
- Points of focus are never static – job of the arranger is to manipulate these points
- Improper recording can also cause a loss of focus

E. Variety

1 Timbral

- The art of maintaining listener interest through constantly changing instrumental combinations
- Called tone color or timbral variety
- Need to find best suit for your personality timbral variety
  - : Formal list of instrumental combinations
  - : Start score with sketch and fill in instrumentation later

2 Harmonic

- Variation in harmonization that arrives at same resting place
- Utilize harmonic substitutions

2 WIND INSTRUMENTS

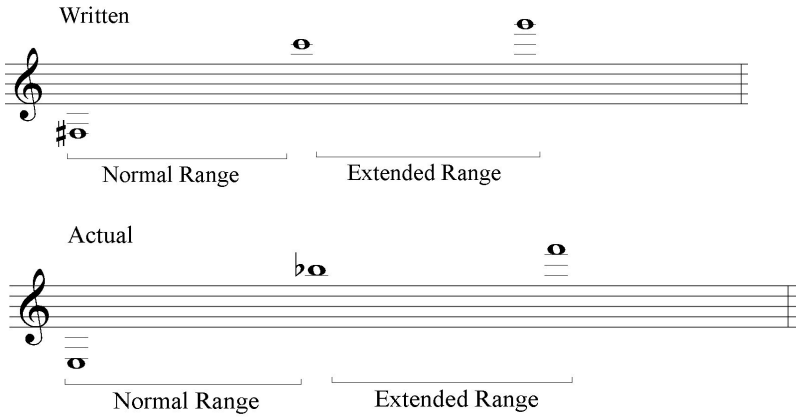
I BRASS

A. EASIEST COMBINATION TO WRITE FOR

1 All Brass instruments blend well together in almost any combination
2 Tremendous power and dynamic flexibility in every register
3 Easy to record (with exception of French Horn)

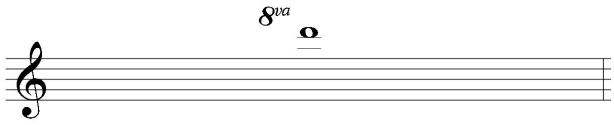
B. TRUMPET

1 Transposing instrument in Bb written a whole step higher than actual concert sound



2 All Tpt players are capable of normal range

- Only the very strong lead player is capable in extended range
  - : Specialists can go as high as



  - : Tpt rarely called upon to play higher than normal range

3 As a separate section

- Sounds best in unison, octaves, or close position voicings

4 Can be effective played open or muted

- Common mutes
  - : Straight mute
  - : Cup mute
  - : Harmon mute
  - : Felt had
  - : Plunger
- Special mutes
  - : Solo tone
  - : Bucket
  - : Buzz mute
  - : Derby

Special mutes must be requested in advance for a recording session

5 Mutes

Derby Mute

Plunger Mute

Solo Tone Mute

Bucket Mute

Cup Mute

Harmon Mute

French Horn Stopping Mute

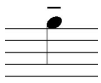
Tuba Straight Mute

French Horn Straight Mute

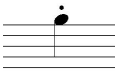
Straight Mute

- All mutes make the instrument quieter
- Primary purpose is to alter the instruments tone color for effect
- In improvised styles (Jazz), the player will often make decision about mute usage
- In ‘concert’ music the use of mutes is notated specifying when to place and remove mute
  - : Must give ample time to either place or remove mute in the musical passage
  - : Notated with ‘mute’ and ‘open’ or ‘con sordino’ and ‘senza sordino’
- Trombone mutes which require hand movement to open and close or to hold in place on the instrument precludes certain note choices
- Use of the triggers on trombone also restrict mute usage

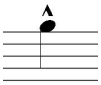
6 Articulation



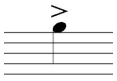
Full Value of note



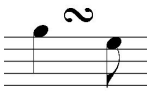
Short (staccato)

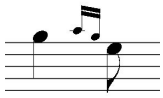


Forceful attack on a down beat

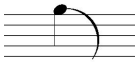


Forceful attack on an up beat

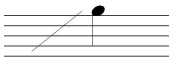


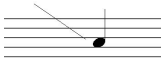


Appoggiatura



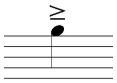
A short drop or fall off



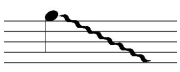


Rip or Lip Gliss which is a short undefined downward / upward thrust terminating on a notated pitched note

Note intentionally played flat and scooped or bent up to pitch

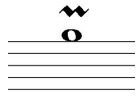


Forceful attack and given full note value

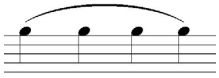


Long Drop

* Short & Long Drop are often used interchangeably so the desired effect should be clearly designated



A shake – should be clearly indicated as speed may vary



Slur indicating notes should be played as a smoothly connected line usually on one breath

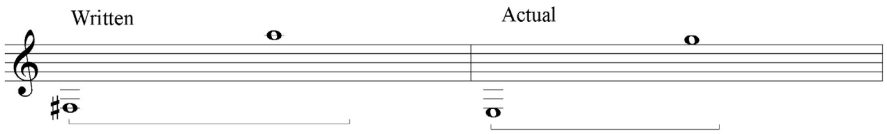
C. CORNET

1 Same transposition, range, and flexibility as Trumpet

2 Tone is mellower than Tpt and a bit 'withdrawn'
3 Useful for subtle solo passages rather than concerted brass ensemble chords

D. FLUGELHORN

1 Pitched in Bb but with less top end range

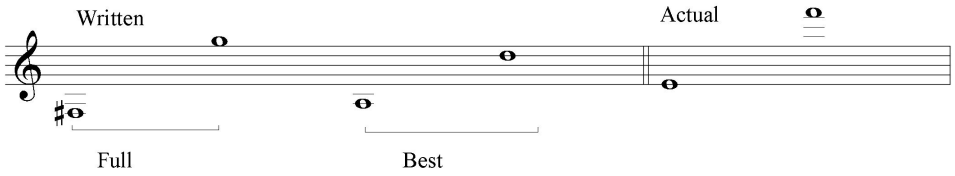


2 Projects a warm intimate sound effective as a solo obbligato or in unison
3 Never muted always played open
4 Voiced in clusters over Trombone or Baritone Horn is a very successful recording sound (especially with no vibrato)
5 Avoid passages over ***mf*** as loses charm / effectiveness and can encounter intonation problems

E. B FLAT PICCOLO TRUMPET

1 Sometimes referred to as 'Bach Trumpet'

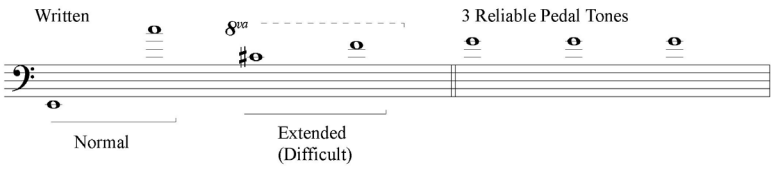
2 A small high-pitched member of the trumpet family
3 Useful for special Baroque or Medieval colors
4 Range



F. SLIDE TROMBONE (TENOR)

1 A non-transposing Bass Clef instrument

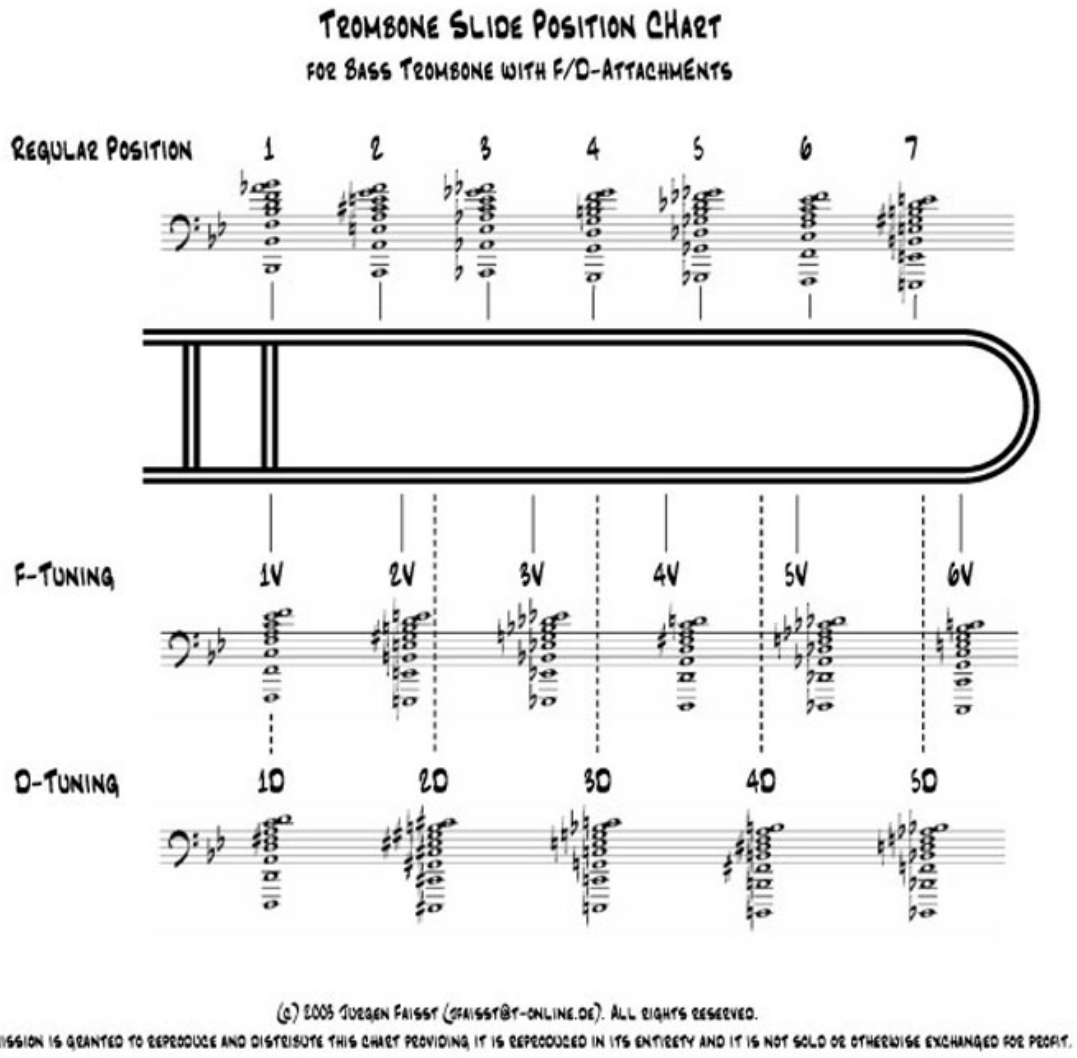
2 Capable of producing every dynamic shading from softest *ppp* to loudest *fff* in every register
3 Range and Pedal Tones



4 There are 7 slide positions each capable of producing a complete harmonic series based upon he lowest note in that position

- Some notes in each position are either difficult or faulty intonation
- Difficulty between notes only in I or II position and notes only available in VI or VII position due to distance player has to move slide
- Gliss is not possible between all notes

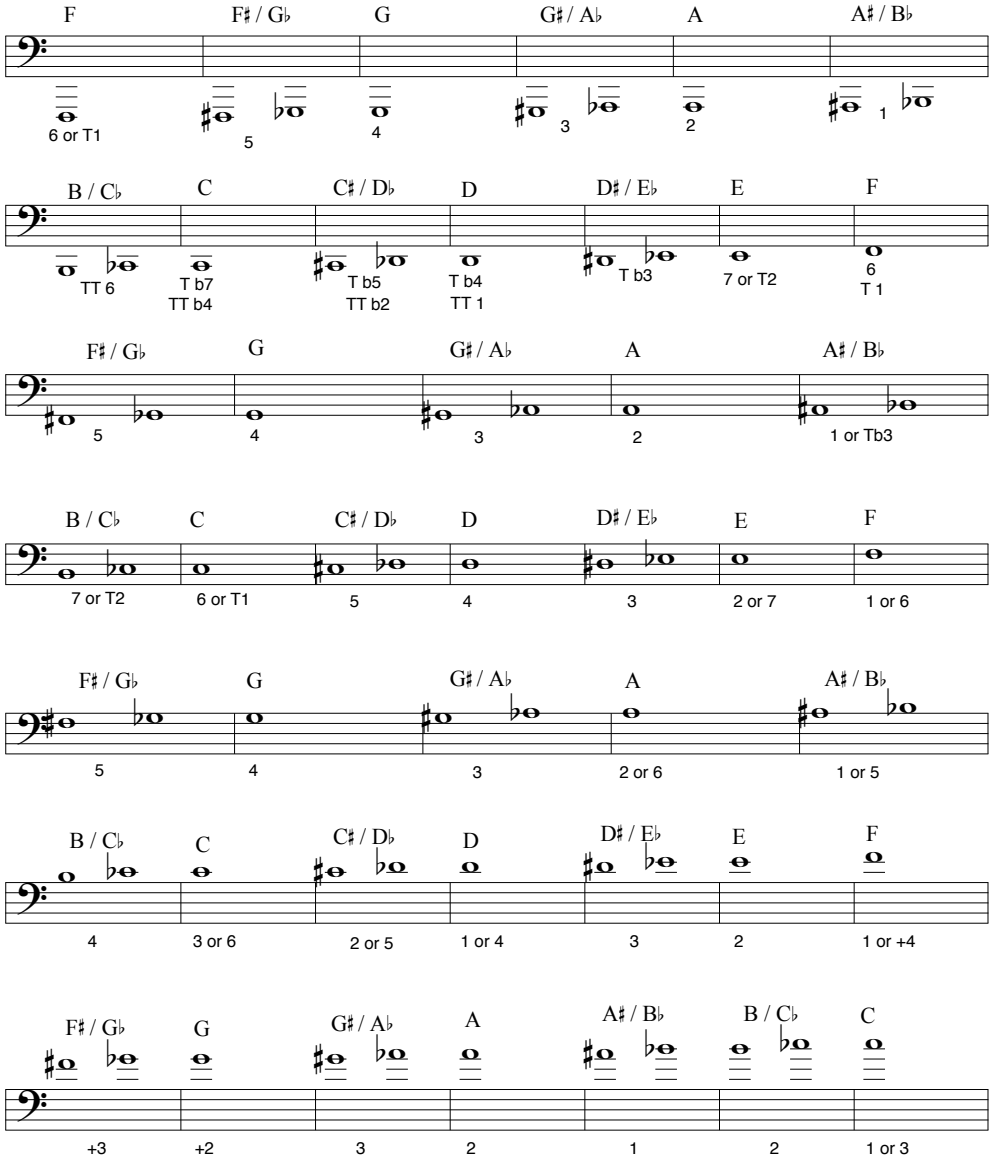
5 Trombone Slide Position Charts



Lowest Note	Change from Open or 1st Position Slide	Slide Position	Valve Combination
Bb	----------	1	Open
A	1/2 step lower	2	2
Ab	Whole step lower	3	1
G	Whole + 1/2 lower	4	1+2 (or 3)
Gb	2 Whole steps lower	5	2+3
F	2 Whole steps + 1/2 lower	6	1+3
E	3 Whole steps lower	7	1+2+3

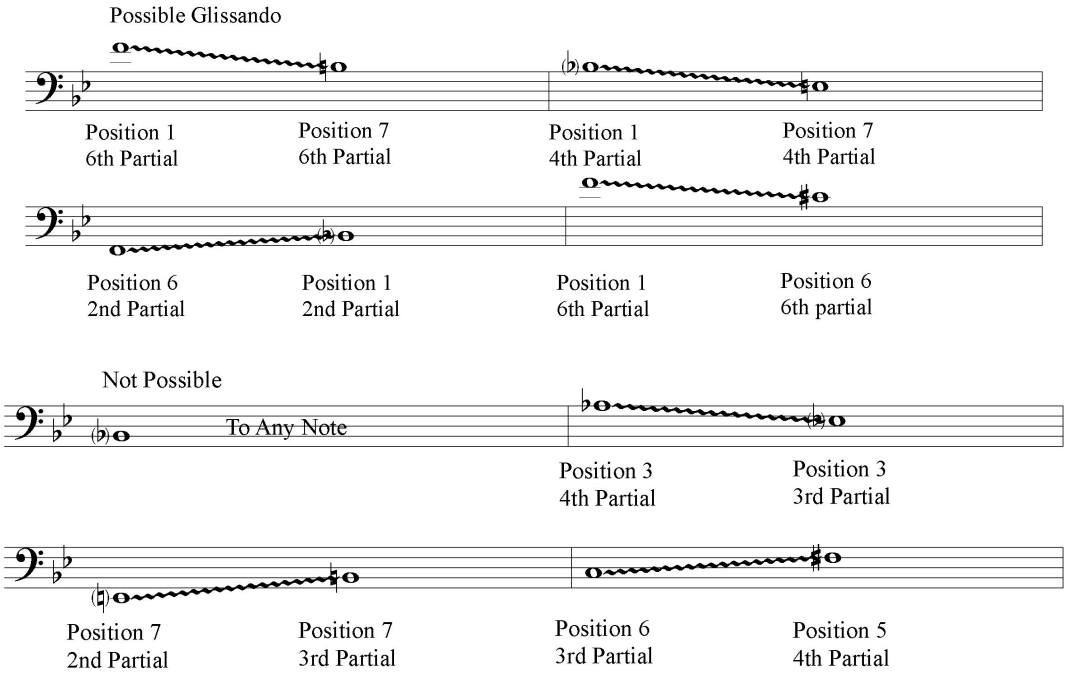
Slide Position Chart

T=F attachment
TT=F and D attachments



6 Trombone Gliss

- These must be between notes on the same partial
- To find partial number use the 1st chart above (with F/D attachments)
  - : Count up from the fundamental note (lowest in each section) the note just above the fundamental is the 2nd partial, the next above is the 3rd partial
  - : Carrying across, the gliss is possible across the slide positions providing they are on the same partial in each slide position



G. Valve Trombone (Tenor)

1 Theoretically capable of producing the same results as the slide trombone

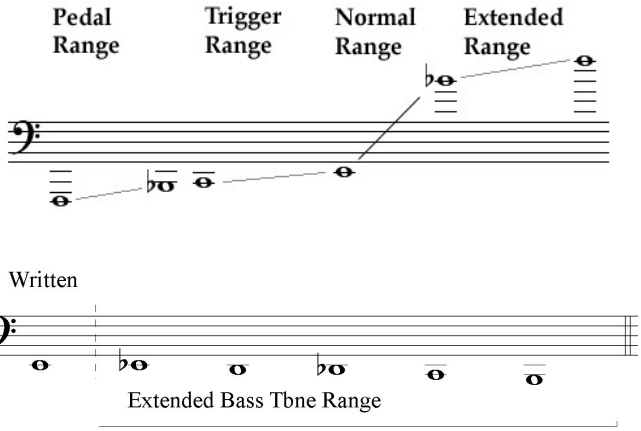
- Exception of Glissandos
- Generally lacks bite and power of slide trombone (especially in the lower register)

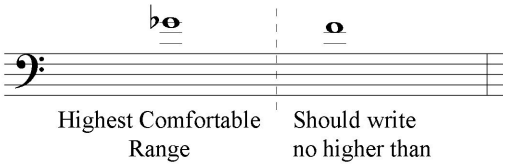
H. Bass Trombone

1 Constructed with additional tubing available via left hand triggers

- Trigger eases difficulty in playing notes between I & II and VI & VII slide positions

2 Produces the tones between lowest note of the Tenor Trombone range and the Pedal Bb





3 Normal role is at bottom of a section or ensemble
4 Larger bore gives instrument great depth and extreme power in lower register
5 All pedal tones are available down to Low E
6 Playing the lowest normal register (F to Pedal Bb) gives a brass section a powerful and biting attack
7 Can be very effective is a solo role providing a novel color (especially when supported by strings)
8 Trombone in section

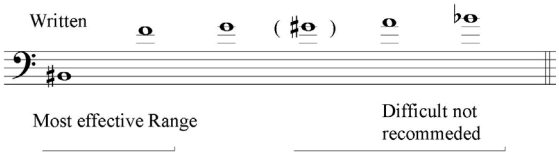
- Sound excellent in unison and octaves
- Equally sonorous in open or closed position voicings
- Common mutes
  - : Straight mute
  - : Cup mute
  - : Felt hat
  - : Plunger
- Additional mutes
  - : Harmon mute
  - : Solo tone mute
  - : Bucket mute
  - : Derby mute

Additional Mutes must be requested in advance for recording sessions

I. BARITONE HORN

1 Common double for trombonists

2 Usually featured in marching and concert bands
3 Range is identical to that of the trombone



4 Projects a less brassy somewhat ‘soulful’ sound
5 In solo obbligato mode creates a wistful ‘sad clown’ feeling
6 Section of baritones can be very mellow

- Register and volume must be carefully controlled to avoid intonation problems

J. EUPHONIUM

1 Smallest member of the tuba family
2 Has approximately same sound as baritone horn but constructed differently
3 Has two separate bells which produces slightly different tone colors
4 Four valves instead of three
5 Provides a tonal compass identical to that of the bass trombone

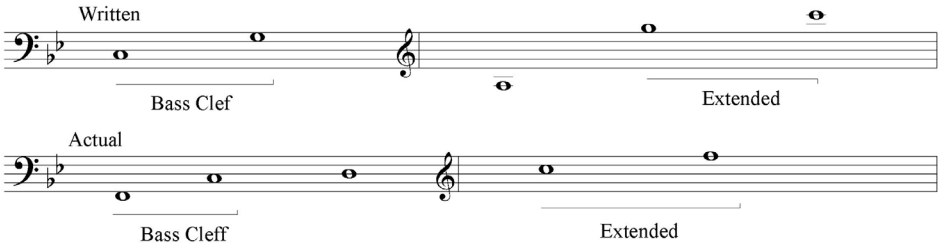
K. FRENCH HORN

1 Difficult and unpredictable instrument

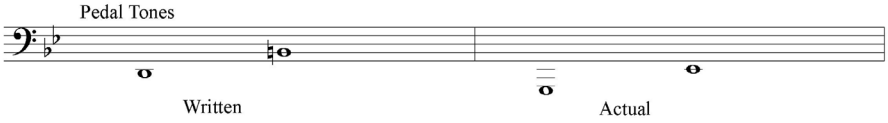
- Conical bore does not project a 'pointed' sound like trumpet and trombone
  - : Sound is spread and diffused giving a unique color
    - – No other instrument creates a sound so haunting and melancholy
- Spreading effect also makes horn 'speak' a little late
  - : Creates problem in section with other Brass in highly syncopated or staccato passages
  - : Some horn players with Jazz experience have learned to compensate and adjust in this circumstance
- Harder to hear in loud ensembles
  - : Tpt / Tbne playing *mf* or louder is approximately twice the power of the French Horn
  - : Acoustical properties of horn can create sympathetic vibrations in the recording studio

2 Transposing instrument in F

- Sounds a P5th lower than written
- Most note are written in treble clef
  - : Bass clef used for those notes which sound below 'G' ('C' concert)
  - : Arranger will only change clefs if passage is long enough to justify it



- Pedal tones written below low ‘C’ (Concert ‘F’) are possible
  - : Practical use is limited to isolated and long held chords
    - – Usually in final cadence
    - – Arranger wants a ‘pure’ horn sound to pervade the entire voicing



3 Unique in that sounds best when played with no vibrato

- Extremely valuable in solo obbligato voice in any surrounding
- Unison FrHrn section (2 to 4 voices) can be very effective and dramatic (especially in *f* or *ff* in high register)

4 Blends well with all Woodwind instruments

5 Effective when combined with low Strings

6 ‘Spread’ effect can create a kind of ‘glow’ over a chord voiced for horns

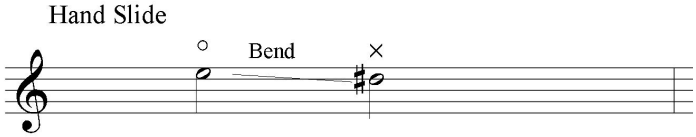
- Sounds complete & self-sufficient even when all notes of chord are not being played
  - : Especially in rich middle register
  - : Incomplete voicing for 3 horns very useful in recording situations demanding a light and uncluttered feeling
  - : In arrangements featuring Strings the incomplete 3 Horn section can add contrast without adding weight
    - – These are 5-3-7 omitted root voicings
    - – Should maintain a M6th or m6th between top and bottom voices
    - – Idea is to maintain a degree of aural distance with String Bass
    - – Rarely descend lower than written ‘G’ below staff (‘C’ concert)
    - – Allows horn sound to breath

7 Effects

- Stopped tone
  - : Player uses hand inside bell even when playing normally (Open)
    - – Limits vibration of the bell
    - – Corrects some inconsistencies in intonation
  - : ‘Stopping’ is the hand inserted deep in the bell completely blocking the air flow
    - – Effect is indicated by writing ‘+’ over the note
    - – Arranger indicates ‘+’ at start of long passage if required and the ‘Open’ (‘O’) when ended
  - : Stopped horn sound is vague and distant in quality
    - – More metallic and edgy sounding if the horn is blown extremely hard while stopped (causes bell to vibrate)
    - – Indicated by writing ‘brassy’ or ‘nasty’ in addition to stopped horn indication
    - – Sound is similar to trumpets in harmon mutes or trombone in tight plunger
    - – Can be used with them in punctuated passages
    - – Resulting effect is highly dramatic and should be used appropriately
    - – Also achieved with the ‘ball’ mute (especially in registers where hand stopping can cause intonation problems
- Half-stopped
  - : Half position with hand halfway between normal open and stopped tone
  - : Indicated with ‘x’ over note
- These techniques alter the pitch of the horn
  - : Full stop raises pitch 1/2 step
  - : Half stop lowers pitch 1/2 step
- Stopping demands a great expenditure of energy by the player
  - : Must blow *fff* to produce a passage in *mf*
  - : So must giver player ample space to rest
- Sound of horn can also be altered with use of the straight mute
  - : Produces a mellow sound resembling the trombone with a cup mute
  - : The two instruments can be combined readily
  - : Generally does not alter the pitch of the horn
    - – Preferable for passages in lower register (below written middle ‘C’)
    - – In this register stopped tones are unreliable

- Half Muted
  - : Achieved by inserting the straight mute partially into bell
  - : Used primarily in the high register in very soft passages
    - – Enables player to blow a little harder than normally
    - – Maintains a delicate and controlled sound
  - : Bend or Hand Slide
    - – Played at fairly soft volume in middle to high register
    - – Achieved by blowing note with normal open sound and inserting hand in bell until pitch slides down 1/2 step

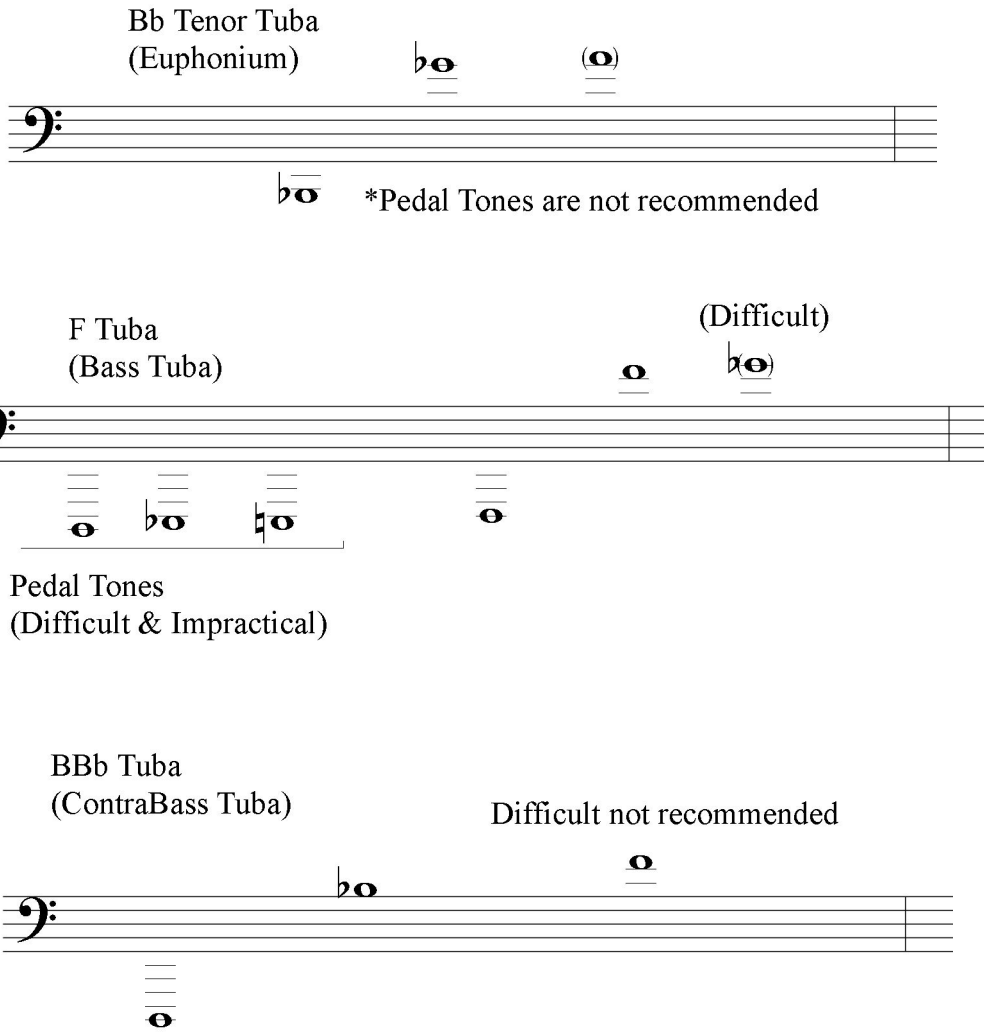
'Bend' is written to avoid confusion - that 2nd note is the result of a hand slide and not a fingered pitch



  - : Possible in reverse but not as satisfactory as open tone in naturally louder than half step pitch at beginning of the reverse hand slide
- Lip Gliss or Rip / Drop or Fall Off
  - : Extremely exciting sound in unison section
  - : Lip Gliss is usually followed by the Drop or Fall Off

L. TUBA

1 Non-transposing instrument in bass clef
2 Comes in various sizes
   - Bb (tenor), Eb, F, C, BBb
   - Most often used is the BBb



3 Can be muted with a large cone-shaped mute

- Enabling it to blend surprisingly well with woodwinds

4 Because of large bore the sound of the instrument is round and slightly spreading (similar to French Horn)

5 Block voicing of 4 horns and Tuba is very effective for ballad melodies

6 When used as the bottom voice in mixed brass ensemble the 'spread' sound permeates the entire voicing

- Gives it an overall smoothness
- Opposed to the more biting edge which results when Bass Trombone or Bari Sax is used

7 More flexible than usually realized (depending on Tuba used)

- Capable of intricate passages, 16th note runs, trills, and wide leaps
- Successfully used in Jazz recordings (Birth of Cool, West Coast Jazz)

II BRASS COMBINATIONS

A. BASIC RULE FOR VOICING ANY COMBINATION

1 Determine the kind of overall sound and feeling which best serves the needs of the passage you are scoring

- Big / powerful ← → Light / intimate
- Tight / pointed ← → Soft / mellow
- Horizontal emphasis ← → Vertical emphasis

2 Combine the instruments available to best achieve your desired objective

B. APPLICATION

1 8 Voices (4 Trumpet & 4 Trombone [Les Brown])

- Keep each voice and line as melodic as possible
- Separate section of each is voiced to sound complete within itself in addition to contributing to the overall sound of the Brass section itself
- 1st Tbne doubling lead Tpt ensures a brilliant brassy sound
  - : Effective with strong and rhythmic music
  - : Can be too overpowering in ballad and soft backgrounds and is generally avoided
- Tbne in close position doubling Tpts at the octave will ensure maximum brilliance and mobility
- Bass Tbne not necessary to play chord roots in swing passage
  - : String bass is strong enough to fulfill this function
- With semi-open voicing the effect would be to 'ground' the ensemble
  - : Distracts from the brilliance and mobility so important to Jazz writing
  - : Save open voicings for the climax where added weight would be welcome
- Once the line is doubled do not noticeably interrupt or terminate the line unless character or sound of the music changes
  - : Disturbs the continuity of the line
  - : Frustrating for the lead Tbne to weave in and out of the melody
  - : If a good reason exists for interrupted doubling an equal weight instrument should pick up the line at the point of interruption
- Change from close to semi-open
  - : Incomplete chord utilized to ensure best voice leading
  - : To bring out best resonant quality of a chord
  - : To prepare the ear for full-open voicing
  - : Reinforce a wide melodic leap of the lead line
    - – Move all voices in conjunction with lead voice
    - – Gives overall ensemble a feeling of togetherness

- Contrary motion provides temporary relief from parallel motion
- Muted Tpts (harmons) in close position with *exact* doubling in Tbnes at octave in open voicing with guitar underneath playing melody in low register

    : Beautiful sound for 8 brass
    : Especially effective in slow to medium tempos

2 10 Voices (5 Trumpet & 5 Trombone [Stan Kenton])

- Extensive use of clusters

    : Inner density provided by clusters creates a dynamic tension
    : This dynamic tension is a characteristic of the Kenton sound

- Cross voicing only necessitated by voice leading
- 5 Tpts allows lead player to rest yet maintain complete chordal voicing
- Separating the BsTbne from the section protects vibrancy of passage and preserves the BsTbne sound

3 Added 4 French Horn Section and 1 Tuba

- These are 'added' to other brass

    : Provides extra interest and emphasis
    : Does not affect the completeness of the voicing in rest of ensemble
    : *Must* take into consideration characteristics of the instruments

        – Short phrasing not precisely duplicated by FrHrns

            + Due to 'spreading' effect
            + Disturbs clarity of overall ensemble

        – Some effects (scoop effects) are not possible with FrHrn
        – Counter line in unison is effective
        – Some fast rhythmic figures not possible due to FrHrn's 'speaking' late

    : Placed in over-lapping voices they maintain their identity as separate section while contributing to overall sound

- Make sure relationship between Tpt & Tbne makes FrHrn addition valid

    : Octave between Tpts & Tbnes make FrHrn addition unnecessary
    : May have to compensate for relative volumes between FrHrn and rest of section

        – FrHrn has half the strength of Tpts or Tbnes at *mf* volume
        – Compensate by doubling FrHrns two to a voice (reduces voicing to 2 notes)

- In climatic events usually want as big & resonant sound as possible

    : Split to two voices
    : Watch internal resonances

        – Within FrHrn section
        – With FrHrns & Tpts
        – Tbne & Tuba playing complete chord

- Tuba is used sparingly
  - : In those places where its distinctive sound will reinforce the line
  - : Or provide necessary power on low chordal roots

4 8 Voices (3 Tpts 3 Tbnes 2 FrHrn)

- Voicing is compressed
  - – No notes omitted (except for Root)
  - – Produces a very exciting sound
- Larger group comparison
  - : With omitted notes produces a mellower & less severe overall sound
    - – Pure triads in tpts
    - – Dominant 7^{ths} & 9^{ths} in tbnes
    - – Allows for more internal melodic motion
    - – FrHrn in unison

Excellent voicing for strings also

- In general when scoring higher chordal partials (11^{th} 13^{th})
  - : 3^{rds} & dominant 7^{ths} should be placed in lower middle register
    - – Most resonant in this placement
    - – Can exert influence over entire ensemble voicing
  - : Save upper register for Major 7^{ths} , 9^{ths} , 11^{ths} , 13^{ths} to ensure maximum brilliance
  - : Omit 5^{th}
    - – Least important tone of higher number chords
    - – Can actually weaken overall resonance
    - – Should be omitted in very large ensembles

5 5 Voices (3 Tpts 2 Tbnes)

- Flexible voicing close and open as necessary
  - : Individual instrument range use drop voicing if necessary
  - : Set up for approaching chordal requirement
- Cross voicing if required
  - : Maintain doubled melody line
  - : Adjust doubling at dividing line between two phrases
    - – Masks the change in voicing
    - – Easier on the listener
- At cadences, the Root can be handled by the arco bass
  - : Leaves full voicing (omitted Root) for the 5 Brass
  - : 3^{rd} of chord is placed in higher middle range
    - – Maximizes brilliance
    - – Solidifies chords intensity

6 4 Voices (2 Tpts 2 Tbnes)

- Main objective is to produce as big and full sound as possible with only 4 horns
- Open voicing with notes directly under lead line dropped an octave
  - : If this second line is not dropped tbnes would be consistently in high register
    - – Difficult and tiring
    - – Contrast and intensity between tbnes in high register and tpts in middle to upper middle could noticeably distort overall sound

NB: Unless you are striving for an unusual effect with intentionally unbalanced voicings *the intensity of the lower parts should not exceed that of the higher ones*

- Compensate to create an illusion of fullness
  - : Uses of octave & unison passages
  - : Avoid contrary motion between tpts & tbnes
    - – Would sound forced and unnatural
    - – Use parallel motion
- Omission of 3rd & 7th in higher number chords
  - : 3rd frequently omitted in these chords
  - : Creates an illusion of a larger ensemble

III WOODWINDS

A. HISTORY

1 Average wind player of the 40's & early 50's would double

- Saxophone and clarinet
- Additionally with some on flute

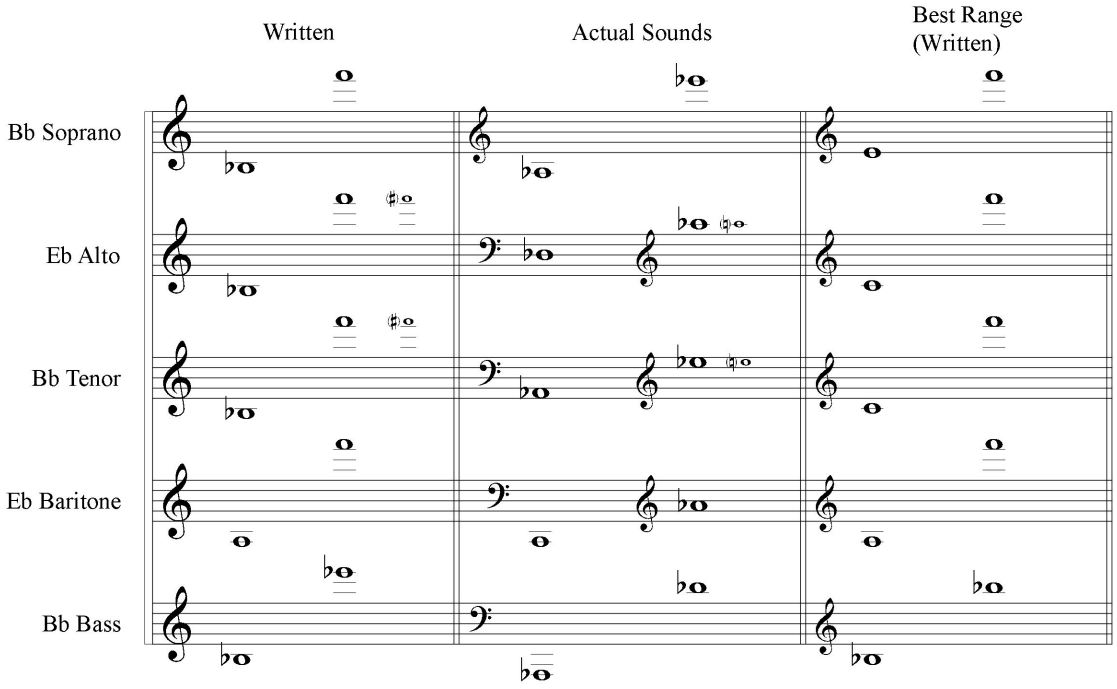
2 Studio recording 'standardized' ensemble of brass and saxophones

- Except for occasional addition of strings
- Occasional exotic reed colors (double reeds)
  - : C. Parker included oboe on Parker With Stings album
  - : Kenton Innovations orchestra
- 1952 Eddie Santer & Bill Finegan tried adventurous arrangements for multiple reed doublings (flutes, piccolos, oboes, English horn)
- Things did remain stable till Mancini's Peter Gunn score (with flute consort in unison)

- As a result contemporary woodwind players are expected to double on multiple reeds
  - : Soprano, alto, tenor, bari saxes
  - : Bb clarinet, Bass clarinet
  - : All flutes
  - : With some including oboe and English horn

B. SAXOPHONES

Saxophone Ranges



* Through the use of special 'false fingerings' the extreme high registers of all the saxes can be extended – producing tones a 5th or even a 6th higher than indicated (these notes are generally unreliable and not usable in section parts

* Late model altos and tenors are equipped with a high F# key

*May encounter a bari without the low A (C concert)


Straight & Curved Soprano


Alto


Tenor


Baritone


Bass

1 Soprano & bass saxes are seldom used in a sax section

- Soprano used as solo Jazz instrument (J. Coltrane)
- Bass sax originally used for bass notes in Dixieland ensemble
  - : Most often heard in that context
  - : Is a cumbersome instrument with a comical character in low register

2 Sax Section

- 3 Horn (Alto, Tenor, Bari)
  - : Sounds excellent in unison especially softly in ‘subtones’
    - – Texture of unison line will become smoother and more unified with each addition all voice
    - – This is particularly noticeable with woodwinds
  - : Subtone
    - – Beautiful effect
    - – Produced by relaxing jaw and slightly dampening the reed vibration with the tongue and allowing a small amount of air to mingle with the tone
    - – Possible on clarinet also
- 4 Horn (2 Alto, 2 Tenor)
  - : Used by Benny Goodman & Artie Shaw
  - : Virtually all Swing era bands
- 4 Horn (2 Alto, 1 Tenor, 1 Bari)
- 4 Horn (3 Tenor, 1 Bari)
  - : Four Brothers sound of Woody Herman Herd

- 5 Horn 2 Alto, 2 Tenor, 1 Bari
  - : Doubling of the lead Alto down an octave
  - : Done in block voicing
    - – Gives ensemble sound added depth and power
    - – Does not sacrifice mobility
  - : Most commonly found in contemporary Jazz bands

3 Voice Leading

- Close position logical voice leading is very important
- Semi Open
  - : Dropped 2nd voice of close position voicing down an octave
  - : Creates a mellower less dynamic sound
  - : Effective particularly if lead Alto is playing in a fairly high register
- Open (spread) Voicing
  - : Results in a full organ like sound
  - : Particularly well suited to slow moving ballad passages
  - : Primary concern is overall depth and richness of sound
  - : Voice leading may be less strict than in rhythmic passages
- Cluster Voicing
  - : Very effective for the Sax section when combined with parallel melodic motion
  - : Thad Jones – Mel Lewis Band primary example of cluster writing
- General voicing considerations
  - : Sax section sounds excellent in voicing with P4th prominent
  - : Not necessary to maintain one voicing throughout (to achieve textural variety)

C. CLARINETS


Eb Clarinet


Bb Clarinet

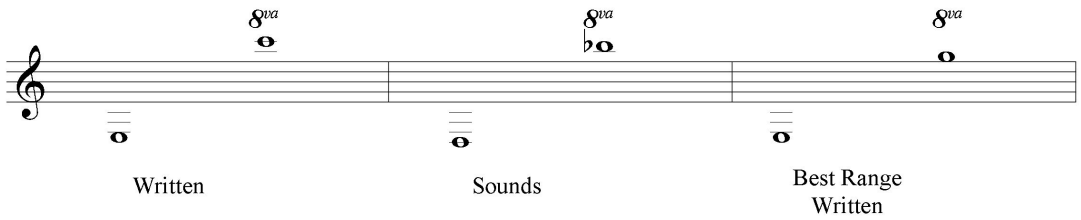

Bb Bass Clarinet


Eb Contra Bass Clarinet

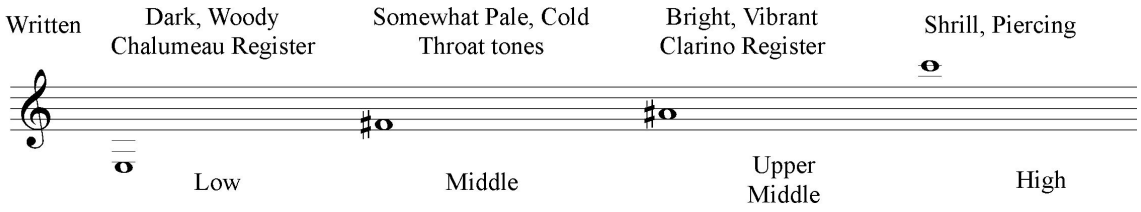
1 Bb Clarinet

- Has most extensive range of any woodwind instrument
  - : Ranks second only to the Flute in agility
  - : Capable of producing several different tonal shadings

Bb Clarinet Range



Bb Clarinet Tonal Shading



- Clarinet Section
  - : Sound best when playing in unison
    - – Especially subtone in low → middle registers
  - : Or thirds
- Voicing
  - : Open position
    - – Especially when section is used as a ‘pad’ behind vocals or instrumentals
  - : Close position as lead voice over Sax section
    - – Creates an identifiable reed sound for many bands
      - + Glenn Miller most famous example
      - + Most popular and imitated Dance Band sound
    - – Block voicing with lead doubled an octave below with sax
    - – Brilliant sounding register
    - – Fast vibrato indicated at *f* volume

- Close position as lead voice over French Horns
  - Claude Thornhill sound
    - Subtone effect
    - Low register
  - Also used by Duke Ellington, Woody Herman, Charlie Barnet, and Gerry Mulligan

- Orchestration considerations
  - Blends exceptionally well with other instruments
  - When doubling line at octave or in unison, loses its individuality and assumes a supporting role
  - Useful in passages which call for a 'thickened' or 'mixed' sound

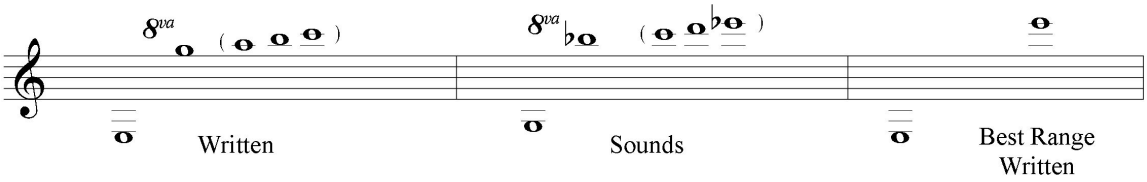
Recommended Clarinet Doubling

Flute	Unison or octaves – upper middle to high register
Oboe	Unison or octave – upper middle to high register
Bass Clarinet	In octaves – low to middle register
English Horn	Unison – low to middle register (especially beautiful woody sound)
Bassoon	Unison or octave – low to lower middle register
French Horn	Unison – subtone, with no vibrato – low to middle register
Trumpet w/cup mute	Unison – no vibrato – lower middle to upper middle register
Flugelhorn	Unison – no vibrato – lower middle to upper middle register (not much higher than G above the staff)
Trombone w/cup mute	Unison – low to middle register
Viola or Cello	Unison – low to middle register (especially useful when pure string sound in undesirable)

2 Eb Clarinet

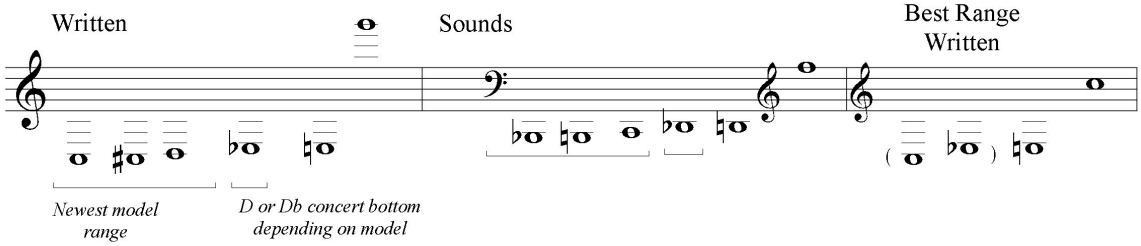
- Sometimes required in Recording situations
- Has a more accessible extended high register than Bb Clarinet
- Tone is somewhat lighter in body and more penetrating
- Heard frequently in authentic Greek music

Eb Clarinet Range



3 Bb Bass Clarinet

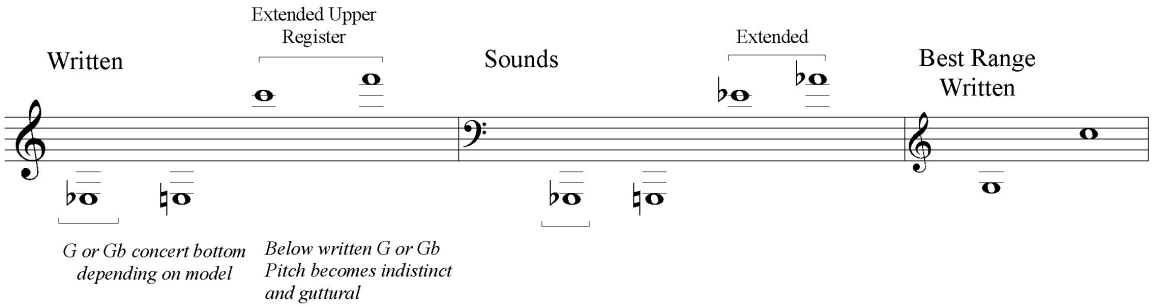
- Excellent recording instrument
- Low Register
  - : Especially effective
  - : Direct, pointed sound
    - – Can be heard clearly when mixed with other instruments
    - – Notable as lowest voice under trombones, French Horns, complete String section
    - – Effective as double to Cello line
- High Register
  - : Tense and strained
  - : Should be avoided unless doubled by another instrumental color
    - – Especially Viola or Cello
    - – Are strong enough to mask the awkwardness of tone



4 Eb Contra-Bass Clarinet (aka Contra-alto)

- Reserved for special musical occasions

  : Notes required below the Bass Clarinet
  : Comic relief or sinister effects in low register



- True Contra-Bass Clarinet in Bb

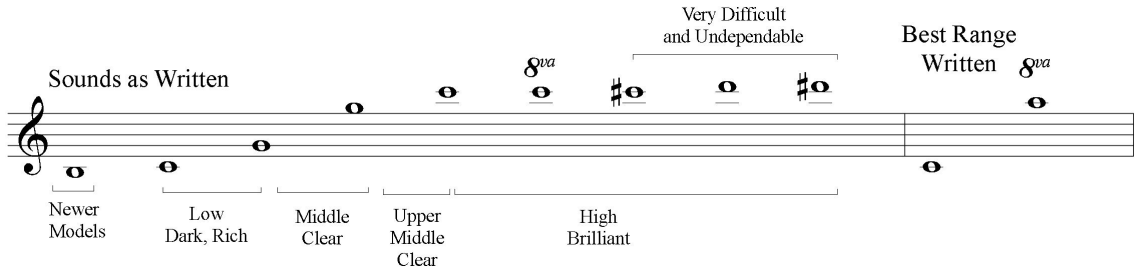
  : Octave below Bass Clarinet
  : Cumbersome instrument – not used

D. FLUTES

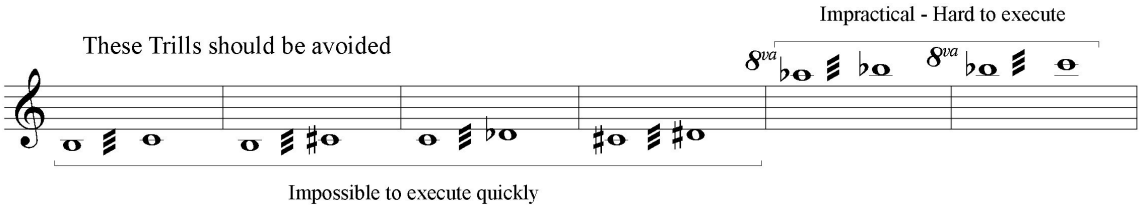
1 C Flute

- Most versatile member of the Flute family
- In hands of virtuoso player the instrument is capable of producing a variety of tonal shadings

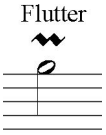
  : Dark & rich in low register
  : Crystal clear in middle
  : Brilliant and piercing in the high



- Extremely fast runs, arpeggios, repeated notes & wide skips between registers are easily executed
- Effects
  - : Trills are a characteristic of the instrument



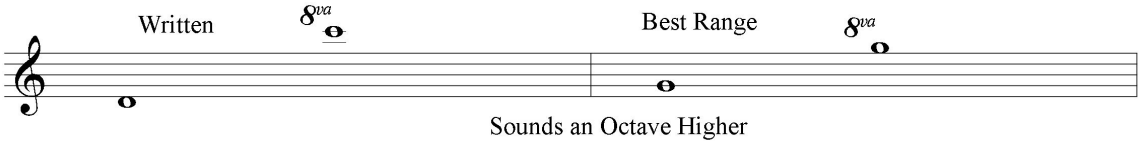
  - : Flutter Tonguing
    - – Rapid repetition of a single note
    - – Indicated by

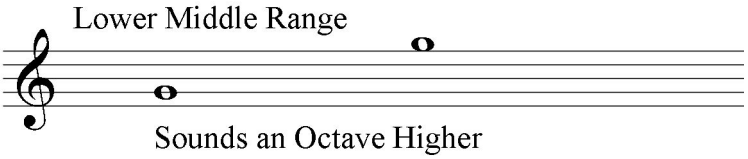


- As a Section
  - : Sound best when played in unison especially in low to upper middle register
  - : Voiced in single triads
  - : Produces a clear & uncluttered sound
    - – Ideal for recording
    - – In close position or cluster voicing the adjacent seconds tend to clash creating harsh overtones especially in high register
  - : Solo flute line can be thickened with vibes or bells (depending on register and character of musical passage)

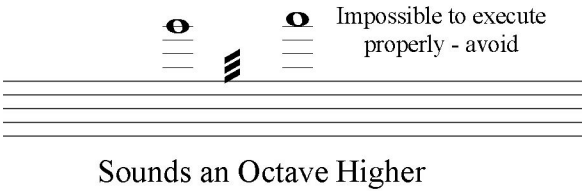
2 Piccolo

- Used as a high register reinforcement over woodwinds or brass
- Extreme high register capable of penetrating sound of any instrumental ensemble
  - : Regardless of size
  - : Requires discretion of use because of this (especially in recording situation)
- Low middle register is delicate and sweet
  - : Preferable to flute for quiet solo lines
  - : Flute can sound intense in this octave





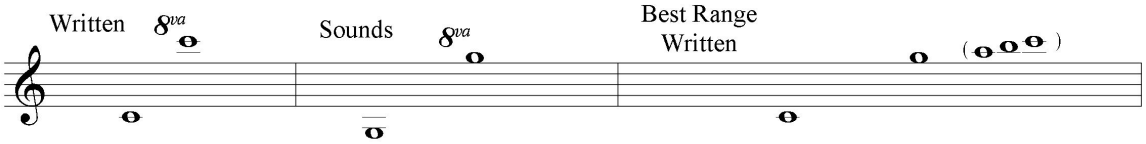
- Trill is the most characteristic effect



- 'Happy' lighthearted feeling is achieved with two or more piccolos playing in unison and doubling a solo or unison piccolo with bells or vibes
- Can adjust presence with volume indication
  - : Greater volume cuts through an ensemble
  - : Less volume piccolos are not heard as a separate identity but as overtones

3 Alto Flute (G Flute)

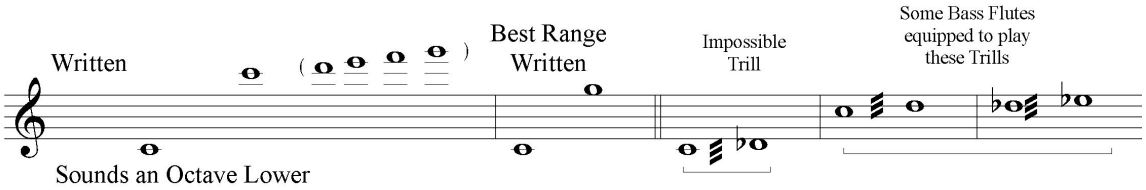
- One of the most popular contemporary sounding instruments
- Sounds a 4th lower than written



- Beauty & individual character is most apparent in low register (C→C)
- Keep instrument below high G above staff
  - : Beyond that tone is rather weak
  - : Intonation problems
- Drawback is instruments very limited projection
  - : Combine two or more alto flutes in unison to achieve characteristic 'breathy' sound
  - : Triad voicing with three alto flutes possible if reinforced by doubling with vibes, electric piano, marimba, etc.
    - – Can also overdub the alto flute effectively doubling the line in recording session to reinforce the sound
    - – This technique is limited to the recording environment
  - : Four alto flutes in close voicing is possible
  - : Block voicing with three alto flutes and clarinet in subtone is possible
  - : Unison is best basic effect for most scores
  - : Because of limited carrying power a single alto flute does not blend well in mixed woodwind ensemble
- Same impractical trills for C Flute apply

4 Bass Flute

- Everything concerning Alto Flute with regards to tone projection and blendability applies to the Bass Flute



- 3 or 4 bass flutes playing in unison creates a unique and mysterious sound
  - : Really only successful voicing
  - : Velvety in texture
  - : Very limited in projection

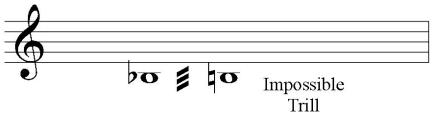
- Combinations with other instruments in doubling will mask its character or cover it completely
  - : Marimba is a possibility
- Bore of the instrument is very large (considerable air is required) so arranger must give ample time for breath

E. Double Reeds

1 Oboe

- Non-transposing instrument sounding as written

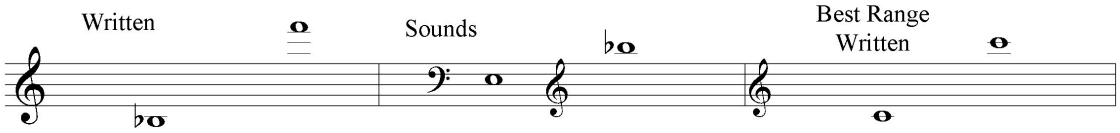
- Characteristics
  - : As solo orchestral voice it is very expressive (particularly in slow passages
  - : Can sound coarse especially in lowest part of range (F down to Bb)
    - These notes are most difficult to control
    - Best to avoid these notes for average player
  - : Extreme high register (above highest D) is also hard to control
    - Avoid too long or too difficult passages
    - Passages with skips
  - : Generally not as agile as flute or clarinet
    - Can produce trills but not at speed for flute or clarinet
    - This trill is impossible



  - : Rapid staccato passages are easily playable and consistent with the character of the instrument
- As a section
  - : Effective when voiced in 3^{rds} and open 5^{ths} (effective for oriental passages)
  - : 3 oboes effective in 3^{rds} similar to flute voicings
  - : Unison produces an especially harsh effect and should be avoided (unless this sound is required)
  - : Can be combined effectively (in unison or octaves) with flutes, piccolos, clarinets, English horn, or bassoon

2 English Horn

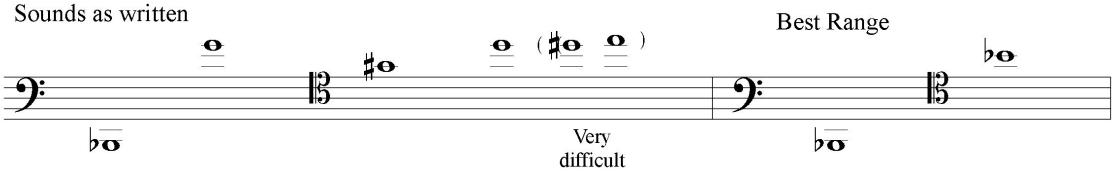
- All recording oboe players also double on English horn
- Transposing instrument in F



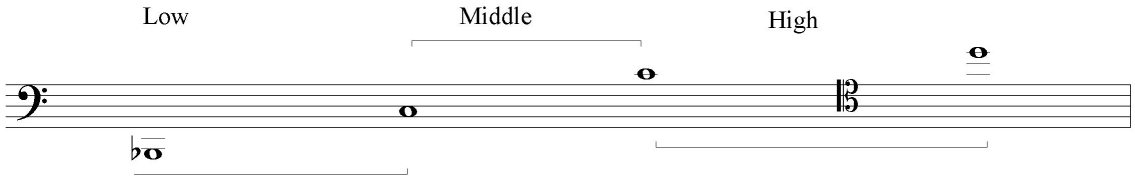
- Characteristics
  - : Similar in sound to oboe
    - – Less strident
    - – Slightly ‘woodier’ in flavor
      - + Especially in the lower register
      - + Here the distinctive character of the instrument is most apparent
  - : As solo instrument for ballad melodies
    - – Projects a distant, wild, autumnal sound
    - – Beautiful and unique
  - : Unlike the oboe it does not become coarse or nasal in bottom of range
- As section
  - : Bottom range characteristic makes it useful as 3rd voice in 3 part voicing in place of oboe
  - : Blends beautifully with in unison with clarinet
  - : Can be voiced in 3 parts creating a rich Spanish feeling

3 Bassoon

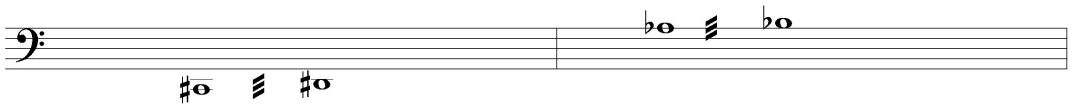
- Completely different technique to oboe and English horn so usually played by a specialist
- Non-transposing instrument
  - : Bass clef for low register (Bb up to or F or G above staff)
  - : Tenor clef for remainder of high register
  - : If passage lies predominately in one clef or another, the entire passage is scored in one clef



- Characteristics
  - : Lowest part of range is thick and robust
  - : Middle is vibrant and sonorous
  - : High range becomes more tense as it ascends (Stravinsky's 'Rite of Spring')



  - : Not as flexible as other woodwinds
    - – Can perform moderately paced scale runs with relative ease
    - – Trills especially in low register can be troublesome
      - + Most recording bassoonists can accommodate most trills
      - + Trills to avoid



  - : Staccato passages are very effective particularly in low and middle registers
- As a section
  - : Hard to record properly
    - – Tends to become lost when combined with other instruments
    - – Sound not a pointed or direct as flute or oboe but rather strained and diffused
  - : Does have a unique tonal color which makes it most effective is passages transparent enough to be heard clearly
  - : Unless the unique bassoon tonal color is required, preferable to use bass clarinet to play low note in woodwind ensemble (to ensure maximum clarity)
  - : Can be doubled with clarinet or bass clarinet in unison or octaves
  - : Light hearted effect can be achieved by doubling low bassoon line with piccolo 4 or 5 octaves higher
  - : Can be used to reinforce a cello line (legato or staccato)

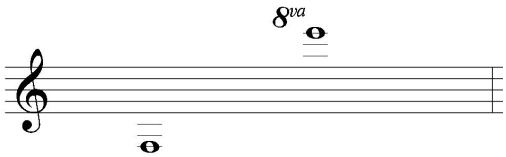
4 Contra Bassoon

- Pitched an octave below the bassoon
- Not generally used in 'contemporary' music

F. Special Purpose Wind Instruments

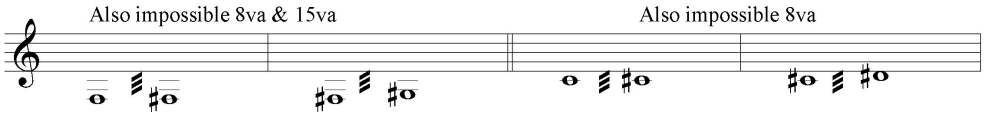
1 Recorders

- A double for some recording reed players
  - : Constructed of wood or plastic
  - : Comes in 5 sizes (F Soprano, C Soprano, F Alto, C Tenor, F Bass)
- Characteristics
  - : Delicate tone is ideal for use in arrangements requiring and especially intimate sound
  - : Light sound and delicate intonation
  - : Useful for any arrangement with a Baroque flavor
  - : Tonal compass for the recorder family extends from F below middle C up to G two octaves above the staff



  - : Projection of instrument is very limited
  - : Flexibility is very limited
    - – Chromatic passages at fast tempos are very difficult
    - – Most comfortable keys are F, C, G, & D

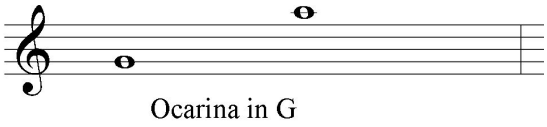
: These Trills are impossible



- Best use (because of light sound / delicate intonation)
  : As solo instrument
  : In recorder ensemble voiced much like a string quartet
  : Over a combination for flutes, clarinets, and bassoon
  : NOT advisable to combine recorders in unison or in unison with other instruments

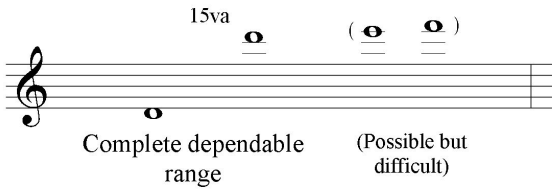
2 Ocarina

- Sometimes referred to as a ‘sweet potato’
- Sound is similar to the recorder but more primitive and limited in capabilities
- They are constructed in individual keys
  : Each has a 9 note range
  : Players usually play only those in keys with most reliable intonation (D, F, G, Bb, & C)

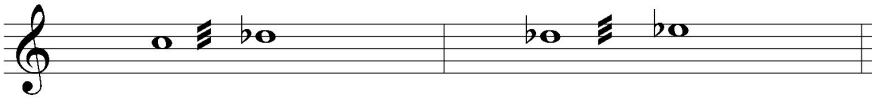


: There are two models of C
  – One with lowest note C above middle C and another an octave higher

- Characteristics
  - : Dependable range



    - Lowest notes (below G) are impractical and difficult to project and should be avoided
    - First half step on any ocarina is unreliable and should be avoided
  - : Characteristic sound is most apparent as it ascends above the staff
  - : In highest register it produces a penny whistle sound good for child like effects
  - : Two trills are impossible
    - Between fundamental and 1/2 step above
    - Lowered 2nd and lowered 3rd in key in which the ocarina was constructed



- Used exclusively for novelty solo color
  - : NEVER doubled
  - : NEVER combined with other instruments

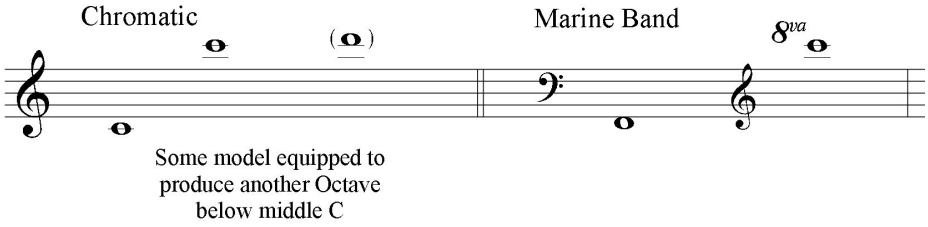
3 Harmonica

Chromatic Harmonica

'Marine' Band Harmonica

- Always played by a specialist
  - : Not all player utilize both types
  - : Many authentic blues harmonica players cannot read music

- Two basic types
  - : Chromatic
    - – Used for music that demands a pure clean harmonica tone
    - – For technically demanding melodic passages
  - : Diatonic Marine Band Model
    - – Constructed in all 12 keys
    - – Used for folk, rock, or country blues



4 Accordion

- Always played by a specialist
- Keyboard part of instrument is played with right hand
- Button side is designed to play bass & chords and is fingered with left hand
  - : Used exclusively for solo accordion playing
  - : NOT for most recording situations
- Used almost exclusively for solo color
- Can be combined with clarinet or flute lead to simulate a woodwind effect

IV Combining Woodwinds

A. Basic Principles

1 Combining of *similar* woodwind instruments presents no special problems to the arranger

- Uniformity of sound
- Uniformity of texture

2 Combining *dissimilar* woodwind instruments do present problems

- Every orchestral instrument has its own individual character (with attendant strengths & weaknesses)
  - : Basic tendency of most instruments is to project greatest intensity when playing either the extreme low or extreme high register
    - – Essential fact to remember when mixing any combination of orchestral colors
    - – Especially woodwinds
- To achieve a homogenous blend
  - : Intensity of each voice must be carefully considered
  - : Placement should lend itself to the best overall sound
    - – Essential to achieving a 'natural' sound of orchestra by maintaining the natural balance of the instruments when using modern recording technology and equipment
    - – An imbalance between instruments and instrument families creates an unnatural characteristic
      - + Disturbs the 'ear' and musical 'mind'
      - + Imbalance only used if effect is *intentional*

NB: Except for occasional situations in which a special electronically manipulated balance might be valid, the great majority of your voicings should be natural sounding and *acoustically* attainable.

B. CHARACTERISTICS

1 Flute ← → Oboe

- Low Register
  - : Flute is placed above Oboe
    - – Very rarely would reverse be successful
    - – Due to difference in tonal weight of instruments
  - : At *mf* flute tone is 'lovely' and warm but light compared to Oboe
    - – Oboe is very harsh in this register
    - – Voicings would be impractical
- Middle Register
  - : Moved to middle register the disparity in tonal weight is lessened
  - : Oboe must still adjust volume to allow the top voiced flute to predominate
- High Register
  - : Two instruments are about equal in intensity
  - : High register tends to balance out the inherent acoustical differences

2 Flute ← → Clarinet

- No great differences in balance at all three registers
- Clarinet is one of most readily blending of the orchestral instruments
- Clarinet has great control through most of its range
- Clarinet can be voiced in 3^{rds} with flute in almost any dynamic shading
- Slight lightening of clarinet is required to match the flute

3 Clarinet ← → Oboe

- Clarinet tone is more open to blend with oboe

4 In Combinations of similar instruments

- Unison
  - : Flute / Oboe; Flute / Clarinet; Oboe / Clarinet are strong and useful sounds
  - : Each doubling has a characteristic of its own
- Octave
  - : Octave doublings are equally useful
  - : Usually more pleasant sounding than unisons
  - : Each instrument has its own register to establish identity within combination
  - : Less chance of intonation conflict than with unison doubling

- Simple Triad Voicing with all three
  - : Theoretically possible but disappointing
    - – Leaves voicing with a lack of character
    - – No color seems to dominate
  - : Better to combine all same instrument or two of same and one of another

NB: Always consider proper relative intensity with in arrangement

5 Combinations of Dissimilar Woodwinds

- Usually do not sound good voiced in close position
  - : Clash of 2nds tends to underline and amplify the difference in tonal texture
  - : Makes a uniform blend extremely difficult in not impossible
- Each color needs some aural room within the woodwind ensemble – minimum of a 3rd
  - : 3rds and 4ths work well
  - : Open voicings work well
- Contrapuntal motion smoothes over the seams created by dissimilar combinations

V COMBINING BRASS WITH THE WOODWINDS

A. HOMOPHONIC JAZZ APPROACH

1 4 Tpts, 4 Tbnes, 5 Saxes – Big Band Brass & Saxophones

- Dynamic yet mobile voicing relatively simple harmonically and melodically
- No single correct way to write for Big Band
  - : Several different styles all valid
  - : Choices arranger makes are a matter of personal taste
  - : But some principles of craft are to be understood and applied regardless of musical taste
- Swing feels in Big Band
  - : Logical voice leading
  - : Continuity of melodic line
  - : Relatively simple harmonic structure
    - – 4 voice chords predominate
    - – 5 note at emphasis points
    - – 6 note at finals

Duke Ellington
Neil Hefti
Al Cohn
Bill Russo

General Rule: The simpler the harmonic content, the more vibrant the overall sound – 4 note chord played by 13 plus instruments will duplicate and reinforce each note of the chord

- Saxophones are voiced overlapping the tpts & Tbnes
  - : Lends support to blend or flow
  - : Always as an element *added* to the brass <u>not</u> *integrated* with them
  - : With large ensembles brass should be voiced as a separate entity
    - Voiced to sound complete within itself
    - Still contributes to overall sound
  - : Possible in larger brass sections (8 or more players) to treat tpts and tbne sections as separated but conjoined entities
    - Smaller brass section this is not possible
- This approach is extremely important in recording situations
  - : Normally, recording a mixed instrumental group, separate tracks are allocated to each section
  - : When separate tracks are mixed down inevitably some points will have one section in predominate
    - At ***f*** or louder saxes are not generally able to project with same degree of intensity as the brass
    - If individual sections are voiced to sound complete within themselves, the momentary variances in texture are less noticeable

Any particular instrumental combination will lead to different choices with another instrumental combination. NO one set of scoring procedures can or should be made to fit different sized ensembles

2 3 Tpts, 2 Tbnes, 4 Saxes

- Can still create Big Band sound with smaller ensemble
- To maintain desired body and dynamic punch
  - : Reinforce lead tpt with tbne one octave lower
  - : Impossible to give compete chord to brass section
    - Use saxes to fill in missing notes of harmony
    - The saxes *still* maintain completeness

Blood, Sweat, & Tears
Chicago

- Anything smaller becomes a large combo
  - To mimic Big Band sound
    - Use bright register
    - Semi-open voicing
    - Chords in 4ths
    - Strong unisons & octaves at the end of passages

3 Large ensemble with intimate & soft sound

- Voiced interval of 3rd with interval of 4th above or reverse (4th with 3rd above)
- Disparity in projection between Tpt / Tbne / Sax become negligible
- Demands a greater degree of sensitivity from player
- A Miles Davis "Birth of the Cool" sound

B. HARMONICALLY MORE COMPLEX APPROACH

1 Emphasis is on harmonic aspect of phrase

- Rhythmic and melodic aspect are secondary
- Emphasis is on harmonic density and richness rather than maximum vibrancy

2 Characteristics

- Most chords contain 6 or more notes
- Very little doubling
- Most successful when melody moves in relatively long note values allowing the richness of harmony to establish itself
- Advisable to contrast cluster voicing with passage of lighter texture to provide variety
- Brass and saxes are again voiced as separate and complete sounding units
- Gary McFarland & Johnny Richards sound

C. MORE MELODICALLY ORIENTED APPROACH

1 Concerned with achieving a loose almost improvised feeling through multiple unison

2 Chords are secondary formed only as a result of momentary converging of counterpoint

Bill Holman
"Kingfish"
Gerry Mulligan
"Young Blood"

D. MORE SUBTLE AND UNUSUAL COLOR COMBINATIONS

1 As general rule – again – whenever possible voice each separate body of instruments as a complete sounding entity within the total ensemble sound

2 Flute / Piccolo

Gil Evans is a master at these subtle combinations

He is a 'master painter'

- Flute octave above lead tpt in brass ensemble
  - : Especially good for recording sessions
  - : Flute gives overall sound a 'clean edge'
- Piccolo two octaves above brass ensemble tpt lead
  - : Produces a hard and penetrating sound
  - : To modify the shrill quality double 2nd tpt instead of lead
- 2 flutes to unison double with 3rd and lead tpt with piccolo doubling 2nd tpt an octave higher
- Flute in unison with harmon muted tpt
  - : Quincy Jones trademark
  - : Muting the tpt with a cup mute produces a softer more intimate sound
  - : For a 'crisper' sound quality place the flute an octave above the muted tpt
  - : Sound can be extended by utilizing several muted tpts doubled an octave higher by the same number of flutes
  - : Gil Evans combines 2 harmon muted tpts *over* a single flute in close position

3 Larger unusual combinations

- Flutes can also blend extremely well with flugelhorns and other brass
- 3 flutes voiced in 4ths exactly duplicating brass ensemble of 2 flugelhorns and 1 French horn with tbne as non doubled 4th voice

4 Cautions

- Watch disparity in register and tone color
  - : Example – High flutes doubling top three voices in brass ensemble with 4th reed doubling low brass would make satisfactory woodwind blend difficult to achieve
  - : Watch which tone color will predominate
    - – In brass – woodwind combinations brass will dominate
    - – Keep brass voices within 5th or m6th
      - + Otherwise the horn sound will diffuse
      - + Intonation conflicts are possibly created
- Supportive woodwinds should take any important passing tones
- To have woodwinds project a unified sound as a *separate section*
  - : Try to maintain the consonant interval of 3rd or 10th between any two
  - : This will create a homogeneous blend between hrns & w/w's even if physically separated in recording studio

There are many conceivable w/w with brass voicings – finding them is largely a result of experimentation

These 'guesses' should be informed ones based upon the capabilities of the considered instruments

Some combinations may look good on 'paper' but do not in execution – and opposite is true: not so good on 'paper' but work well in performance

- Before combining a group of w/w's consider each one separately in regards to
  - Tone color
  - 'Weight"
  - Register
  - Relation to the instruments surrounding it
- For maximum clarity in combing woodwinds & brass in mixed voicing
  - Place w/w's above or below brass not interspersed
  - There are exceptions
    - Exceptions are very subtle color combinations
    - Will generally demand careful electronic balancing to be successful

Woodwind Characteristics

Piccolo	Bright, penetrating tone can be used with open or muted brass
Flute	Clear tone with very good projection especially in the upper register can be combined with open or muted brass
Alto Flute	Limited projection should be doubled only useful in conjunction with soft brass
Bass Flute	Extremely limited carrying power not recommended for use in mixed ensembles
Oboe	Substantial tonal weight but nasal quality limits its ability to blend effectively not especially recommended for use in mixed ensembles
English Horn	Lovely color but limited projection when used in mixed ensembles best used in unison with clarinet as a lead line over soft bass
Clarinet	Piercing high register can be overpowering in mixed combinations use only when a shrill quality is desired middle register to low register is mellow enabling it blend especially well with mellow open brass or muted brass
Bass Clarinet	Low register is capable of standing up to middle register open brass if not too loud especially good when used underneath French horns and trombones
Bassoon	Very limited projection no edge not recommended for use in combination with open brass can be heard with soft or muted brass especially when placed in the low register

3 STRINGS

Violin

Viola

Cello

Bass

Violin Bow

Violin Mute

Bass Bow

I GENERAL STRING CONSIDERATIONS

A. MOST ARRANGERS HAVE EXTENSIVE EXPERIENCE WITH WIND INSTRUMENTS BEFORE OPPORTUNITY TO SCORE FOR STRINGS

1 Most will tend to use techniques learned for wind instruments for strings

B. STRINGS CANNOT BE SCORED LIKE ANY OTHER INSTRUMENTS

1 Completely separate entity
2 Requires sensitivity, patience, and concentration to acquire proper string ensemble technique

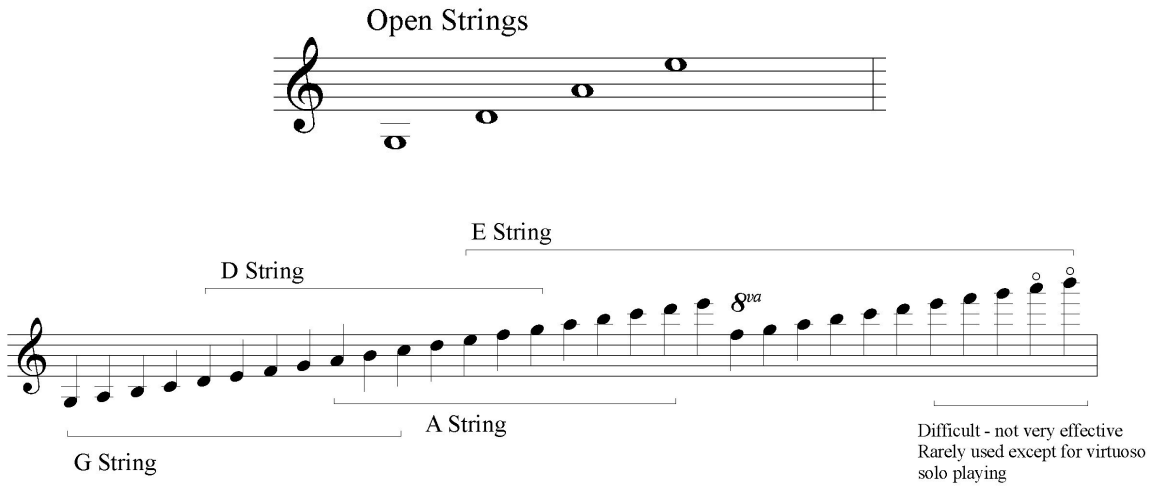
- Strings are more difficult to orchestrate effectively than any other instrumental group
  - : Strings are usually voiced with more than one player on a part
  - : Weight of tone and carrying power much more limited than wind instruments
    - – Playing with similar volume indication 12 – 16 violins is equal in weight to one wind instrument
    - – Evident in symphony orchestra where strings are more than half of total instrument count
- Unique tonal character demands a different kind of melodic motion than would be suitable for brass or woodwinds
  - : Especially important in Jazz phrasing
    - – Players are accustomed to 'legit' or 'straight' interpretation of the notated line
    - – Several attempts at trying to get a large string ensemble to 'swing' – none successful

C. STRINGS ARE CAPABLE OF PRODUCING A WIDER TONAL RANGE AND MORE EXTENSIVE VARIETY OF TONAL COLOR AND EFFECTS

1 Arranger must constantly adjust manner of scoring to take advantage (or compensate for) this wide tonal vocabulary presents

II VIOLIN

A. WIDE RANGE ENCOMPASSING MORE THAN FOUR OCTAVES



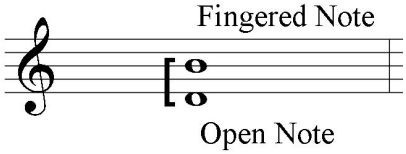
1 Each of the four strings has its own individual character

- Highest and lowest strings project more strength & sonority than the inner two (common to all string instruments)
- High 'E' can be sweet, forceful, strident, or ethereal depending upon dynamics and bowing techniques
  - : Made of thin steel and naturally produces a more brilliant tone
- Low 'G' produces a warm & rich tone
  - : Heaviest of the 4 strings
  - : Made of gut with silver wire wrap
- Violinist will automatically make the change between strings which best preserves the continuity & expressiveness of the music
  - : Use *Sul G* (or *Sul A*, etc) to indicate all notes to be played on the one string indicated

B. MULTIPLE STOPS

1 Double Stop

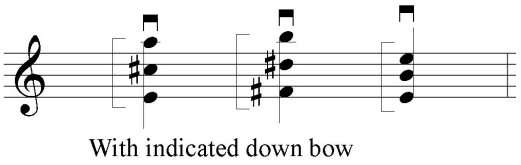
- Two notes played simultaneously on adjacent strings
- Indicated with '[' bracing the two notes



  - : If one of the notes is an open string it is very easy to play
  - : Unison double stops (using an open string) can be very effective
  - : If both notes are fingered interval should be no smaller than a M2nd and no larger than an octave
- 3 things will make double stop execution easily playable
  - : Use of open strings whenever possible
  - : Avoidance of radical changes in hand position (fingering the two notes and reaching for the double stop)
  - : Maintenance (common tone) of one of the notes between two separate double stops

2 Triple Stop

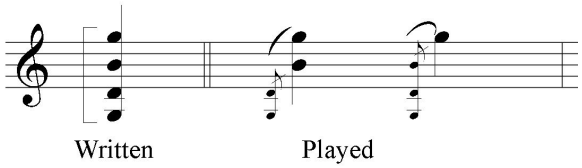
- Possible when chords are played with enough force to depress the middle string



- Possible for notes of limited duration
  - : No longer than half note at medium tempo
  - : Impractical from arranger's standpoint except for solo passages
- Triple stops that require the sustaining of part of the chord can be achieved by arpeggiating the three notes in various ways
  - : Bow holds only one or two upper notes of chord
  - : Low note is bowed quickly before the held upper notes
- Good to incorporate one open string to facilitate execution

3 Quadruple Stop

- Impossible to perform exactly as written



- Used only when maximum force & power are necessary
- Good to incorporate one open string
- Should use spread of open voicing to maximize sonority and ease of execution

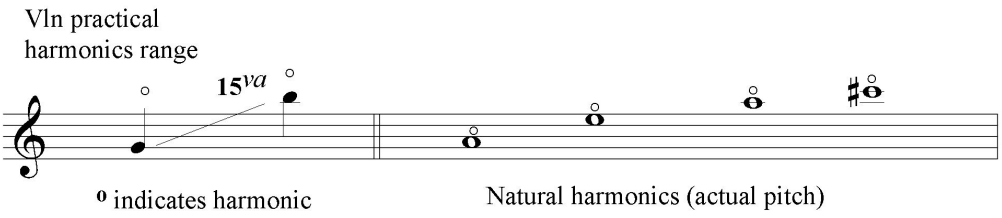
4 Summary of Multiple Stops

- Players usually dislike multiple stops
  - : Feeling that they can impair intonation
  - : Limits the degree of expression with which to color a musical line
- Should discuss inclusion with your concert master

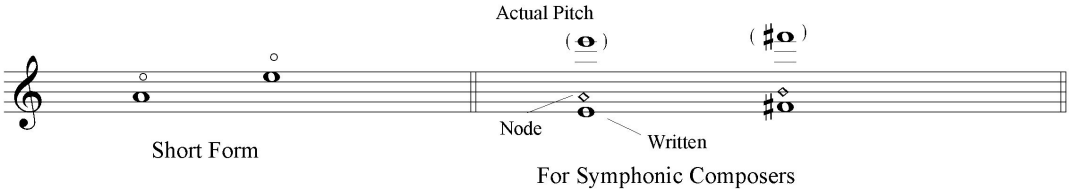
C. COLOR EFFECTS (APPLY ALSO TO VIOLA, CELLO, & BASS)

1 Harmonics

- Light touch at light points (nodes) which limits the vibration of the string
- Two classifications of harmonics
  - : If fundamental tone is that of an open string it is a *natural* harmonic
  - : It string depressed with 1st finger and lightly touched with 4th it is an *artificial* harmonic
  - : Not necessary to differentiate between two for player will execute passage as fluently as possible



- Notating Harmonics
  - : Short form is actual pitch desired with small circle above
  - : Symphonic practice has written pitch with node (touch point) and actual pitch in parenthesis
  - : If a group of harmonics write out 'harmonic' with dotted line extending over desired notes (actual pitch)



2 Sul tasto (or *sur la touché*)

- Drawing bow over strings *farther* away from the bridge than for normal tone
- Produces a velvety and transparent sound
- Labeled as 'sul tasto' with dotted line extending over affected notes

3 Ponticello

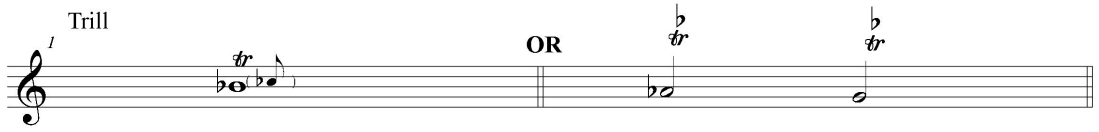
- Drawing bow *closer* to the bridge than for normal tone
- Produces a glassy and chilling effect
- Often combined with tremolo
- Labeled as 'ponticello' with dotted line extending over affected notes

4 Col legno

- Bow is turned over and strings are *struck* with the wooden part of the bow
- Produces a dry almost colorless tone quality
- Usefulness is limited to staccato rhythmic effects

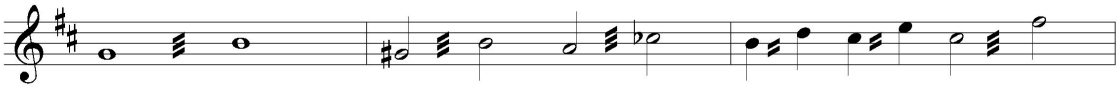
5 Trill

- Rapid alteration of minor or major *2nd*
- The type of 2nd is indicated when notating the trill

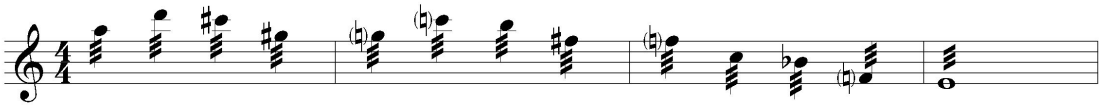


6 Tremolo

- Fingered tremolo
  - : Rapid alteration between two notes encompassing an interval *greater* than a M2nd
  - : Creates a blurred and rustling effect

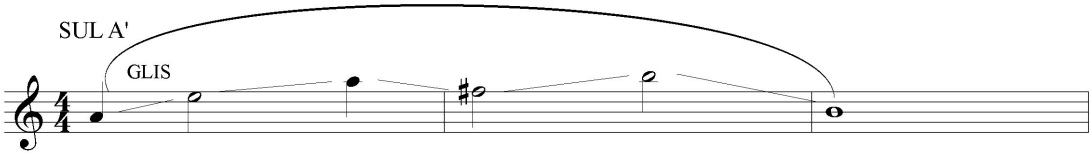


- Bowed tremolo
  - : Rapid bow alteration of up & down strokes on a *single* note
  - : If passage with bowed tremolo is long, write 'tremolo' with doted line extending over affected notes

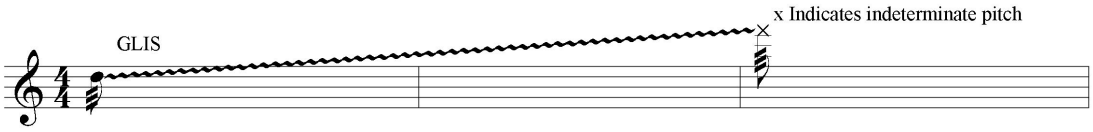


7 Portamento / Glissando

- Terms are interchangeable
- Sliding of hand (up or down) between two notes on same string
- Can become annoying if overdone



- Can be combined with bowed tremolo to good effect



8 Pizzicato

- Effect produced by plucking the string
  - : Speed of a cleanly executed pizzicato is limited
  - : Abbreviated as ‘pizz.’
- Several Different types of pizzicato effects
  - : Pluck with one finger (most often used)
    - – Plucked open strings are more resonant than fingered
    - – Fingered can be made less severe with the addition of vibrato (if register and tempo allow)
  - : Double, triple, quad duple stops
    - – All can be played pizzicato
    - – Done by quickly arpeggiatting chords usually from low to high strings
  - : Triple or quad duple stops in pizzicato quickly repeated with up & down plucking motion
    - – A Bartok technique
    - – Indicated by ‘quasi guitar’ or ‘strummed’

: Plucking string vertically causing it to snap against the finger board

- A Bartok technique
- Indicated with

: Combined with glissando

- Pitch is of short duration in this effect
- Best used on thicker strings (cello / bass)

9 Vibrato

- Is adjusted to enhance the kind of music being played

: A little faster for very expressive or romantic types of music
: Slower for music demanding a 'cooler' approach (Jazz vocal accompaniment)

10 Con Sordino

- Used to indicate use of violin mute
- Placed on the bridge the mute absorbs some of the vibrations of the strings

: Thins out the normal violin tone
: Produces a charming intimate sound

- Need to provide space in music to place or remove the mute
- 'senza sordino' indicates removal of the mute (can also simply use 'muted' or 'open'

Trust the players and concertmasters judgment with bowing techniques

D. BOWING TECHNIQUES

1 Bow direction

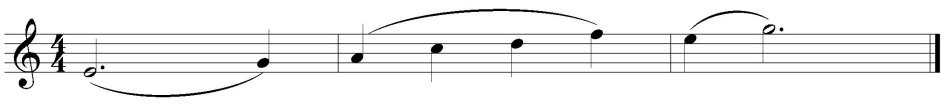
- 'V' up bow '∏' down bow
- Best left to concert master unless requiring a specific effect

2 Legato bowing

- Notes are played smoothly with the bow never leaving the string

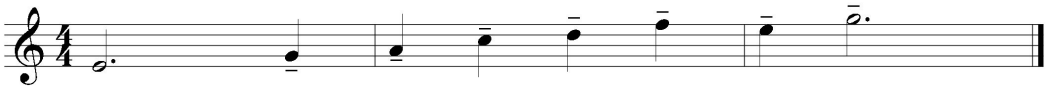
: If no slurs are indicated the player will normally alternate up and down bowing
: With slurs indicated, the notes are played with one bow (either up or down)
: Number of notes available with one bow direction is limited

- Player will automatically deviate from indicated bowing if it is impractical or difficult



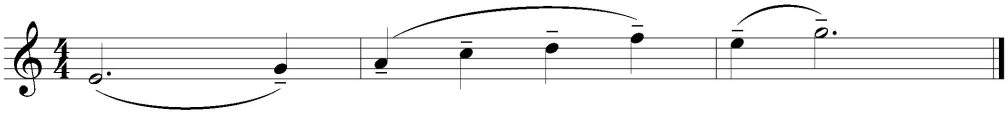
3 Detaché

- Bow does not leave the string but notes are ‘detached’ from one another by alternating up & down bows
- Indicated by ‘–‘ over note
- For dramatic effect



4 Louré (or porlando)

- Notes are played on one bow but with a slight pause on each note
- Indicated with slur and ‘–‘ markings

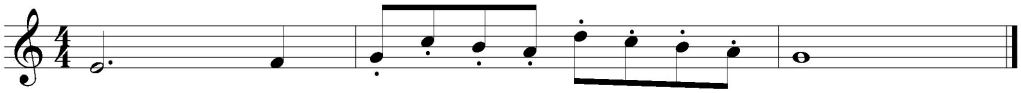


5 Consecutive Down Bows

- Down bows played with bow lifting off from strings after each
- Provides emphasis

6 Staccato, saltando, saltato, & spiccato

- Produces crisp detached notes of short sounding value
- These are all slightly different techniques which produce the same short note soundings
- Indicated with ‘.’ above the note



7 Jeté, (ricochet or ‘bouncing bow’)

- Very light staccato effect in which the bow bounces on the string
- Indicated with slur marking and ‘.’

III VIOLA

A. CHARACTERISTICS

1 Basic Tone Quality

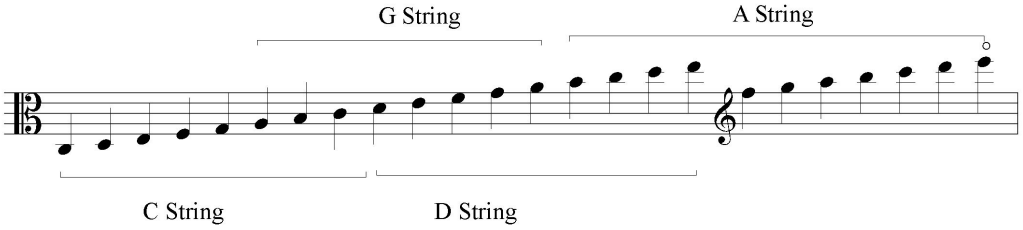
- Warm and subtle but a bit withdrawn (except high 'A' string which can become nasal)
- Does not have the projection or flexibility of the violin or cello
  - : In recording string sections usually relegated to 'filler' notes
  - : In some string groups it is omitted entirely

2 As a solo instrument it can be beautifully expressive with a projected tone darker than the violin

B. RANGE

1 Scored in Alto Clef except in extreme high register where Treble Clef is used

- Arranger should avoid changing between clefs
- Passage which repeatedly crosses clef boundaries should be notated in one or the other
-



2 Scoring higher than 'C' above the treble clef staff is not recommended

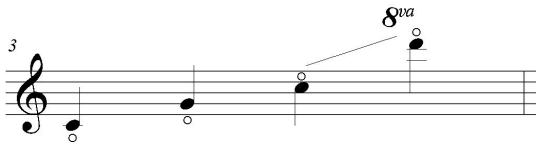
- Tone becomes strident and intrusive
- Intonation can become imprecise

C. EFFECTS

1 Double and Triple stops

- Three lower strings are rich sounding and relatively uniform in texture
- Best suited for double stops
  - : Try to utilize one open string
  - : Fingered stops best between m3rd and M6th with 7^{ths} and octaves possible
- Triple stops with short consecutive bows can be useful for dramatic purpose
- Quadruple stops should be avoided

2 Harmonics



: Used & useful in small string ensembles
: Rarely used in general

IV CELLO

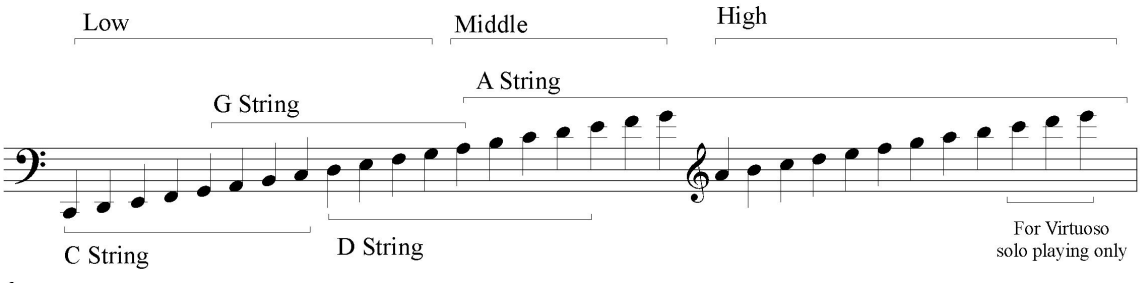
A. CHARACTERISTICS

1 Most powerful member of the string family

- Projects a richness and breadth of tone
- Capable of carrying a string ensemble line alone

2 Four or more cellos as section produce a unique full bodied string sound (Villa Lobo's 'Bachianas Brazileras #5)

B. RANGE



Occasionally low string is tuned down to B or Bb for special passages

1 Pitched an octave below the viola
2 Scored in Bass Clef with Treble Clef reserved for high register
3 Low and middle registers are warm and full bodied
4 Tone becomes more intense (but not strident) ascending into the upper register

C. EFFECTS

1 Double, Triple, Quadruple Stops

- Double stops either short or sustained are effective

: Incorporate an open string whenever possible
: Fingered stops best between m3rd and M6th with 7^{ths} and octaves possible

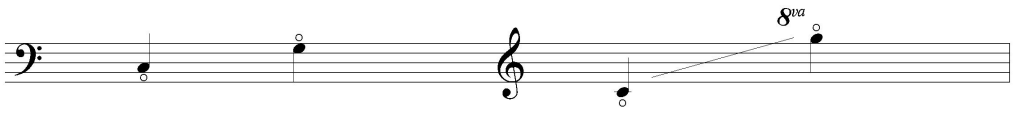
2 Triple and Quadruple stops

- Must be ‘rolled’ or arpeggiated
- Can be bowed or plucked
- Especially effective because of long thick strings
- 3 & 4 note chords should be spread in open voicing

  : For maximum sonority
  : Ease of execution

3 Harmonics

- Rarely used except for special effects



4 Pizzicato is especially effective in low to middle register

V BASS

A. FUNCTIONS

1 In commercial recordings used exclusively as a component of the Rhythm Section
2 Does occasionally join the string section

- For cadences
- Other situations where its low register is required

VI HARP

A. CHARACTERISTICS

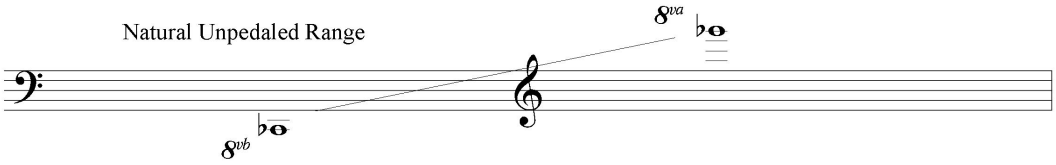
1 Unique among orchestral instruments
2 Pedals and tuning create limitations

- Excessive chromaticism is impractical and impossible at fast tempos
- Chords containing two notes from same scale step (i.e. Cb, C, C#) are impossible

: Pedals alter the strings all simultaneously
: Use enharmonic spelling (G#, Ab) to avoid this and have note available on different strings
: Use enharmonic spelling to produce unisons
: Drop certain notes from glissandi

B. TUNING & RANGE

1 Has 47 strings tuned to a repeating Cb diatonic scale
2 Scored in both Bass & Treble Clef



3 Range is 5 octaves + 5th

C. PEDALS

1 Equipped with 7 pedals

- Correspond to the 7 steps of the scale
- Alter pitch of corresponding scale tone *in every octave simultaneously*
- Pedal changes can be made fairly quickly

2 Function

- Highest or Flat position
  - : Strings vibrate freely
  - : Produces the Cb diatonic scale
- Middle or Natural position
  - : Raises corresponding string pitches ½ step in every octave
- Low or Sharp position
  - : Raises corresponding string pitches 1 step in every octave

3 Need to prepare harpist for pedal change by indicating letter & accidental of each scale degree altered ahead of time

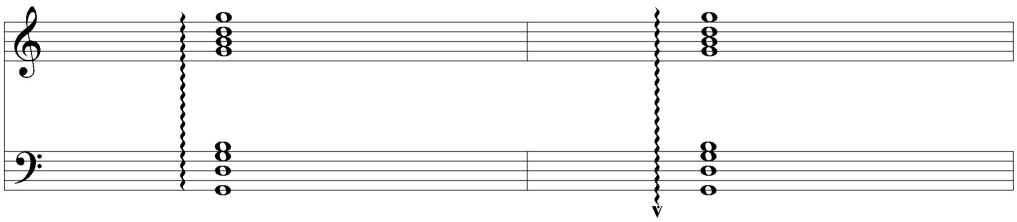
D. TECHNIQUE

1 Chords are restricted to 8 notes unless tempo is slow enough to enable cross hand extension as an arpeggio

- Harpist uses only 4 fingers from Left & Right hand
- Pinky is not used

2 Player will automatically 'roll' chords bottom up unless directed otherwise (

- Indicated with wavy line for bottom → up
- Indicated with wavy line with arrow head for top → down



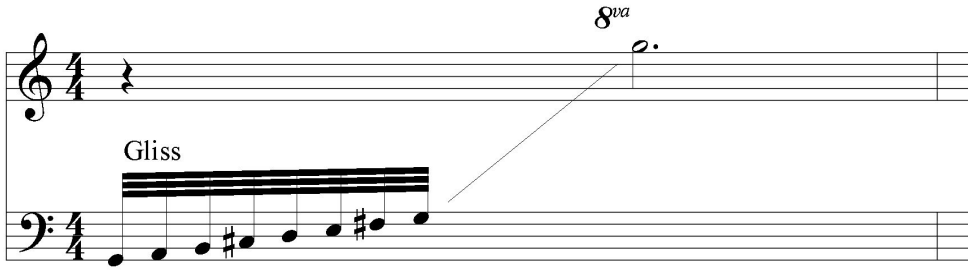
E. EFFECTS

1 If a short pizzicato effect is desired the arranger marks a bracket before the chord

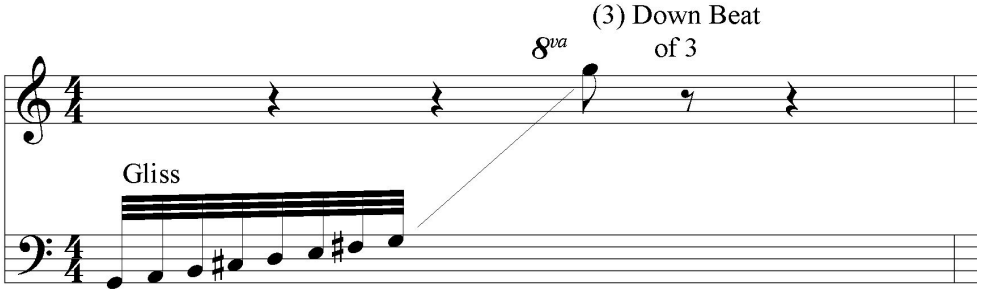
- Same indication as for violin double stops
- Include 'short' or 'plucked' on part for clarity
- To exaggerate the effect 'stopped' or dampened' is used

2 Most characteristic effect is the glissando

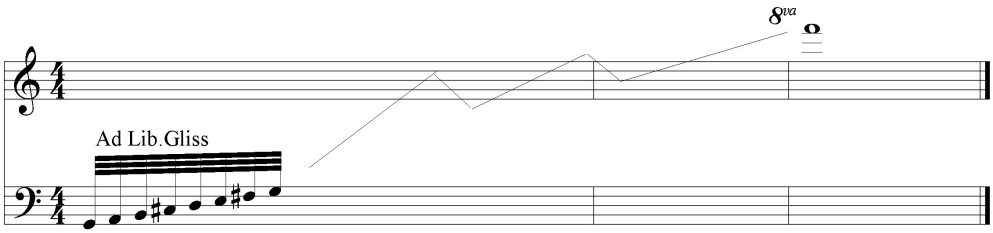
- Not necessary to write out all notes
- Use one octave with accidentals with straight line to last note
- Can indicate number of beats for gliss duration for clarity
- Can with unusually long gliss include loops indicated by lines indicating general direction (up / down) of gliss over time



Indicated Glissando

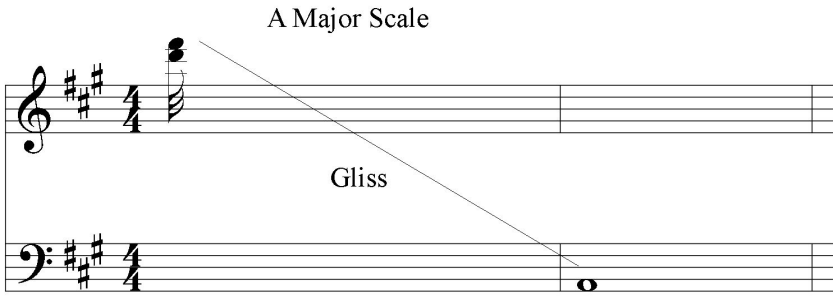


Glissando with ending beat number indicated



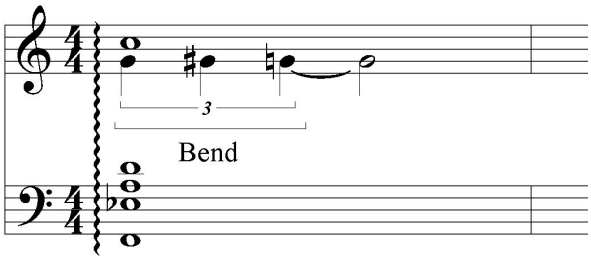
'Loop' Gliss'

- Glissandos are usually played with one finger of each hand
  - : Can use two fingers a 3rd apart
  - : Produces a particularly soft & lovely gliss effect
  - : Indicated by the 3rd interval notated with gliss



Two finger glissando

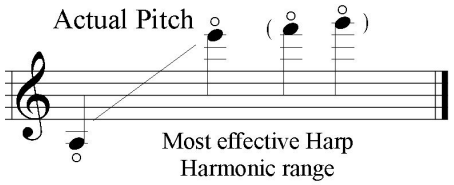
- An extremely delicate gliss can be produced using the palms of the hand rather than the finger tips
- Harder (almost metallic) gliss effect can be achieved by playing near the sound board (prés de la table) or with the finger nails
- Funky bent-note effect can be achieved by plucking the string and then raising or lowering the pitch with the corresponding pedal while sustaining the tone



3 Harmonics

- Sound an octave higher than open string
- Produce a lovely but extremely light sound
- Indicated similarly to violin harmonics

: With same confusion
: Use circle above actual pitch note
: Indicate with ‘actual pitch’ for clarity



: Must be sounded ‘in the clear’ as any competing sound will cancel the effect

F. CONTEXT

1 Can be doubled effectively with vibes, bells, celeste, or solo flute
2 Doubled with vibes ‘de-romanticizes’ the sound
3 Debussy’s ‘Nuages’

G. SUMMARY

1 When scored properly can be extremely useful to the recording arranger
2 A beautiful resonant sound for accents, fills, and support to string entrances and runs
3 Use the glissando effect sparingly and with discretion to avoid cloying and ‘old fashioned’ connotation

VII VOICING THE STRINGS

A. CONTRAST WITH WIND INSTRUMENTS

1 Wind instruments are characteristically uniform in tone and sonority

- Will remain fairly stable despite omission or addition of a number of players
  - : The intensity and complexity of the chord structure can be affected but usually *not* the overall ensemble concept
  - : One or two horns more or less will not affect the arranger's basic 'orchestrational attitude' for scoring the ensemble
- A brass section of 4 to 7 or more players can still maintain uniformity of texture

2 Strings are an entirely different matter

- Cannot be expanded 'one by one' as the Winds
  - : String voicing (except for small chamber group) usually require more than one player on a line
  - : The proper 'balancing' of these lines within the voicing gives the string ensemble its beauty and character
- Arranger before crucial decisions regarding sonority, melodic treatment, and general style
  - : Needs to know number of string players and grouping
  - : Different string groupings produce *very* different textures

B. USEFUL RECORDING STRING GROUPINGS

1 Four strings

- Standard string quartet of 2 violin, 1 viola, 1 cello
- Good quartet writing lies in creating a four way conversation between the players
  - : Each line separate but equal
  - : Extensive use of contrapuntal motion producing a constantly shifting linear movement
    - – Demands a great deal of player sensitivity demanded by the contrapuntal ebb & flow
    - – Possible due the communication possible between players (vs. the unity of large section work
    - – Creates a lean & mobile string sound

Unlike soaring flights of larger ensembles with unison rich chordal voicings producing glowing sonorities and dynamic sweep

- Trio (1 Vln, 1 Vla, 1 Vc) and Quintet (2 Vln, 2 Vla, 1 Vc or 3 Vln, 1 Vla, 1 Vc) are variations of basic string quartet and treated the same way

2 Chamber Groups

Used to create an intimate & highly personal mood but scored and treated to project as full & glowing sound as possible

- Nine Strings
  - : 7 Vlns, 2 Vc
  - : Utilitarian ensemble
  - : Used for recording budgets unable to allow for more strings
  - : Because of relative weakness Vla is not used in this context
- Twelve Strings
  - : 8 Vln, 2 Vla, 2 Vc
  - : Compromise between aural and economic considerations
  - : Use for recording more often than any other string grouping
  - : Extra violin is often added
    - – Lends a little extra strength and body to unison Vln line
    - – Puts extra player on the lead line in two way Vln divisi (5 – 4 vs. 4 -4) giving a bit more emphasis to melody
    - – Enables three way divisi (3 – 3 – 3) less than 3 Vlns on a line is *not* advisable
  - : Can be further extended with the addition of a 3rd Vla
    - – Ensures adequate sonority on unison Vla line
    - – Especially important with extensive inner voice movement
  - : Variation as 9 Vlns and 3 Vcs
- Sixteen Strings
  - : 12 Vln, 4 Vc
  - : Provides a strong and sonorous total ensemble
  - : Capable of achieving any effect satisfactorily
  - : Contains two separate entities capable of functioning independently
  - : Extra Vln is sometimes added to give additional strength to lead lines
- Twenty Strings
  - : 12 Vln, 4 Vla, 4 Vc
  - : Maximum string force necessary (or desirable) for recording
  - : Care not to have ensemble dominate vocalist or solo instrumental
  - : Capable of realizing any arranger's demands
  - : Anything larger should be restricted to music of symphonic proportions

C. Principles for String Groupings

The smaller the grouping the more careful the application of these principles

1 Limit the division of your string ensemble to as few lines as possible

- For maximum sonority
- A basic principle of economy

2 As general rule the lead Vln line should be carried by more players than any other line in a concerted chord

- Some do like equal division as lead line usually played by strongest players (4 – 4 – 4 for three way split)
- Others like more weight approaching a ratio of 2 – 1 (6 – 3 – 3 in three way split)
- Some have a smaller ratio (5 – 4 – 3 in three way split)
- To avoid confusion provide both written and verbal directions for desired string division

3 Only string instrument capable of sustaining an ensemble line alone is the Cello

- String bass can also sustain the line but only in recording situation *never* in live performance
- *Never* less than 2 Vla on a part
- In general *never* less than 3 Vln on a sustained line
- Occasionally trill or tremolo line by 2 Vln is permissible

4 As pitch of a concerted chord rises the size (or lack) of a string ensemble becomes more apparent

- Arranger with small body of strings must compensate by limiting the division of the ensemble
- High register melodic line in unison or 3^{rds} rather than three way divisi

5 As pitch rises adjacent 2^{nds} become more strident

- Limit to lower and middle register
- Exceptions for special effects and sound (David Rose string sound)

6 When strong sound is necessary (especially in a concerted melodic passage) lead Vln line should be reinforced an octave lower

7 As in all ensembles least important note is chordal root

- Usually played in String Bass
- Some arrangers double bass note with Vc
    - : In some recording situations this is usually unnecessary or sometime detrimental
    - : Can anchor or ground the sound
    - : By putting distance between lowest Vc and String Bass you allow strings to ‘float’ over Rhythm Section foundation
    - : Some occasions where the doubled String Bass / Vc is required as it gives a ‘full bottom rich’ string sound (use sparingly)

D. APPLICATION

1 Smaller ensembles

- Soft glowing sound in strings
  - : Fairly low register
  - : Voiced in close position
  - : Sul tasto bow indication (bow over finger board)
- Double stops in Vc for added chordal richness
- Mimic 'right hand' 'left hand'
  - : Widely separated Vlns & Vcs
  - : Effectively separates the strings into two independently functioning groups
- Illusion of chordal fullness possible with the presence of the chordal 3rd *somewhere* in the ensemble (even if a vocal line)
- Watch bottom Vc when striving for soft floating sound
  - : Can produce a grounding effect if handled inappropriately
  - : Can (with double stops if necessary) provide the richness to bring line to cadential stop
  - : Both Vc lines can do double stops if more richness is required
- Vcs play chordal roots for temporary richness and depth
  - : To solidify the overall identity of a string chord
  - : *Not* to reinforce the Bass
- Reinforce high climatic cadence by constant linear movement
  - : One voice (at least) is always moving upward
  - : Rely on chords built on 4^{ths}
    - Projects a good deal of resonance for string ensembles of any size
    - Especially useful for smaller ensemble when goal is to make ensemble appear larger than really is
- Maintain harmonic momentum
  - : Utilize double stops to fill out chord voicings if necessary
  - : Watch for dilution of string ensemble sonority

2 Larger ensembles (12 – 14 players)

- Can sustain five separate lines, 6 if *necessary*
- Rule still applies that the more string players on a line the more sonorous the line
- For soft luminous sound which floats over rhythm section pulse without interfering with motion
  - : Avoid extreme low register
  - : Chordal roots are used *only* when they fit into the flow of the voicing structure

- Maintain the principle of internal resonance
  - : Ensemble is voiced as a single unit
  - : But contains two separate but mutually dependent entities (Vln ←→ Vla / Vc)
  - : Integrity of these two groups contributes to the sonority of the whole ensemble
    - – Often recorded on separate tracks panned left & right
    - – Each must project a satisfying sound independent of the other to produce a homogeneous blend (despite electronic Lft / Rt separation
    - – Evan more important when separated into 'Lft Hand / Rt Hand' mode
  - : Reinforce lead line octave lower for climax
    - – Overall ensemble sound is strengthened
    - – Shift from 'sul tasto' to a natural sound if necessary

3 Scoring for 16 players is identical except for distribution of players in any given chord

- 6 note chord (especially in high register) is full bodied and vibrant
- Each of the two cello lines is now doubled providing more luster and resonance than smaller group
- If Vc's are divided into 3 lines, double the top line unless one of the other lines is important melodically
- Can be divided into 7 lines or even 8
- Delicate rustling effect can be produced with whole string section sustaining a trill sul tasto (Impressionistic device)
- Can put 4 Vc's in unison producing a dark robust sound (Stravinsky's Firebird Suite)

4 Adding 4 Viola (20 players)

- Produces a good deal of sonority
  - : Suitable for recording situation with prominently featured strings
  - : Mancini, Percy Faith, Montenegro
- Voicing is essentially the same as for 16 players
  - : Could divide into 9 or 10 lines but results in loss of sonority
  - : Large enough to provide antiphonal effects (statement & response)
- Considerable increase in sonority
  - : Two Vln lines with 6 players each
  - : Vla line with 4 players
  - : Two Vc lines with 2 players each

EXAMPLES FOR LISTENING / STUDY IN VERY LARGE STRING ENSEMBLES

Tschaikovsky	Serenade in C
Brahms	The symphonies
Debussy	Nocturnes
Barber	Adagio for Strings
Bloch	Concerto Grosso No. 1
Hindemith	Mathis der Maler
Vaughn Williams	Fantasia on a Theme of Thomas Tallis
Copland	Two Pieces for String Orchestra
Prokofiev	Fifth Symphony (3rd Movement)
Bartok	Music for Strings, Percussion and Celeste
Henze	Fantasia for Strings

VIII COMBINING STRINGS WITH WINDS

A. CAUTIONS

1 Careful to voice ensemble to create a balanced blend free of distortion
2 Disparity of acoustical weight between wind and string instruments
3 Can be done electronically but main goal should *always* be acoustical balance during actual performance

B. COMBINATIONS

1 Single Flute to a Vln lead line

- Thickens the string line considerably
- Sacrifices purity for extra body and intensity
- Regulate balance with dynamics

2 Clarinets

- Can sometimes be used to thicken string lines
- With Vlns
- With unison Vla or Vc lines (imparts a 'woody' flavor)

3 French Horn

- Adds considerable body and thickness to a unison Vc line
- Can generate a good deal of emotional intensity
- Should be used sparingly

4 Three Horn Section

- Voiced in low middle register can be effective in providing change in tone color when alternated with Vla's & Vc's
- Can be effectively combined with strings in mixed voicings
  - : Internal resonance is very important
  - : Each element of horns & strings should sound complete within itself

5 Large mixed ensemble (Reeds, Brass, & Strings)

- Strings are the weakest element
- Voice as simply as possible in the high register in a concerted chord
- Maintain as much string tone as possible

With brass playing syncopated Jazz figures strings sometimes scored even more simply

EXAMPLES FOR LISTENING / STUDY

Respighi	Pines of Rome
Mussorgsky	Pictures at an Exhibition (orchestrated by Ravel)
Stravinsky	Firebird Suite
Walton	The second symphony

4 THE RHYTHM SECTION

I BACKGROUND

A. MID 1950'S STANDARD RECORDING RHYTHM SECTION CONSISTED OF PIANO, STRING BASS, GUITAR, AND DRUM SET

1 General level and direction of commercial recorded music tended to be fairly consistent
2 This basic unit was adequate for most sessions

B. NEW MUSICAL INFLUENCES

1 With advent of Rock n Roll the standard rhythm section sound was affected with new technology

- Electric guitars with more sophisticated amplification
- Electric bass replaced the acoustic bass on some sessions
- Bass drum heads became tighter, Tom tom heads looser
- Electric keyboard instruments with new expanded sounds palette

2 The advent of the bossa nova trend in the 1960's added another dimension

- A jazz influenced music
- Use of Classical guitar
- Incorporation of Percussion EFX

3 Folk music revival brought the simple, unamplified, acoustic sound to the studio environment
4 Hybrid musical styles appeared with Jazz-rock, Folk-rock, etc.

C. RESULTED IN THE ALL PURPOSE RHYTHM SECTION OF THE 50'S EVOLVING TO MEET THESE VARIED NEEDS

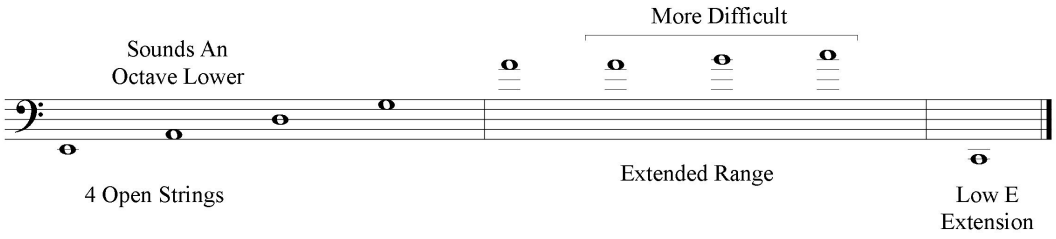
II SECTION INSTRUMENTS

A. BASS

Double Bass Electric Bass

1 Foundation not only of the rhythm section but the whole recording orchestra

- Recording techniques make the Bass much more audible and prominent than in live performance
- Because of new prominence leave the Bass sound clear and unclouded by other instrument (especially with virtuoso performer)



2 Two different basses are in use

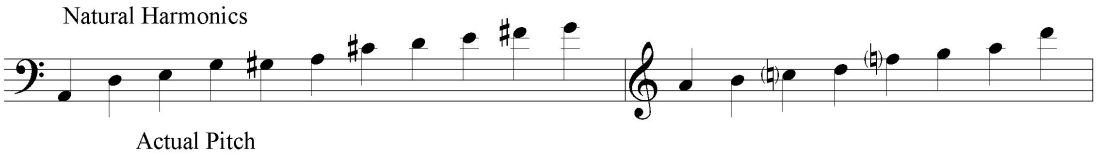
- Acoustic Bass
  - : AKA unamplified upright, stand up, concert double bass, contra bass, string bass, bass Viol
  - : Used primarily in Jazz, Ballads, and Bossa Nova
  - : Normally used as a component of the rhythm section
    - Played pizzicato with fingers
    - But also as a sustained orchestral voice when played arco

: Double stops are possible

– P4th or P5th most easily playable and sonorous
– Triple & quadruple stops are difficult and no practical value

: Natural harmonics & artificial in extreme high register are possible

– Produces a delicate sound
– Useful for solo work but impractical in orchestral passages



: Possible to mute the String Bass

– As with Vln mute it is placed over the bridge
– Used (almost exclusively) where an overall 'veiled' sonority is called for

• Electric Bass

: Has same range as acoustic bass and is played only pizzicato
: Give rhythm section completely different feeling – crisper with more bite
: Capable of runs & effects which would be extremely difficult or impossible to duplicate on Acoustic Bass

3 Use

• Style of music dictates which instrument to use
• Better to indicate chord symbols for player rather than a notated line

: Player can usually improvise a better line unless a specific effect is called for
: Chord symbols *must be complete* with all modified tones

B. GUITAR

Solid Body Electric

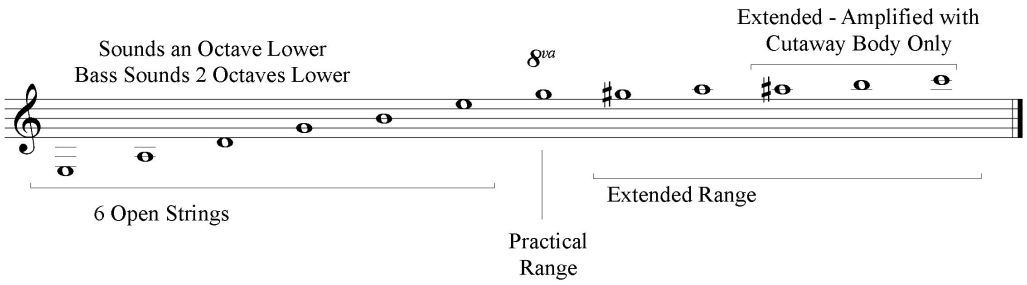
Arch Top Jazz

Rhythm Jazz

Classical

Flamenco

Folk



1 Recording Guitarist has many effects available

- Arranger should be specific as to effects required for session
- Also many different Guitar types

2 Unamplified Acoustics

- Classical Guitar
  - : Almost always unamplified
  - : AKA Gut string, Round hole gut string, Spanish, Spanish gut, Bossa Nova
    - Played with fingers producing a 'lovely' warm sound and strung with nylon strings
    - If single string solo lines predominate can be picked for clarity or picked in combination with fingers
  - : Charlie Byrd, Laurindo Almeida
- Flamenco Guitar
  - : Similar to the classical guitar with smaller body and lighter strings
  - : Produces a somewhat brighter sound than classical
- Folk Guitar
  - : AKA Round hole steel string
    - Played unamplified with pick or fingers (or combination) and strung with steel strings
    - Used for Folk, Folk-rock, and Country music
  - : Simon & Garfunkel, James Taylor, Peter – Paul – and Mary
- 12 String acoustic
  - : Strung with 6 pairs of steel strings the top 2 sets in unison, the bottom 4 sets in octaves
    - Played with pick, fingers, or combination
    - Produces a beautiful ringing sound resembling a harpsichord and in extreme high register a mandolin
    - Especially effective as rhythmic support in Folk or Folk-rock
  - : Mamas and Papas
- Rhythm Guitar
  - : AKA 'f' hole guitar
    - Used exclusively as a component of the rhythm section, never as a solo instrument
    - Strung with bronze strings played with a pick producing a biting percussive sound
  - : Freddy Greene with the Count Basie Orchestra

- Summary of unamplified acoustics
  - : Sound best in a key which enables the use of as many open strings as possible
    - G – D – A – E
    - Takes advantage of the overtones and characteristic acoustic guitar properties
  - : Can be tuned up or down a semi-tone to accommodate other keys and still utilize open strings
    - Gb – Ab – Db – Eb – Bb – F
    - Also done with a capo
    - Treated as a transposing instrument in such cases to avoid guitarist having to transpose part while playing

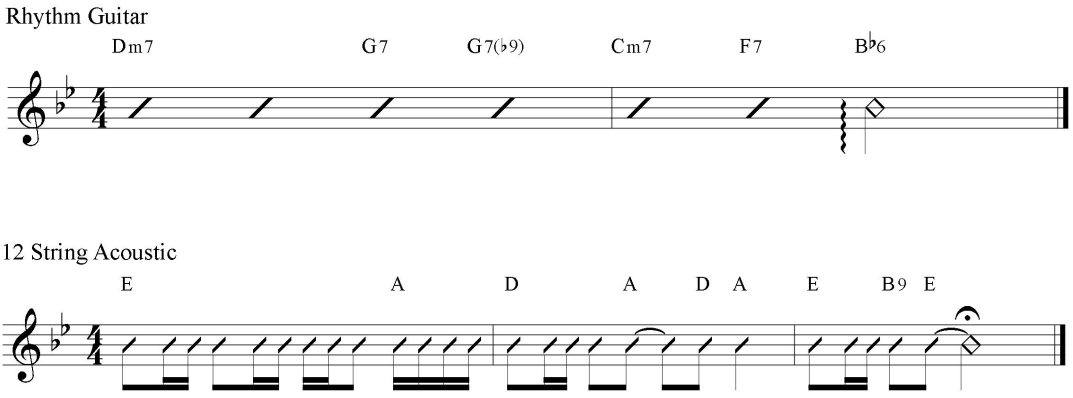
3 Amplified Guitars

- Combination Electric Guitar
  - : AKA Combo Guitar
  - : Bridge between acoustic and electric guitars
    - Essentially a 'f' hole Rhythm Guitar with pickups fitted over the body attached from a base on the neck or tailpiece
    - Creates a rounder warmer tone than pure electric
    - Unamplified can still approximate sound of true Rhythm Guitar
  - : Pioneering instrument of the Jazz Guitarists – Charlie Christian, Jim Hall, Johnny Smith, Chuck Wayne
- Hollow Body Electric
  - : AKA Jazz Guitar
  - : Almost always played with a pick producing a full rich sound
    - Pickups are incorporated into the body
    - Amplified and can be processed to alter the sound considerably
    - At the same time the hollow body construction makes use of the natural sound properties of the wood
  - : A mellow all purpose instrument especially suited for Jazz playing
  - : Blends well with other instruments and can effectively double Sax, Tbne, Cello, Vibes, or Piano
- Solid Body Electric Guitar
  - : AKA Rock Guitar
  - : Essentially a slab of wood with built in pickups
    - Must be amplified as it produces no sound of its own
    - Particularly effective with various distortion devices
  - : Can be made to approximate warmth of a hollow body by adjusting the volume and tone controls

- 12 String Electric
  - : Strung the same as acoustic counter part but with a solid body
  - : Used chiefly for solo lines requiring a slightly twangy and ringing sound or harpsichord background effects
- Dan Electro Six String Bass Guitar
  - : Don't confuse with Electric Bass
  - : Range virtually identical to Electric Bass it doesn't produce the same guttural and biting quality

4 Notating Guitar

: Series of chord symbols above the directed rhythm pattern



: To indicate Guitar solo use 'Solo ad lib' at start of solo and 'End solo' at finish placed above the chord line

: Chords *must* be indicated completely as with bass

- Can mislead guitarist as to musical intent if not
- Can create a disparity between the guitar and rest of ensemble

: To indicate a guitar solo line in Chordal style

- Provide a melody line with the chord symbols above
- Include 'rolled' (slowly strummed) melody/chord with wavy line

: Because of instrument tunings some voicings are impossible to play and care should be taken to accommodate these limitations

: Passages over 'G' or 'A' above staff sometimes better written octave lower with an '8va' indication

5 Harmonics

- Give a veiled muted quality
  - : Natural harmonics are possible on any guitar
  - : Artificial harmonics possible by touching string and plucking at same time
    - – Best reserved for quiet solo passages
    - – Effective on Jazz Ballads for changing color
- Jim Hall, Tal Farlow
- Best to indicate harmonic the same as for violin

C. Other Plectrum Instruments

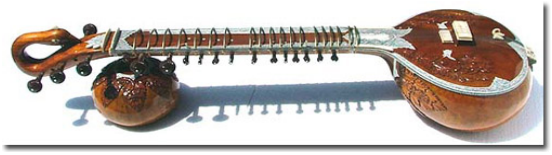
Mandolin

Banjo

Dobro

Pedal Steel

Lap Steel

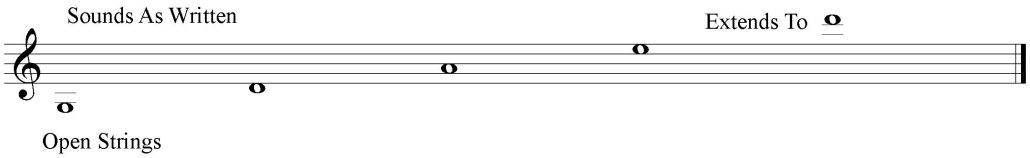


Sitar

Auto Harp

1 Mandolin

- 4 pairs of wire strings tuned in unis0n
- Produces a twangy slightly out of tune sound
- Used for ‘Italian’ flavor



2 Banjo

- Essential to Bluegrass, Country, and sometimes Dixieland
- Entrusted to a specialist
- Requires just a set of chord changes unless a specific line is required

3 Dobro

- AKA Bottleneck or Slide Guitar
- Acoustic instrument pitched like a guitar (special tunings are often employed) with a metal plate attached to the body
- Played with a steel bar in left hand and fingered or picked with the right hand
- Produces a characteristically Country sound
  - : A solo or fill instrument very effective in the proper context
  - : Can be approximated with other acoustic guitars using a metal bar or pinky slide

4 Electric Pedal Steel Guitar

- Used in Country or Hawaiian flavored music
- Played horizontally with multiple necks utilizing a steel bar and multiple finger picks
- Do to long sustained swoopy glissando characteristics it can dominate any situation it is used in

5 Sitar

- Soul of Indian Music
- Demands years of dedicated study

6 Auto Harp

- Small hand held instrument strung with metal strings
- Uses keys to depress strings for chords and is strummed
- Effective for simple Folk music

D. Drums

Full Kit

Bass Drum

Floor Tom

High Hat

Medium Tom

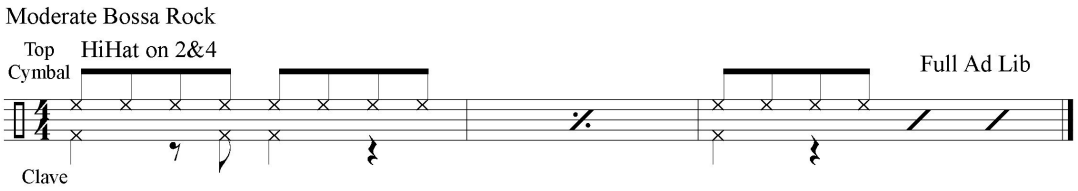
Ride Cymbal

Snare

1 Basic kit contains Bass Drum, Snare, Tom-Toms, HiHat, and two or more Cymbals
2 Notating the set can become confusing as usually placed all on one staff

- Arrangers write as simple a part as possible
- Notation elements

: General rhythmic pattern
: Style indication
: Leaves to judgment of drummer for fills and special effects
: Syncopated passages like Big Band Shout chorus is notated as simply as possible



E. PERCUSSION

1 Un-pitched


Bongos

Cabassa

Concert Bass Drum

Gong


Conga


Guiro


Shaker


Tambourine


Triangle


Woodblocks

- Miscellaneous small percussion
  - : Usually handled by a specialist
    - – Some specialize in Latin Percussion
    - – Best to rely on the Latin specialist's taste and experience unless a definite pattern in required
  - : Functions to provide special colors and extra emphasis to the overall rhythm section sound
  - : Can include Tambourine, Shaker, Bongos, Conga Drums, Gourd (or Scrapper) Woodblocks, Cabassa, and Triangle
- Concert Bass Drum
  - : Must be handled with care
  - : Has great carrying power
- Gong
  - : Sized from small to very large
  - : Use sparingly and can ring for several minutes if not dampened

2 Pitched

Bass Marimba

Marimba

Chimes

Chinese Bell Tree

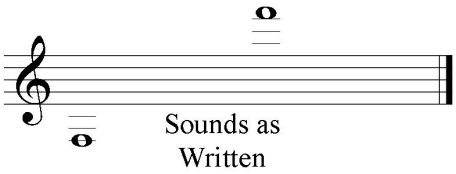
Tuned Bongos (Boo-Bams)

Timpani

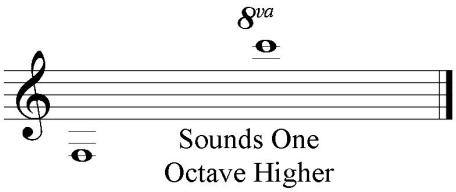
Vibraphone

Xylophone

- Vibraphone (Vibes)
  - : Effective doubling a flute line or in unison/octaves with guitar or harp
  - : Sound can be modified by varying the hardness of the mallets and changing the speed of the vibrato
  - : 4 mallet chords are possible – extremely chromatic passages should be avoided except at slow tempos

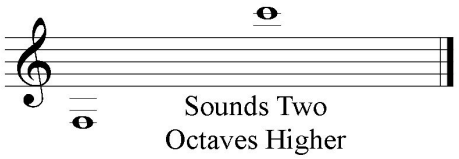


- Xylophone
  - : Useful in unison with flute, pizzicato strings, and heavy brass



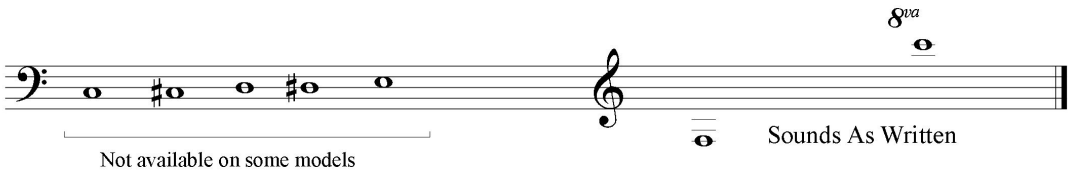
- Bells (Glockenspiel)

  : Useful in unison or octave with flute or piccolos and ‘delicate’ octaves with harp



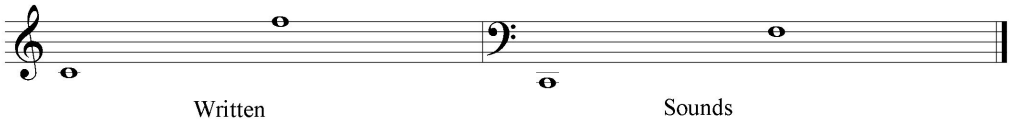
- Marimba

  : Very good recording instrument
  : Especially good with bass flute and 2 / 3 / 4 mallet tremolo chords



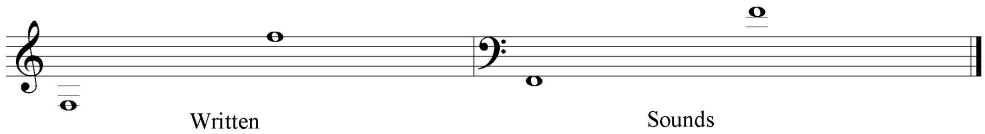
- Bass Marimba

  : Large cumbersome instrument played with heavily padded mallets
  : Low & soft thumping sound with no sustain
  : Effective in situations calling for an exotic touch
  : Arranger must be very careful to allow plenty of aural room as instrument can be smothered easily

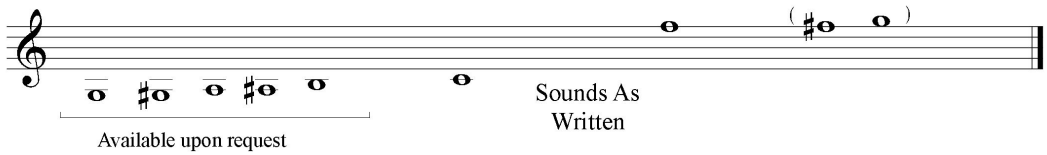


- Tuned Bongos (Boo-Bams)

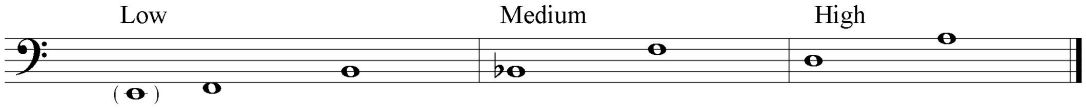
  : A set of small chromatically tuned plastic heads attached to wooden resonators and mounted on a frame struck with marimba mallets
  : Has no sustain useful only for staccato effects



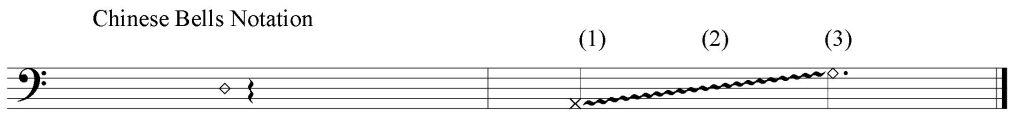
- Chimes
  - : Harmonic overtones tend to distort & blur the shape of melody played on the instrument
  - : To compensate avoid rapid passages and double line with another instrument



- Timpani (Kettledrums)
  - : Equipped with pedals making gliss possible
  - : Have great carrying power and must be handled with care in the recording studio
    - Can cover the other instruments
    - Use softer volume markings than rest of the ensemble
  - : Bartok's "Music for Strings, Percussion, and Celeste"



- Chinese Bell Tree
  - : Series of small bells arranged on a frame either High ←→ Low or Low ←→ High
  - : Bells do have pitches but barely discernable
  - : Useful as a color device



3 Keyboards

Acoustic Piano

Fender Rhodes

Harpsichord

Digital Piano

Celeste

Keyboard Glockenspiel

Hammond Organ

Leslie Speaker

- Piano
  - : Acoustic
    - – Has the widest range of any acoustic instrument

: Fender Rhodes Electric Piano

- Popular for recording
- Smaller range than Acoustic
- Less percussive with a much mellower sound than Acoustic
- Can sound very much like a vibraphone with similar adjustable (speed & intensity) vibrato

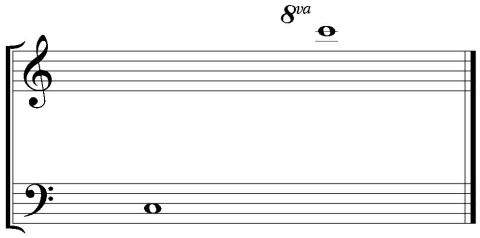
: Piano notation consists of a series of chord changes with style indications (solo ad lib, single note fills – high register, block chords, etc) unless a definite line or chord voicing is required which is fully notated

- If bass player is playing a written line include this as a 'cue' line for the pianist

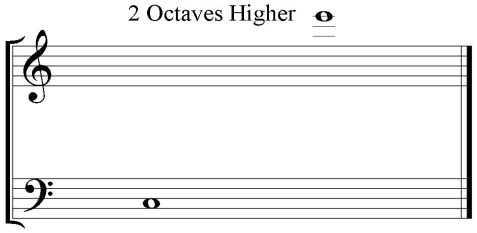
- Pianist is also expected to play Celeste

: Keyboard Glockenspiel

- Harder attack than Celeste
- Sounds similar to mallet played glockenspiel but with quicker dampening action

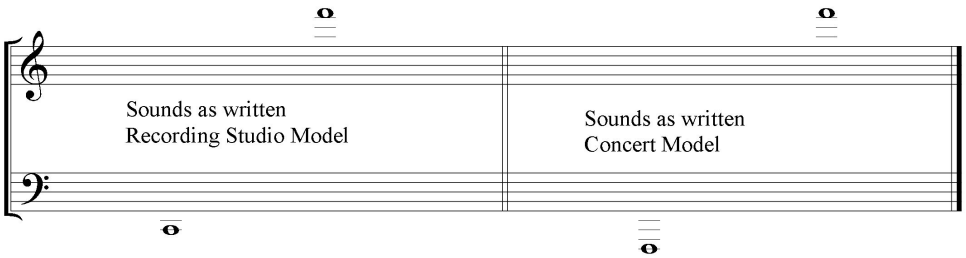


Celeste Range



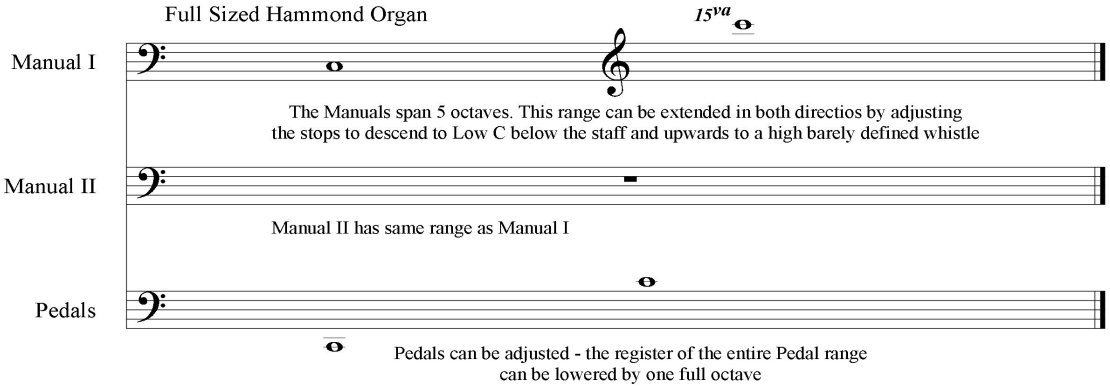
Keyboard Glockenspiel Range

- Harpsichord
  - : Acoustic
    - – Delicate timbre can be modified slightly through the use of drawbars
    - – Some models have two keyboards or manuals (referred to as ‘double bank’) which can be coupled to produce octaves
  - : Electric
    - – Projects a brighter more substantial sound
    - – Sacrifices delicacy for vibrancy and sustaining power



- New Keyboard Instruments (Synths)
  - : Should be investigated for sound combinations
  - : Player familiar with a particular instrument can help arranger in navigating through the tonal possibilities
  - : As with electric guitar primary sound generation can be modified with outboard devices

- Organ
  - : Fairly complicated instrument usually handled by a specialist
  - : Can be treated as part of the rhythm section to add extra punch
    - – Notated like piano with addition of staff line for pedals
    - – Added indication is type of sound (quasi vibes, shrill, etc.) to adjust ‘stops’
      - + Trust the organist to find best stop combination to suite the arrangement
      - + Can be mimicked by electronic keyboards



5 VOICES

I TRADITIONAL SATB

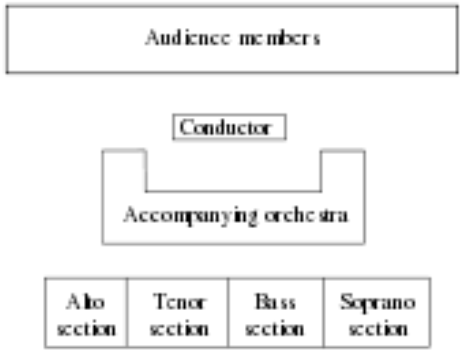
A. LARGE GROUP

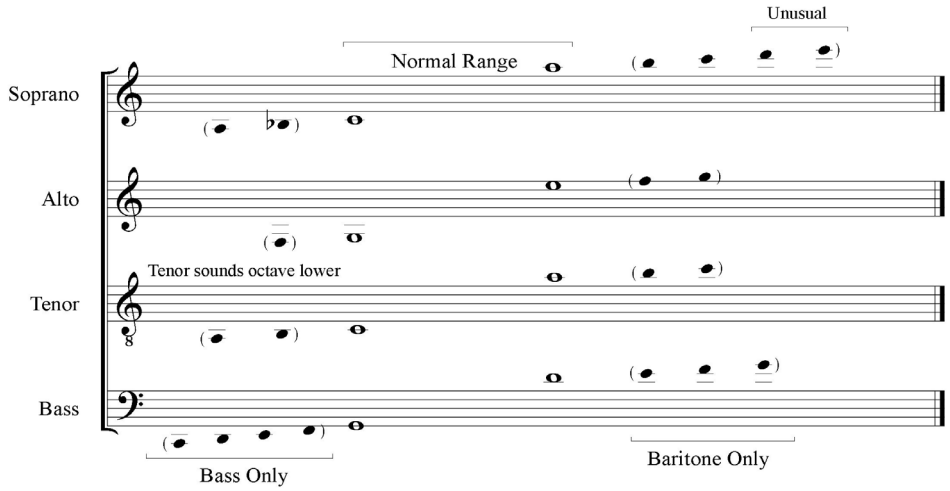
1 Divided into 4 lines each corresponding to a different vocal quality

- Each line moves logically according laws of proper voice leading while contributing to the sonority of the chordal voicing
  - : Larger group (20+) can resemble large string ensemble
  - : Still used in commercial recordings of Anita Kerr Singers, Ray Caniff, Henry Mancini
  - : Modern Harmony usually necessitates more than 4 lines with Soprano and Tenors usually the voices expanded

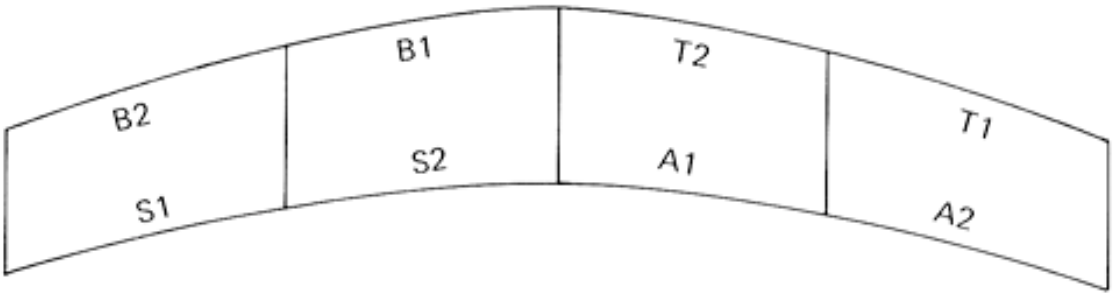
2 Staging

- Standard Stage Voice Positions

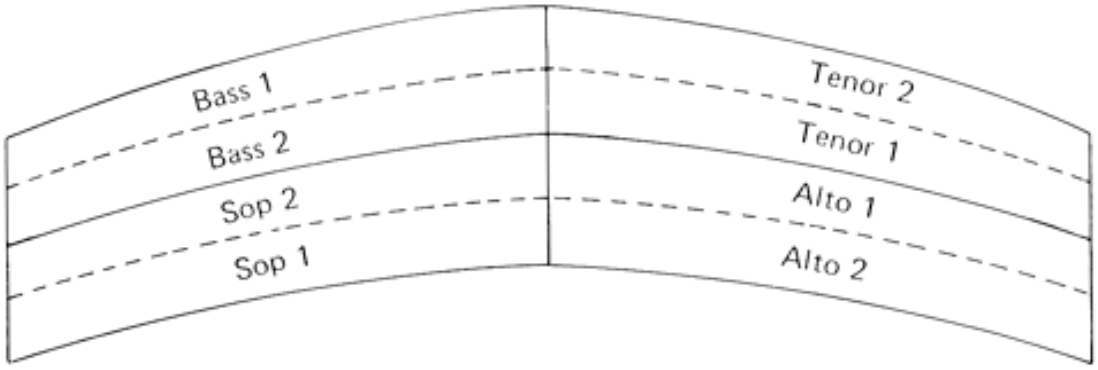




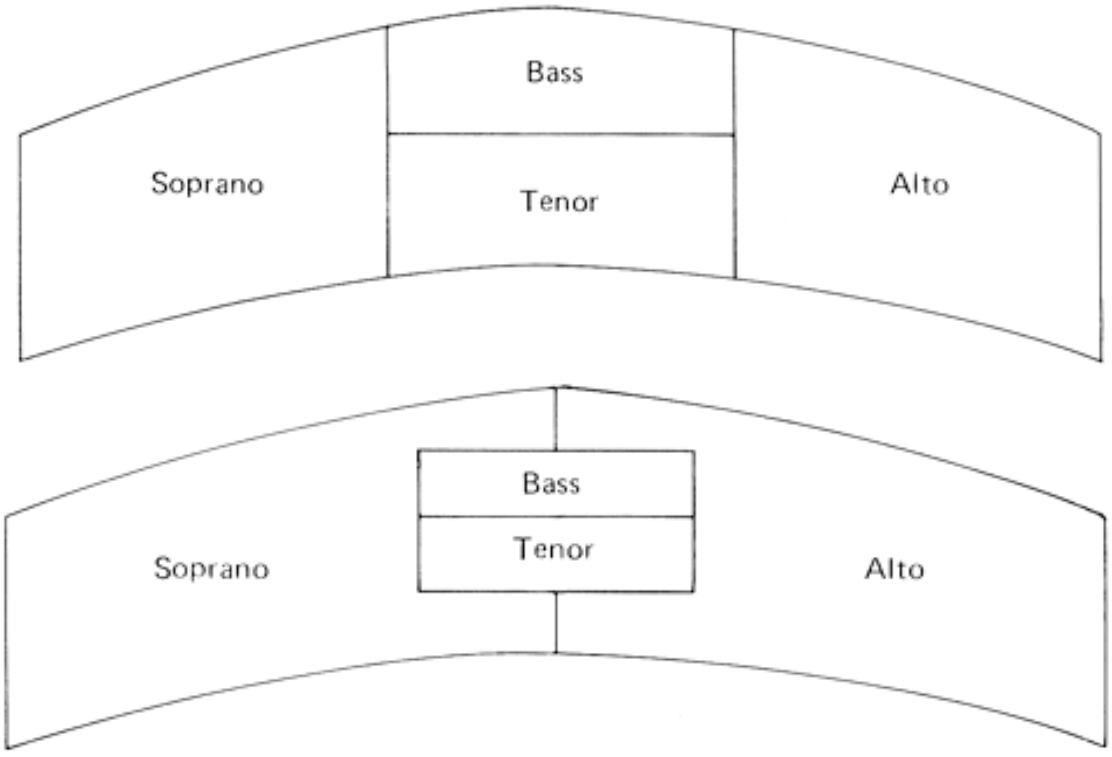
- Variations
  [Lamb, Gordon. "Chorus Seating Arrangements." Connexions March 8, 2010. http://cnx.org/content/m33991/1.1/.]



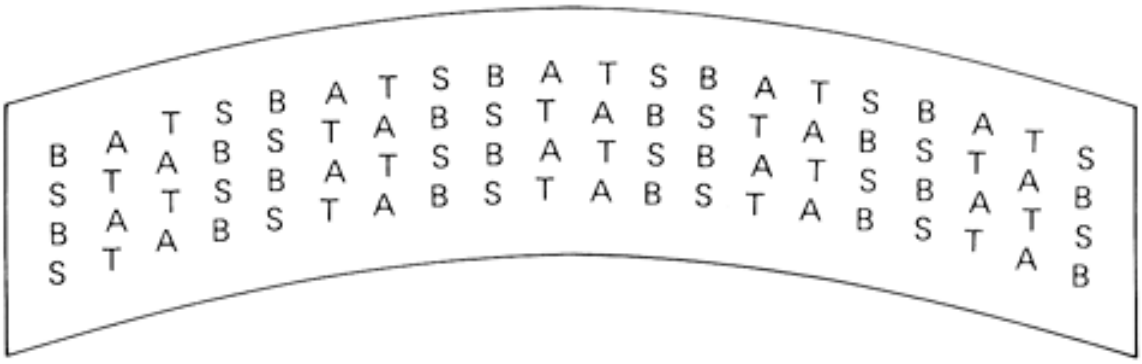
The second bass and first soprano, as outside parts, are lined up together emphasizing the polarity of the two parts, often an aid to good intonation. The baritone and second tenor parts are next to each other so you can assign help to and from either part. The low tenor parts can be bolstered by baritones, who, in turn, can receive help on high baritone passages. The same thing is true of the second soprano and first alto parts. The second alto is also directly in front of the first tenor so several voices may be added when high tenor parts need assistance. A choral work in eight parts will work with this arrangement as will four-part music. This arrangement is highly recommended for advanced, well-balanced choirs.



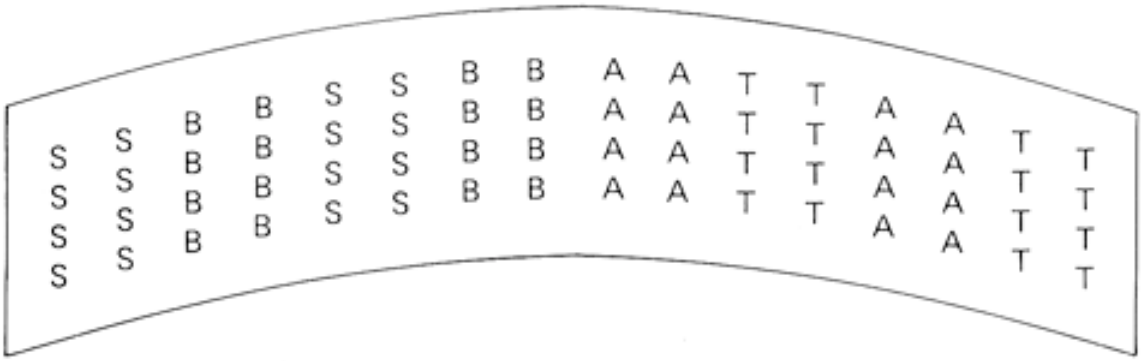
Similar to the previous arrangement, having many of the same advantages. It does not have the proximity of second alto and first tenor as the first grouping but all the other advantages are present. An additional feature, however, is that the entire second soprano section, for instance, is heard completely across the soprano side of the choir. The same is true of the other parts when it is necessary for them to divide. Another asset is the placement of the second tenors and baritones, and the second sopranos and first altos. When the choir is divided for eight parts a director will have made certain voice assignments to balance that particular choir. When music divides into three women's parts and three men's parts the eight-part division will not provide a satisfying balance. When this happens, a new assignment of voices is necessary and the second arrangement works well for this. The middle parts of both the women's and men's voices are next to each other allowing for a natural grouping into six parts.



Placing the men's voices in the middle and front of the choir is a good idea when there is a weakness in the tenor and bass parts, or when there simply are not enough of them. There is no need to worry about divided parts because this arrangement is best for a young choir doing two-, three-, or four-part music. Advanced choirs often do not blend as well in this ar-rangement as when the men's voices are placed behind the women. If the tenors are few in number and weak, it may be necessary to place them across the front row, in front of the basses. If there are many more women than men, the women can continue a row behind, and even in front of, the men, thus placing the men in a pocket in the front center of the choir



The mixed or scrambled arrangement is best used for homophonic music, particularly that of the eighteenth, nineteenth and some of the twentieth century, (particularly twentieth-century music in which considerable individual singing is required). Polyphonic repertoire may suffer from this grouping because the clarity of each part line demanded in the music can be lost in the scrambling of the sections.



A modified scrambled arrangement retaining some advantages of section placement, particularly part security and part definition. This arrangement is often most successful with intermediate level choirs.

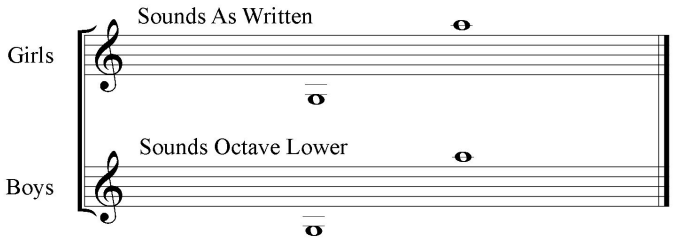
B. SMALL GROUPS

1 3 Soprano, 3 Alto, 2 Tenor, 2 Bass

- For recording this can be over dubbed to create a large group SATB
- Resembles a classical string quartet in spacing and general style

2 3 to 6 Voices

- Majority of recording vocal group size
- Distinctions between traditional categories of SATB become blurred
- Parts are usually written on 2 staves (Boys / Girls)
  - : Both parts are notated in Treble clef
  - : Ranges are somewhat restricted



C. COMMERCIAL VOCAL GROUP STYLES

Other styles like the Beatles were based upon texture of individual voices rather than voicing structure

1 1940's Pied Pipers

- Similar to section of 5 saxophones
- Voiced in close position
- Melody doubled an octave lower

2 1950's Four Freshman

- Similar to section of 4 trombones
- Combination of close and semi-open voicings
- Hi-Los used this sound as a basis but embellished with extensive chromaticism and cross voicing

3 1960's Beach Boys

- Used Four Freshman sound a basis
- Simplified harmonically
- High falsetto lead

4 1960's Mamas & Papas

- Two unison lines (high ←→ low / 2 girls ←→ 2 boys)
- Essentially a two line technique of melody (boys) and counterline (girls)

5 1970's Carpenters

- 4 part close harmony
- Top 2 girls and bottom 2 boys
- Sung in a light & airy style
- Overdubbed at least 3 times

6 Soul – Girl trios (Supremes & Raelettes)

- Simple triads
- Individuality and excitement in 'funky' inflections added to melodic phrasing

7 In Combination with Instruments

- Ray Conniff
  - : Girls double unison trumpets
  - : Boys double Trombones
- Jackie & Roy
  - : Jackie doubled with flute
  - : Roy doubled with Tenor Sax
  - : Added vibrancy and body

6 MELODIC CONSIDERATIONS

I MELODIC MOTION

A. BACKGROUND

1 Specific instrument combination when voiced in specific ways

- Gives an arrangement individuality
- Can create a recognizable style

2 Melodic motion can do the same

- Melodic lines an arranger gives to an instrument or instrument grouping should be indigenous to the character of that instrument or grouping
- Every instrumental group has its own distinctive character and arranger needs to be aware of various capabilities and shortcomings

Cross-cueing music for shows and acts with as much doubling as possible

Done to provide full sound with a minimum ensemble – gives a bland and impersonal sound

B. CONSIDERATIONS

1 Arranger will adjust melodic thinking to suit the ensemble currently being scored
2 The character of the tune being scored
3 The artist who will perform the score

- Must know the artists style intimately
- What artist is trying to say musically
- Past directions and current plans for the projects

II TECHNIQUE

A. GENERAL

1 Let the tune lead the way for the arrangement

- Lines can be based on melodic context of tune itself
- Recurrent figure – unrelated to melodic content but off-setting the melodic content

  : Repeating this can unify score and help give it shape

2 Don't always have to start at the beginning of arrangement

3 Always keep the ear ‘interested’

- Not attention getting to distract from the artists performance
- Enough to provide ‘flow’ to carry from one bar to the next
  - Counter melody
  - Enough to add contrast to whole & half note chordal movement
- Use of contrapuntal techniques
  - Inner voice movement
  - Unison & octave doubling
  - Passing tones
  - Contrary motion

B. SPECIFICS

1 Lead line

- Should always have character even in subtle background role
- Should *not* have background lead line interfere in any way with the solo lead line as can distract from aural focus
- Should fill in to make overall tonal picture more complete

2 Voice Leading

- Essential to good arranging
- Gives each individual part in ensemble a meaningful and interesting melodic line
- Provides a steady & logical flow
- Strictly a matter of craft and is either good or bad
  - Each line should be musically meaningful
  - Sometime confronted with choice of best voice leading and best chord spacing
    - No set rules about this
    - Generally faster the tune use voice leading
    - Need for sudden harmonic lift ok to sacrifice smooth voice leading
    - Highly chromatic idioms generally emphasis the exotic harmonic treatment over proper voice leading

7 THE IMPORTANCE OF THE LYRIC

I CAUTIONS

A. WORDS

1 The words can have a decided effect on the manner in which the arrangement is scored

2 The arrangement should at all times underline and support the words

- The song should be understood
- Arranger's job to make sure this is achieved

3 Background should in no way compete for the listener's attention

B. VOCALIST

1 Tempo, volume, and general style of an arrangement should be dictated by the vocalist's capabilities

- Work with strengths
- Compensate for shortcomings

2 Arranger must develop the ability to support and inspire the vocalist

- Nelson Riddle for Frank Sinatra
- Mary Paich for Mel Torme
- Peter Mitz for Barbara Streisand

II GUIDE LINES

1]	What is General Tone & Character of the Song	Happy, sad, comic, etc	
2]	How is the artist going to interpret the lyric	'Go with the song' 'Go against the song'	Barbara Streisand → "Happy Days are here again"
3]	Does it contain enough imagery to allow for orchestral effects and colors with out overpowering the words	Quotes for dramatic or comic effect	Always be ready to adjust the score in the studio should the effect prove not successful
4]	If a well known song how can a new interpretation be constructed without being forced or overdone		
5]	Extra musical considerations	Christmas song would need a certain attention to tradition	Historical period sound i.e. "Greensleeves"
6]	Is song weak in some respects that need to be overcome	Melody, harmony, lyric, etc	
7]	What type of ensemble will best underline the message the song is trying to convey	If restrained in choice of ensemble must be able to compensate	

Be sure you *understand* the lyric – its inherent character. Let it *tell you* the message and then decide which devices would best serve to underline this message – and *then communicate* it to the listener

It is NOT enough to know if an arrangement works – or not – you must be able to know WHY