

DECEMBER 15, 2022
2:00 - 3:00 PM

THE MIDWEST CLINIC
W184

MAKING CENTS OF INTONATION, BUILDING BALANCE, & TAMING TONE

CLINICIANS:

RICHARD SAUCEDO

richardsaucedo1@me.com
<https://saucedomusic.com>

SHELLEY JAGOW

shelley.jagow@wright.edu
<https://www.shelleyjagow.com>

WARM-UP

- attempt to blur the line between warm-up, ensemble development, and actual performance
- The more on-task mental behaviors, the more focused the individual players.
- involves mental energy as well as physical energy
- cognizant of their own sound as well as sound of their section and entire ensemble; collective process – ensemble development
- Stimulate embouchure muscles; awaken motor skills
- breathing; stretching; singing; listening; long tones; flexibility; articulation/style; tuning; scales; intervals; chorales; sight-reading; “correlation factor”

TUNING

- tune to both Concert F and Concert Bb
- Concert Bb is a good tuning note for the majority of the ensemble as it works well within a practical range of the overtone series for most the instruments.
- Concert F provides the horns a better tuning pitch than Bb, and it further allows the clarinets to tune throat tone G by adjusting with the barrel joint. (Keep in mind, however, that Concert F is a terrible tuning note for Eb saxophones.)
- tuning routines
- drones

	CONCERT F	Tuning Notes Partials	CONCERT Bb
Flute			
Oboe			
Bassoon			
Clarinet			
Bass Clarinet			
Alto Sax			
Tenor Sax			
Baritone Sax			
Trumpet			
Horn			
Trombone			
Euphonium			
Tuba			

WHAT ABOUT THE PERCUSSION SECTION?

- Appropriate sticks, mallets and beaters
- Time to set-up equipment
- Singing
- Integrate fundamentals
- Tuning percussion
 - Mallet instruments
 - Timpani fundamental
 - Cymbal harmonics

HAVE THE SOUND IN YOUR HEAD: MAKE SURE YOU KNOW HOW YOU WANT YOUR ENSEMBLE TO SOUND

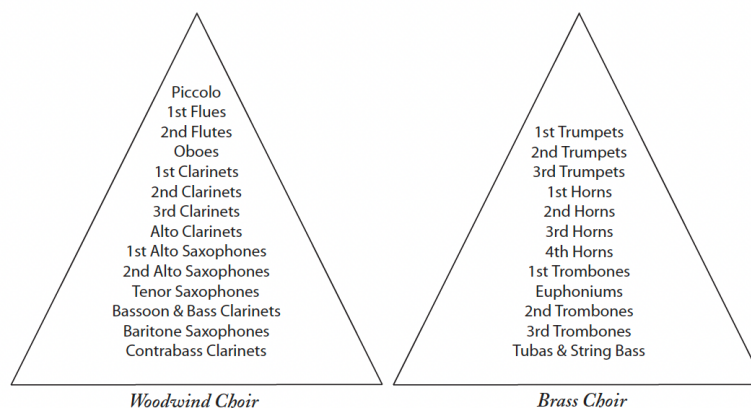
- Tone quality is essentially influenced by five basic factors:

1. **director's concept** of tone for each instrument
2. **student's concept** of tone for their instrument
3. student's **ability** to produce a characteristic tone
4. ensemble **balance and blend**
5. **color and texture** influenced by nature of repertoire

- **Pyramid** of Ensemble Balance
- **Recalibrate** your concept of tone

DOUBLE-PYRAMID

Figure 9: Double-Pyramid Balance



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	If you can only select ONE artist this week, it would be:	Pick of the week:
Flute	Emmanuel Pahud (Berlin Philharmonic)	<u>Chris Chaffee</u> (Wright State University)
Oboe	John Mack (1927-2006) (Former principal with the Cleveland Orchestra; former teacher at Cleveland Institute of Music)	Kathy DeGruchy (Wright State University)
Clarinet	Donald Montanaro (1933-2016) (Former assoc principal with The Philadelphia Orchestra; former teacher at Curtis Institute of Music)	<u>John Kurokawa</u> (Wright State University)
Bassoon	Andrew Brady (Atlanta Symphony)	<u>Bill Jobert</u> (Wright State University)
Saxophone	Tim McAllister (University of Michigan; PRISM Quartet)	Frankie Wantuch (Wright State University)
Horn	Sarah Willis (Berlin Philharmonic)	<u>Jessica Pinkham</u> (Wright State University)
Trumpet	Philip Smith (New York Philharmonic)	<u>David Diamond</u> (Wright State University)
Trombone	Megumi Kanda (Milwaukee Symphony Orchestra)	Gretchen McNamara (Wright State University)
Euphonium	David Childs (North Texas)	<u>Daniel Honaker</u> (Wright State University)
Tuba	Michael Lind (Former principal Royal Stockholm Philharmonic; former teacher at Royal Swedish Academy of Music)	<u>Daniel Honaker</u> (Wright State University)
Percussion	Martin Grubinger (Zurich University of the Arts; University of Music and Dramatic Arts, Salzburg)	<u>Richard Saucedo</u>
Percussion	Evelyn Glennie (Chancellor Robert Gordon University)	<u>Richard Saucedo</u>

- Lisk provides 3 Logical Steps to Effective **Balance and Blend**:

If you hear yourself above all others, 1 of 3 things is happening:

1. You are overpowering/overblowing! Make necessary adjustments. This initiates an auditory reaction to Balance. If you still hear yourself and you made the adjustment in #1, then:
2. You are playing with poor tone quality! Make necessary adjustments (embouchure, breath support, posture, reed, etc.) This initiates an auditory reaction to Blend and a physical reaction to embouchure and breath support. Poor tone quality will not blend with anything! If you still hear yourself and you made the adjustment in #1 and #2, then:
3. You are playing out of tune! Make the necessary adjustments by extending or shortening the length of your instrument. This initiates an auditory reaction to "Beatless Tuning" (Lisk, 1987, p. 70).

- **Tonal Toss**; matching timbre, volume and pitch
- What is the **tone of your baton**?

H. Robert Reynolds states

that there are just two principles behind conducting motions. The first principle is that the players will attack the sound the way the conductor strikes the baton on the ictus. The second principle is that the way the conductor moves through space is the way the players will move air through their instrument or the bow on the string. (Harris, 2001, p. 16)

- What does it "**feel**" like to play this note with resonance?
- **Air** must always have direction
- "I'd like to buy a **vowel**."

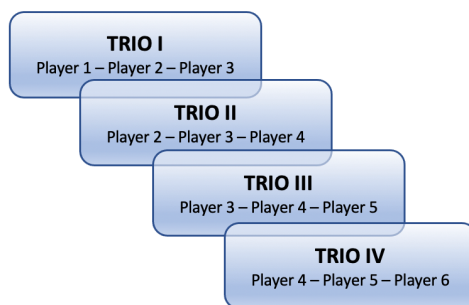
TTT: Trio Tonal Toss

Steps:

1. Principal/First player sounds note (play with warm resonance and musical energy)
2. Second player in section matches tone quality and timbre and balance and pitch to First player.
3. Third player in section matches tone quality and timbre and balance and pitch to Second player.
4. Fourth player in section matches tone quality and timbre and balance and pitch to Third player.
5. Etc.

Variations:

- Unisons – like instruments
- Unisons – unlike instruments
- Intervals – like instruments
- Intervals – unlike instruments
- Chords – like instruments
- Chords – unlike instruments



BEST PRACTICE

Listen to good artists and good music daily. Mature your sound to develop a *characteristic* tone quality. Develop your *ear* training to hear intonation problems. Understand what needs adjusting. Understand how to *adjust* the pitch to make the best correction for the situation and context. Keep your instrument in excellent playing *condition*, and perform on a quality instrument (mouthpiece/headjoint/bocal/reed). Practice matching "beatless" intervals to a drone. ie. Tonal EnergyTuner, Walter White Long Tone Accompaniment; Cello drones online and on Spotify, apps, etc.

MAKING CENTS OF INTONATION

Table 3.1. Justification for Equal-Tempered Tuning versus Just/Pure Tuning

Equal Tempered Tuning (ET) <i>Approximate Usage = 90%</i>	Just/Pure Tuning (JT) <i>Approximate Usage = 10%</i>
Most wind band music is largely melodic in nature and thus equal temperament is recommended for pieces of faster tempo, atonal music, and/or many key modulations.	Just tuning should be used when possible in 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 <i>beats</i> .
ET has equal sized seconds (100 cents) that make it impractical for harmonic (vertical) tuning.	JT has different sizes of seconds that make it impractical for melodic (horizontal) tuning.

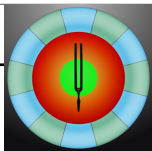
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- **Barbershop** Quartet; just tuning
- Tuning wind bands depend upon **context** (harmonic and melodic) and on **function** (consonance and dissonance), and **aesthetic** taste of the director.

Basic Rules for Just Tuning:

- 1) Tune simplest and purest intervals first: Roots, octaves, P5, P4
Root/Octaves = 0 P5 = +2 P4 = -2
- 2) Tune more complex intervals second: M3, m3, M7
M3 = -14 m3 = +16 M7 = -12
- 3) Tune a common but more complex interval next: m7
m7 = +18 (9:5) I like this tuning for greater dissonance.
m7 = -31 (7:4) I like this tuning for a dominant 7th chord.

SOME OF OUR FAVORITE TOOLS

APPS		RESOURCES
Tonal Energy Tuner		Quality recordings; aural models
Fingering & Tuning Chart		Supplementary method books
Metronome (amplified)		TET and/or Yamaha HD
Drones		TET and/or Yamaha HD

BUT I ALREADY TUNED IN OUR WARM-UP...WHY DO I HAVE TO KEEP TUNING WHILE I'M PLAYING?

Tuning is not just something we do at the beginning of each rehearsal. Tuning is an ongoing process. In other words, tuning at the beginning of rehearsal is used to place the instruments at their correct length, and to wake up the ears for active listening. In order to achieve beat-less tuning, students must learn how to manually adjust their pitch by such means as air, embouchure, alternate fingerings, rolling of headjoint (flutes), etc. However, along with learning how to make pitch adjustments, players must also understand the various factors that affect pitch.

FACTORS AFFECTING PITCH	
Table 8.1. Factors Affecting Pitch ☹ = unsatisfactory result and cause ☺ = solution to achieve a satisfactory result	
Air	☹ slow, weak air speed = unsupported tone ☹ fast, excessive air speed causes pitch to rise ☺ steady air speed
Posture	☹ poor posture ☺ correct posture
Embouchure	☹ weak and sloppy ☹ tight, biting ☹ flute: air speed ☺ correct
Mouthpiece	Selection of a model of mouthpiece to find the best mouthpiece, with a step-up mouthpiece.
Amount of Mouthpiece	☹ too much mouthpiece ☹ too little mouthpiece ☹ flute: too much ☹ oboe/bassoon: too little ☹ reed in mouth ☹ correct amount ☹ oboe: if playing out slightly ☹ bassoon: slightly in
Angle of Mouthpiece	☹ angle too far forward ☹ angle too far back ☺ correct angle
Lay of Mouthpiece	☹ mouthpiece with too much lay ☹ mouthpiece with too little lay ☹ mouthpiece with too much control pitch ☹ mouthpiece with too little control pitch
Barrel and Bocal Length	☹ barrel/bocal too long = instrument that will play flat ☹ barrel/bocal too short = shortened instrument that will play sharp ☹ proper barrel/bocal length = ability for embouchure to more easily control pitch; recommended clarinet barrel length is 66 mm; recommended standard bassoon bocal length is a #2 (#3 on Fox models) (the higher the number the longer the bocal)
Horn Hand Position	☹ right hand held too far in = closing of bell causes pitch to play flat ☹ right hand held too far out = opening of bell causes pitch to play sharp ☹ fully stopped horn = causes pitch to play 1/2-step higher ☺ correct hand position = centered pitch
Tongue Position	High arch in tongue will cause pitch to play higher. Low arch in tongue will cause pitch to play lower.
Reed Condition	☹ reed too soft = weak reed that plays below pitch, and encourages over-blowing which causes pitch to go flat ☹ reed too hard = encourages biting, therefore it causes pitch to go sharp ☺ properly conditioned reed = able to control pitch
Equipment	☹ poor equipment = poor pitch; often caused by inferior-made instruments; leaking tone holes; bent rods; poor mechanism alignment; poor quality mouthpiece or percussion mallet; poor reed; poorly adjusted percussion heads, stuck slides, etc. ☹ a pad that is too closed will cause pitch to play flat, while a pad too open will cause pitch to play sharp ☹ good equipment = good pitch; caused by purchasing quality director-recommended instruments and equipment, proper care and maintenance by the student, and by annual maintenance by a qualified instrument technician.
Dynamics	☹ louder dynamics = encourages pitch to play sharp* ☹ softer dynamics = encourages pitch to play flat* * opposite pitch tendency for reed instruments, esp. saxophone and clarinet. (Although this pitch tendency can sometimes vary dependent on reed strength and embouchure.) ☹ when playing at louder dynamics, compensate for flat pitch by firming the embouchure; (flutes will compensate for a sharp pitch by directing air stream down and/or rolling headjoint in) ☹ when playing at softer dynamics, compensate for sharp pitch by relaxing the embouchure; (flutes will compensate for a flat pitch by directing air stream up and/or rolling headjoint out)
Pitch Concept	☹ poor pitch concept = poor pitch; caused by lack of interval understanding and poor knowledge of the concept of beat-less tuning ☹ good pitch concept = good pitch; caused by frequent and regular singing and playing of intervals, practice of beat-less tuning, learning the scale of their instrument; and developing the ability to adjust pitch by means of embouchure and alternate fingerings
Balance	☹ poor balance = poor sound + poor intonation; caused by players trying to hear themselves above others instead of with others; poor balance can often be an ensemble mix of under-supported and over-blown sounds that create distorted pitch ☹ proper balance = good tone + good pitch; caused by quality tone production achieving the fundamental concepts of blend and balance, and allowing a mature sound that can be clearly heard by players that may need to adjust pitch tendencies to the specific chord in question
Timpani Pitch	☹ unequal head tension = timpani in tune with itself ☹ equal head tension = poor pitch ☹ difficulty tuning timpani = poor pitch ☹ ease of tuning = good pitch; caused by frequent and regular singing and playing of intervals
Percussion	Pitch can be affected by quality of drumheads and quality of mallet instrument bars. Choose appropriate sticks and mallets, and learn to accurately tune batter heads.
Temperature	☹ colder temperatures = flat pitch in wind instruments, but flat pitch in string instruments ☹ warmer temperatures = sharp pitch in wind instruments, but sharp pitch in string instruments ☹ whenever possible, warm-up the ensemble in the actual performance hall; instruct students that larger instruments and those instruments made of more metal than wood will change temperatures more drastically and thus their pitch will be the most affected; instruments are tested and tuned at 72 degrees Fahrenheit / 22 degrees Celsius in the factories

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MORE RESOURCES

- Intonation mapping charts for every instrument may be printed for individual student use from **Tuning for Wind Instruments: A Roadmap for Successful Intonation** (Meredith Music, 2012)

Figure 7.4. Saxophone Intonation Chart Template

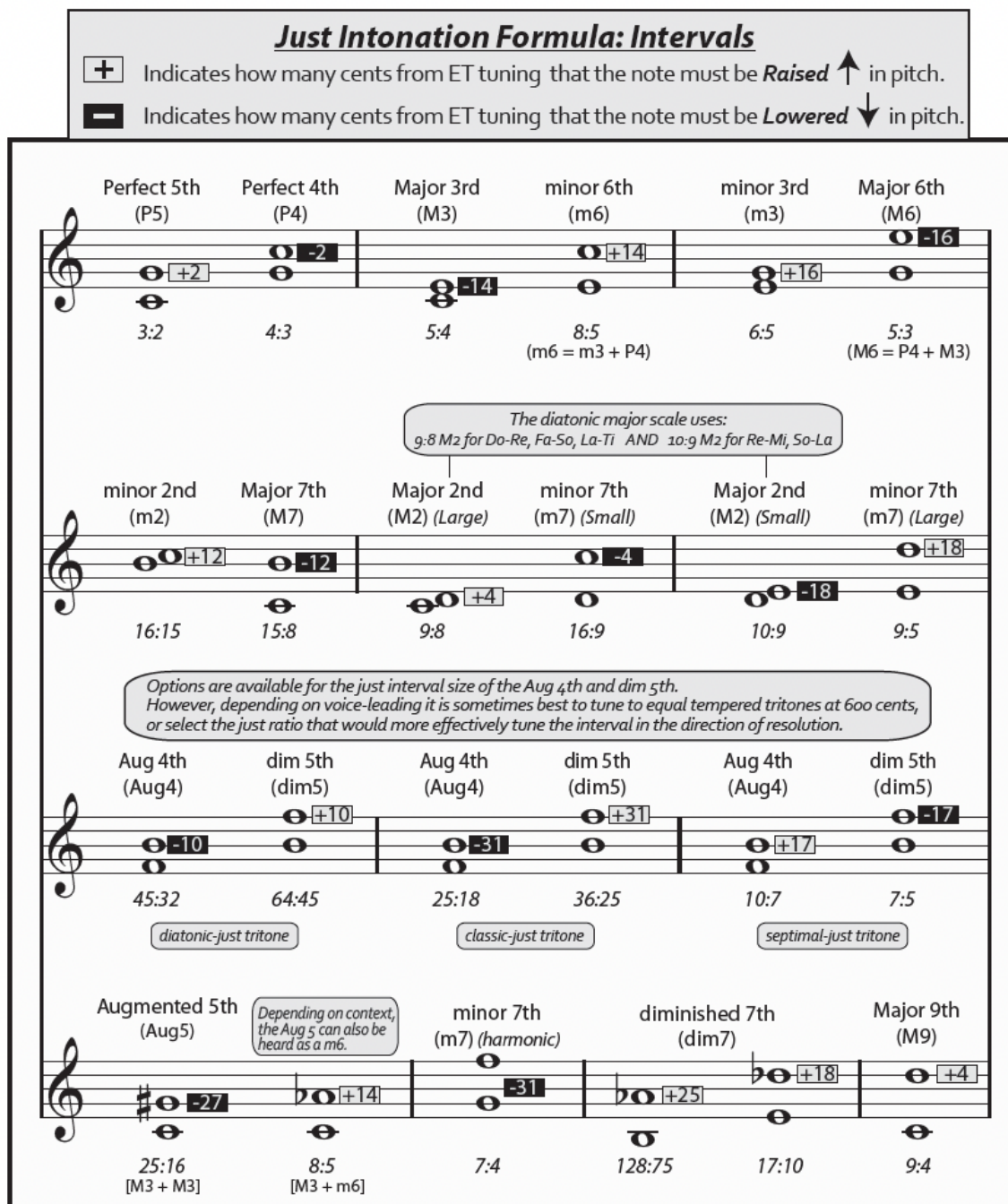
SAXOPHONE INTONATION CHECK-SHEET

SAXOPHONE INTONATION CHECK-SHEET												
Instructions: 1. Properly warm up your instrument and then tune to A = 440. 2. Sustain a written note on your instrument 2 or 3 times in a row while a friend watches the tuner: a. If the average of the notes is in tune, or it displays as only a few cents sharp or flat, don't mark anything. b. If the average of the notes is flat (more than 5 cents), write the number of cents flat; ie. -12 c. If the average of the notes is sharp (more than 5 cents), write the number of cents sharp; ie. +12 3. Repeat step #2 for every note within the range of your instrument. 4. When you have completed the Check Sheet, go back to the notes that were MOST out of tune and learn solutions to play them in tune by improving tone, firming or relaxing your embouchure, using alternate fingerings, etc. If you have difficulty getting any particular notes in tune, please read the chapter <i>Factors Affecting Pitch</i> . When you revisit your Intonation Check-Sheet, ALWAYS USE YOUR EARS FIRST BEFORE YOUR EYES!												Name: _____
												Mouthpiece: _____
												Reed: _____
												Notes: _____
Number of cents flat (-) or sharp (+):												
Solutions:												
Number of cents flat (-) or sharp (+):												
Solutions:												
Number of cents flat (-) or sharp (+):												
Solutions:												

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JUST INTONATION INTERVAL CHART

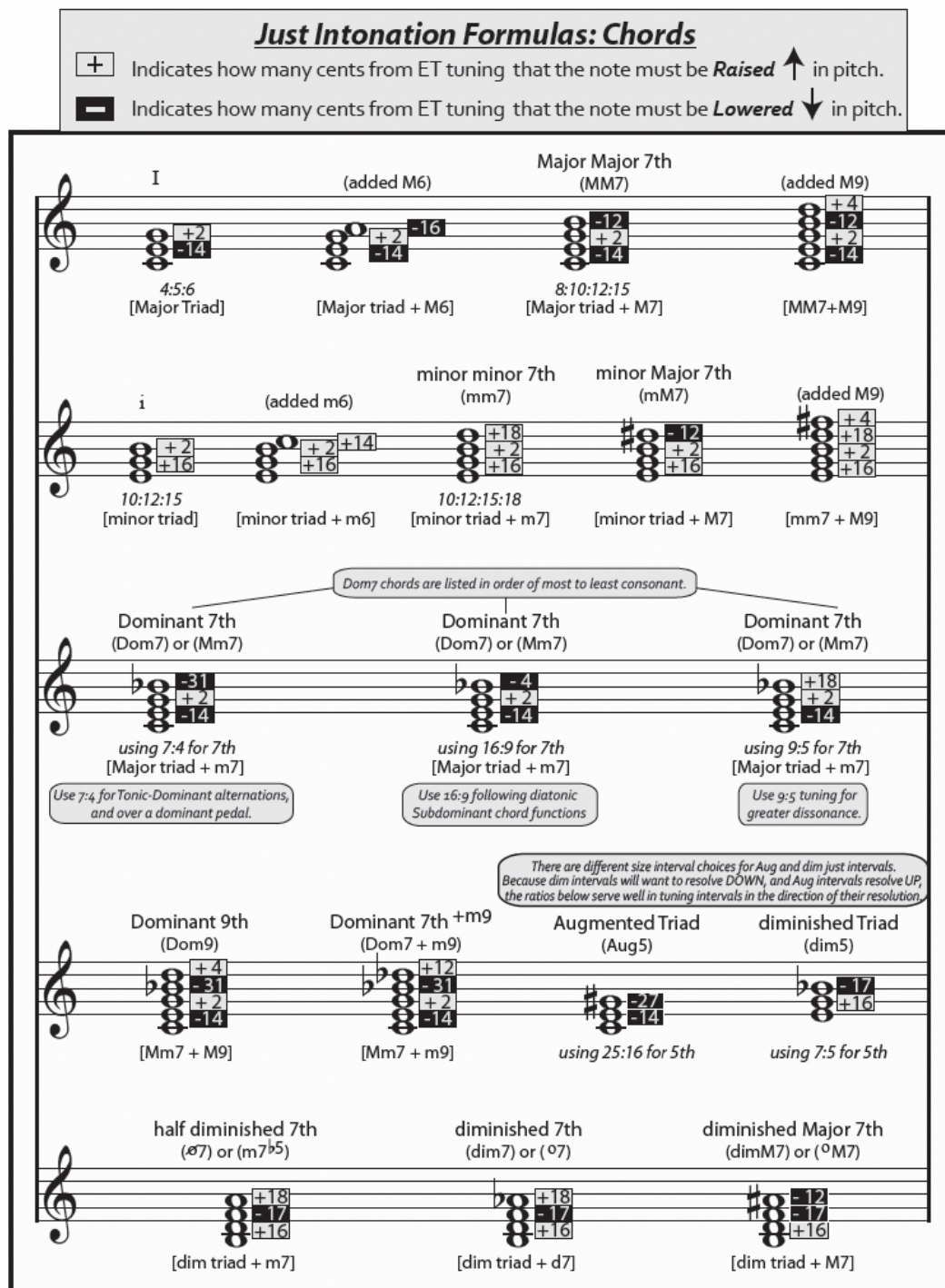
Figure 5.1. Just Intonation Chart: Intervals



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JUST INTONATION CHORD CHART

Figure 5.2. Just Intonation Chart: Chords



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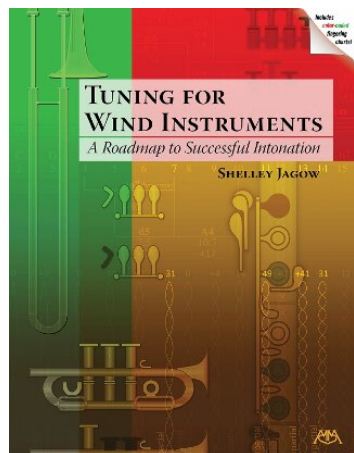
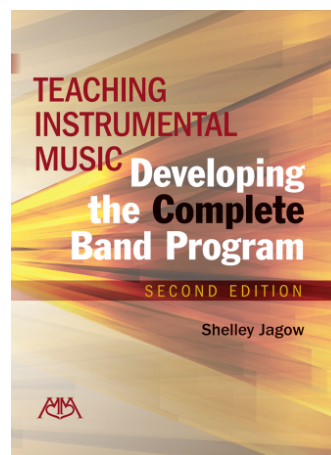
RESOURCES

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Tuning for Wind Instruments

A Roadmap to Successful Intonation

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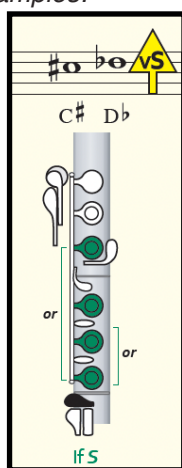
Downloadable colored PDF Fingering & Tuning Charts available from Hal Leonard/Sheet Music Direct.

APP for Fingering & Tuning Charts

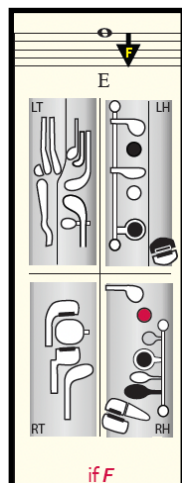
available from Apple Store and Google Play.



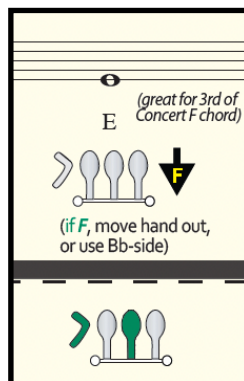
Samples:



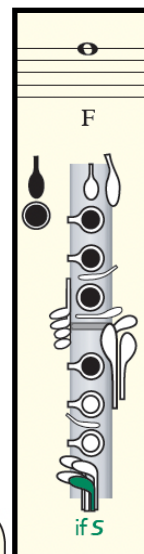
Flute



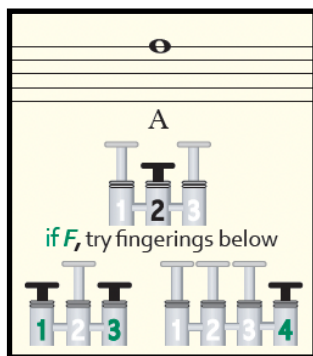
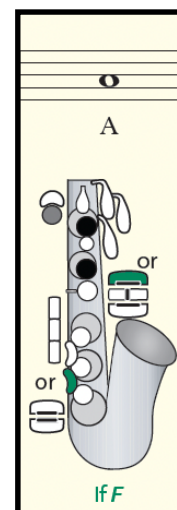
Bassoon



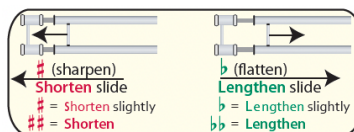
Horn



Clarinet

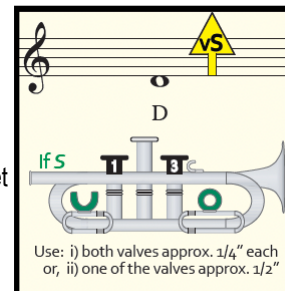


Euphonium



Trombone

Trumpet



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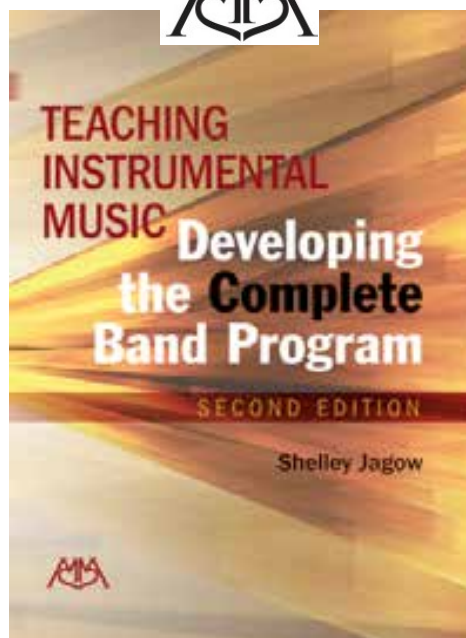
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