

A Roadmap to Successful Intonation

TUNING FOR WIND INSTRUMENTS

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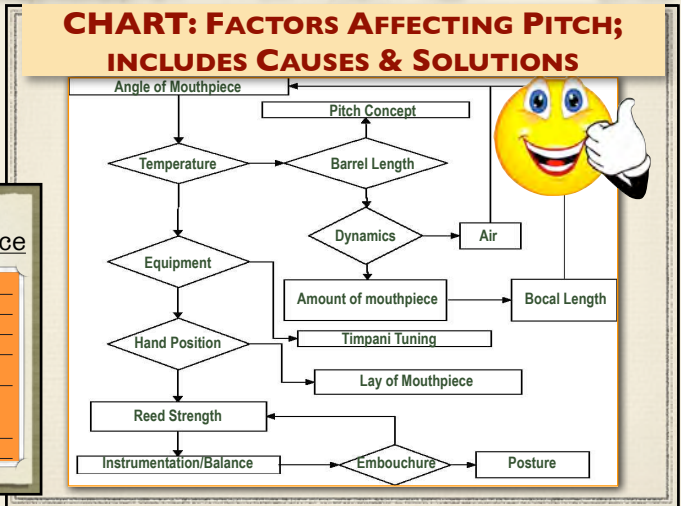
Discover the newest resources for understanding instrument pitch tendencies. This clinic will demonstrate common tuning problems while providing resources to improve the pitch within each section of your ensemble.

71 TUNING TRUTHS

Long Notes & the Mouthpiece

Table 20: Recommended Pitch Production on Mouthpiece / Reed Alone

INSTRUMENT	CONCERT PITCH ON MOUTHPIECE / REED ALONE
Flute	- A on stopped or open head joint
Oboe	- Reed - crown should sound a B or C
Clarinet	- Soprano: C - Bass: F#
Saxophone	- Soprano: C - Alto: A - Tenor: G - Baritone: D
Bassoon	- Reed - crown should sound a G or A



Tuning up the Fundamental Ladder

Principle: Each instrument enters in corresponding order from lowest to highest and "fits" their sound inside the sound of the instrument before them.

Tuning Order:

- Tuba
- Bass Trombone
- Bassoon
- Bass Clarinet
- Baritone Saxophone
- Euphonium
- Trombone
- Tenor Saxophone
- Alto Saxophone
- Horn
- Trumpet
- Clarinet
- Oboe
- Flute

Listening down, for the pitch.
 Beatless tuning
 Adjustment to **Balance**

Alternate Fingerings

(Using alternate fingerings will result in variations of timbre from original fingerings.)

- 4th-valve** can be substituted for 1st- and 3rd-valve combination.
- 3rd-valve** can be substituted for 1st- and 2nd-valve combination.
- 2nd- and 4th-valve** can be substituted for 1st-, 2nd- and 3rd-valve combination.

Compensating 3 and 4 valve instruments. The instrument "compensates" for the inherent sharp valve-combination of first and/or second used in combination with the third-valve, by adding additional length by means of loop-tubing.

The **fourth valve** on euphonium and tuba compensate for the most out-of-tune notes, and provides for extended lower range (lowers the fundamental a fourth).

Young **trombonists** often play 2nd and 3rd positions too long (thus flat), and 5th, 6th, and 7th positions too short (thus sharp).

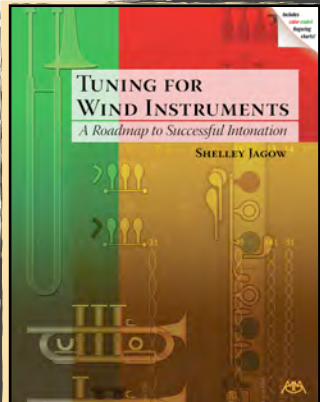
Valve brass instruments may use alternate fingerings in the harmonic series to assist in adjusting pitch for certain chord positions, but trombones should use regular slide positions and merely adjust length of **slide**. [Example: In concert Ab, a trumpet player has a fourth-line D in the staff; this note is the M3 of the chord and could be fingered 1 versus 13 to play a flat concert C, which brings it into tune.]

On woodwind instruments, closing **keys/holes** can lower a pitch, and opening keys/holes can raise a pitch.

Pulling the **barrel joint** on the clarinet will slightly affect the overall pitch, but significantly affects the pitch of the throat tones.

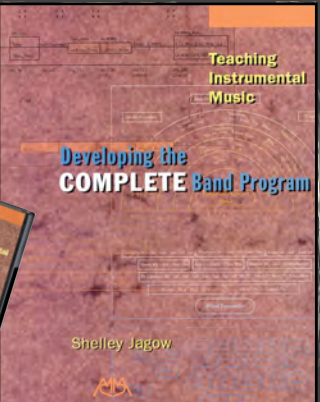
Make fingering decisions based on priority of facility, timbre or pitch.

Typically we select a fingering that performs with best pitch and timbre for slower passages, and choose a fingering that performs with best technical facility for faster passages.



RESOURCES:

- Teaching Instrumental Music: Developing the COMPLETE Band Program** by Shelley Jagow (Meredith Music, 2007).
- Teaching Instrumental Music: Developing the COMPLETE Band Program - DVD** by Shelley Jagow (Meredith Music, 2008).
- Tuning for Wind Instruments: A Roadmap to Successful Intonation** by Shelley Jagow (Meredith Music, 2013).



TUNING FOR WIND INSTRUMENTS

Equal v.s. Just

Equal-Tempered Tuning	Just/Pure Tuning
Approximate Usage = 90%	Approximate Usage = 10%
Most wind band music is largely melodic in nature and thus ET is recommended for pieces of faster tempo, and/or many key modulations.	Just tuning should be used for all chorales, slower lyrical sections that have sustained cadential points, final chords of any tempo, or any sustained harmony where there is time for the ear to hear beats.
ET has equal sized seconds (100 cents) that makes it impractical for harmonic (vertical) tuning.	JT has unequal sized seconds that makes it impractical for melodic (horizontal) tuning.

Students must learn the pitch tendencies of their instrument.

Intonation charts for every instrument!

BASSOON INTONATION CHECK-SHEET

INSTRUCTIONS:
1. Properly warm up your instrument and then tune to A = 440.
2. Sustain a middle note on your instrument and a friend will analyze the tones.
3. If the average of the notes is that more than 3 cents, write the number of cents flat, or -12.
4. If the average of the notes is that more than 3 cents, write the number of cents flat, or -12.
5. Repeat step #4 for every note within the range of your instrument.
6. When you have completed the Check Sheet, go to the back of the book and use the solutions to play them in tune by improving tone, breathing or if you have difficulty getting the pitch correct, use the solutions.

HORN INTONATION CHECK-SHEET

INSTRUCTIONS:
1. Properly warm up your instrument and then tune to A = 440.
2. Sustain a middle note on your instrument and a friend will analyze the tones.
3. If the average of the notes is that more than 3 cents, write the number of cents flat, or -12.
4. If the average of the notes is that more than 3 cents, write the number of cents flat, or -12.
5. Repeat step #4 for every note within the range of your instrument.
6. When you have completed the Check Sheet, go to the back of the book and use the solutions to play them in tune by improving tone, breathing or if you have difficulty getting the pitch correct, use the solutions.

Just Intonation Formula: Intervals

Indicates how many cents from ET tuning that the note must be raised ↑ or pushed ↓

Indicates how many cents from ET tuning that the note must be lowered ↓ or pulled ↑

Interval	Perfect 5th (P5)	Perfect 4th (P4)	Major 3rd (M3)	minor 6th (m6)	minor 3rd (m3)
cents	702	498	386	-214	-143
cents	32	-43	54	-85	85

How to Tune Intervals

Just Intonation Formula: Chords

Indicates how many cents from ET tuning that the note must be raised ↑ or pushed ↓

Indicates how many cents from ET tuning that the note must be lowered ↓ or pulled ↑

Chord	Major Triad (M3)	Major Triad (M3)	Major 7th (M7)	Major 9th (M9)
cents	0	0	0	0
cents	0	0	0	0

How to Tune Chords

SAMPLE WORKSHEET

Flute

Oboe

Clarinet

Saxophone

Bassoon

Add fingering

Subtract fingering

Francis McBeth: Pyramid of Ensemble Balance

Woodwind Choir

- Piccolo
- 1st Flutes
- 2nd Flutes
- Oboes
- 1st Clarinets
- 2nd Clarinets
- 3rd Clarinets
- Alto Clarinets
- 1st Alto Saxophones
- 2nd Alto Saxophones
- Tenor Saxophones
- Bassoon & Bass Clarinets
- Baritone Saxophones
- Contrabass Clarinets

Brass Choir

- 1st Trumpets
- 2nd Trumpets
- 3rd Trumpets
- 1st Horns
- 2nd Horns
- 3rd Horns
- 4th Horns
- 1st Trombones
- Euphoniums
- 2nd Trombones
- 3rd Trombones
- Tuba & String Bass

★ Table 12: Suggested Guide to Balanced Instrumentation

★ Table 13: Recommended Instrument Transfers

★ Table 14: Recommended Instrument Substitutions