

Troubleshooting tuning

A class by Andrew Carolan (ajdcarolan@gmail.com) for Harmony, Inc. Area 3.

Good intonation is crucial to successful ensemble singing. We can tell when something's not quite in tune, but how can we fix it? In this session, we'll examine effective approaches to address tuning problems, and pathways to better intonation for ensemble singers.

We'll discuss **horizontal** and **vertical** tuning.

Ensembles at all levels benefit from improving their tuning. Very high level groups still work on these skills, and they use similar approaches. The journey is never done!

Intonation is a spectrum

The voice is a non-fixed ("continuous") pitch instrument; that is, we can produce any pitch, including infinite increments of pitch in between the named chromatic notes.

The intonation of an ensemble is on a spectrum from poorly-intonated to well-intonated. In this sense, there's no such thing as being "in tune", only *more* or *less* in tune.

When working on tuning, we are assuming that the starting point is correct notes. From there, we adjust notes up or down by **fine increments** of pitch to improve the accuracy of interval relationships.

Exercise: Microtonal slide

This exercise builds singers' awareness of continuous (as opposed to fixed) pitch.

- Have singers move continuously between two notes a semitone apart over a number of beats.
- Encourage them to "touch" every increment of pitch along the way.
- Start with 4 beats, then 8, then 16. The latter is very challenging, as it barely feels like the pitch is changing!

Horizontal tuning

Horizontal tuning is how well pitches are intonated relative to the tonal centre. This determines whether we lose (or gain) pitch as we progress through a song.

When an ensemble has good **horizontal tuning**, there is a clear sense of tonal centre that doesn't shift as they continue through a piece. We often hear this referred to as "keeping pitch" or "maintaining the tonal centre."

This is a skill that can be developed and honed by singers over time. The key to good horizontal tuning is **singing the scale in tune**. The following are exercises to build that skill and habits to reinforce it in practice.

Our **singers' awareness** is an important tool in maintaining pitch. As musical leaders, it's important that we build frequent reminders about intonation into the rehearsal.

Exercise: Tuning scale intervals

1 2 3 4

Voice 1

Voice 2

5 6 7 8

- Choose any syllable you wish to repeat on each note
- Split the ensemble into two groups
- Group 1 sings the scale while the Group 2 stays on the tonic, then they switch
- Hold each note until it is in tune.
 - This may take time as singers adjust, so be patient.
 - Make sure the *holding group* is strong on the tonic and doesn't adjust. (Remind them to repeat the syllable with each note.)
 - It's the responsibility of the *moving group* to tune the interval.

If we can teach our singers to sing the scale in tune, our horizontal tuning is likely to be significantly improved.

In the major scale, certain scale degrees tend to be sung too low. We sometimes hear scale degrees 2, 3, 6 and 7 described as “trap intervals.” (Depending on who you ask, this list may vary!) Pay particular attention to these notes in the exercise.

This exercise requires singers to become comfortable with the dissonant minor second between the tonic and the seventh scale degree (C and B, in the key of C). Singers must learn to love the dissonance, even though their initial instinct may be to widen the interval.

Concept: Larger ascending intervals, smaller descending intervals

In Western music, the vast majority of the time, ensembles tend to go flat - in other words, the tonal centre gets lower as the music continues.

To combat this, when singing an ascending interval, singers should be conscious of “stretching” the interval to be slightly larger. (Remember, we are talking about fine increments of pitch.)

Inversely, when singing a descending interval, singers should “narrow” the interval, making it slightly smaller.

Over time, this becomes part of muscle memory, and singers will do it unconsciously because it feels more in tune.

Vertical tuning

When a group has good **vertical tuning**, individual chords within the music are well intonated. This is what we often think of when we say “tuning”: the accuracy of intervals between voices in a particular moment.

We’ll discuss rehearsal techniques for addressing this. Note that the success of fixing vertical tuning issues may also depend on the singers’ skill: we may ask them to use their ear to adjust pitches up or down by fine increments. This is where the work on horizontal intonation benefits vertical tuning as well.

Addressing vertical intonation issues

The core of tuning a chord is to make sure the consonant (perfect or “strong”) interval is correctly tuned.

Here is a process to follow in rehearsal when an out-of-tune chord is identified:

- Stop and hold the chord, or “block” a series of chords, only proceeding when the director indicates
- Find the strong interval(s): perfect fifth, perfect fourth, octave
- If possible, identify which part of the chord each voice is singing
 - For many of us, this means marking up the music ahead of time to identify those interval relationships
- Have two parts duet a strong interval
 - Is the interval in tune?
 - If not, which voice is flat (most common) or sharp?
- Once that interval is in tune, add other parts
 - Add the third (making a triad) then the seventh

Repeat as often as needed!

Root and fifth

Most of the chords we sing in barbershop have within them a **root-fifth relationship**. If our goal is to “lock and ring” chords, this is the lock.

We sing mostly closed voicings, meaning the root and fifth are frequently voiced in the same octave. If the root is voiced below the fifth, this is a **perfect fifth** interval. If the root is voiced above the fifth, this is a **perfect fourth**. (Functionally speaking, it’s the same interval!)

The root should predominate (be higher in volume). That note should also be accurate to the tonal centre (see “Horizontal tuning”).

The fifth should be tuned incrementally higher, making the interval slightly wider. Much of the time, our fifths are not quite wide enough.

Octave

If a chord has an octave interval, tuning this is essentially a matter of making sure both parts agree, that is, are singing the same note (an octave apart) as accurately as possible.

It's preferable for the lower voice in the octave to predominate. Invite the higher voiced part to "sing into" the sound produced by the lower voice.

Third and seventh

It's essential that the perfect intervals (root and fifth; octave) are in tune first. Once we have that, we can effectively work on the remaining parts of the chord.

Our beloved major-minor seventh chord ("dominant seventh", "barbershop seventh chord" or often just "seventh chord") is at the heart of what makes barbershop 'shop. The third and seventh, separated by a tritone, are the ring in "lock and ring".

We generally ask for the major third in the chord to be tuned incrementally higher.

We want the seventh to be tuned lower. (As we spend a lot of effort training singers to be higher on the pitch, it may take some encouragement for singers to "settle" the seventh!)

For baritones and tenors especially, ear training over time will help these singers recognise intuitively which part of the chord they are singing, and tune it appropriately.

Conclusion

With concerted effort and intentional use of these tools, we can help our ensembles improve both their horizontal and vertical tuning, contributing to their musical success!

Warmups – Area 3
May 4, 2025 Kathy Greason

Why?

- To leave your worries at the door
- To develop your craft to the fullest
 - o To get your blood flowing and your bodies ready to sing, which may require different approaches early or late in the day
 - Morning: ease vocal folds into the day
 - Evening: undo a day's worth of shallow breathing, low-pitched speech, and lazy articulation
 - o To concentrate on your instrument, instead of notes, words, rhythms, interpretation
 - o To hear and feel the sounds you do (or don't) want to hear and feel without distraction
 - o To develop unity of vowels and placement
 - o To hear proper intonation
- To connect as a performing ensemble

***The important thing is that everyone understands why each element of the warmup is performed.
The other important thing is to check in often: Is it effective? Why? Why not?***

Rehearsal and performance elements that can be addressed by warming up:

- Mental readiness
- Physical Readiness
- Breath management
- Tone production (including volume, vocal inflection)
- Articulation
- Range
- Intonation
- Fun (really!)
- Other specific craft or technique improvements, such as
 - o singing on the beat
 - o vibrato
 - o placement
 - o light sound
 - o heavy sound
 - o passagio
 - o particular vowels or consonants

Warmup ideas are limited only by your imagination!

Some warmup exercises follow.

- What reason would you give for doing them?
- Can you think of variations?

Warmup ideas:

- Tell your day in numbers
- Show emotion with your face and body while someone calls out the numbers
- Clapping
 - Call and response
 - Round in rhythm
 - Rhythm of repertoire songs (or play name that rhythm!)
- Combine clapping and moving exercise
- Posture awareness
 - be proud
 - reach for the sky then lower arms while maintaining elevated chest
 - knee bends to pick up heavy suitcase
 - nod “yes” and then “no several times to find optimal neck position
- Massage face, stick out tongue boldly, chew with no manners, stretch neck, shrug or roll shoulders, circle or windmill arms, stretch torso, rag doll
- March in place, dance, do some planned choreo moves
- Hiss or “vvv,” inhaling on shorter breaths, and exhaling by the numbers (breathe in for four, “vvv” for eight; in for three, “vvv” for twelve; in for two “vvv” for sixteen; in for one, “vvv” for twenty)
- Hiss part of a repertoire song
- Pant (On a unison pitch, ha, ha, ha, ha, haaaaa; repeat half steps higher or lower; Replace “ha” with huh, ho, zz etc.)
- SOVT exercises (humming; fricatives, e.g., “vvv,” “zzz,” “zhh,” [soft] “th”; bubbling a/k/a lip trilling)

Fifteen-minute SOVT warmup:

“vvv” for 60 seconds on droned pitch
“vvv” for 60 seconds on droned pitch, up a half step and “vvv” for 60 seconds on droned pitch
“vvv” patiently slide 1-2-1, up by halves for four minutes
“vvv” patiently slide 1-5-1, up by halves for four minutes
“vvv” on 1-2-1-[↓]7-1-2-1-[↓]7-1-2-1-[↓]7-1, changing to a vowel on the last 1, up by halves

SOVT for soft volume:

On one note, bubble for four beats, decreasing volume
On one note, “vvv” for four beats, decreasing volume
On one note, “hmm” for four beats, decreasing volume
On one note, “ng” for four beats, decreasing volume
Repeat all four, but softly the whole time
Optional addition of target word or word sound at the end

- Hum continuously, thinking support, resonance, pitch, spin
- Sing high sighs or sirens with physical complement
- “oo” up the scale intervals (1, 1-2-1, 1-2-3-2-1, etc.)
- “oo” down the scale intervals (8, 8-7-8, 8-7-6-7-8, etc.)
- split chorus and sing the two “oo” segments together
- Sing a familiar tune in unison (America, Happy Birthday, a Christmas carol, etc.)
- Sing a simple, familiar barbershop arrangement on a neutral syllable (Two Nations, Harmony Grace)
- Sing part of a repertoire song using vowels only
- Sing part of a repertoire song, without the planned breaths
- Add volume, tone, or emotion changes to any warmup exercise
- Sing a round (Shalom Chaverim, Sweetly Sings the Donkey, White Coral Bells, Oh How Lovely Is the Evening, Goose, etc.)

<i>Why shouldn't my goose sing as well as thy goose when I paid for my goose twice as much as thou.</i>																					
1	1	1	1	-5	3	3	3	3	3	1	5	5	5	5	5	8	5	4	3	2	1

- mini, mini, ming, ming, what a pity, what a pity, what, what, what, what, zoom, zoom, zoom, zoom, zah
- zoom, gul ly, gul ly, gul ly, zoom, gul ly, gul ly [then up or down by half steps]
1 1 2 m3 2 m3 2 1 1 1 5(low) 1
- ah - - - -~~~~~oo~~~~~oh
1 2 3 2 1 8 1
>-----
- see - - - oh, see - - - oh, see - - - - - - - - - - - oh
1 2 3 4 5, 1 2 3 4 5, 1 2 3 4 5 6 7 8 9 8 7 6 5 4 3 2 1
- Sing arpeggios (1-3-5-8-7-5-3-2-1) on any vowel
- Say tongue twisters (She sells sea shells by the sea shore; Peter Piper picked a peck of pickled peppers)
- Sing numbers or the alphabet – on one note, or a chord, or up and down scale segments – with increasing speed
- “Dew bee” up the scale, one note for each syllable, jumping the beat on “bee.” Then down, two syllables for each note (i.e., “dewbee”), on 8-6-7-5-6-4-5-3-4-2-3-1-2, then “dew” on 7, and jump “wah” on 1.
- On a unison note, on a chord, or on 1-2-3-4-5-4-3-2-1 sing
Mommy made me mash my M & Ms
Nana knits bandanas, Nana’s fine
[Any other made up phrase that uses mostly m, n, ng, or l at the beginning or end of each word]

- Four part warmups

	I	IV7	I	V7	I	#I (new “do”)
T	3	3b	3	4	3	#3
L	1	1	1	7	1	#1
Br	5	6	5	5	5	#5
Bs	1 (low)	4 (up)	1 (low)	2	1	#1
	For	I	love	you	too	-oo
	You’re	not	poor	for	sure	-ure
	Fill	in	fun	words	here-	-ere

	I	I7	IV	V7	I	bVI7 (optional)	#I (new “do”)
T	3	3	4	4	3	b5	#3
L	1	1	1	7	1	1	#1
Br	5	b7	6	5	5	b6 (= #5)	#5
Bs	1 (low)	5 (up)	4	2	1	b3	#1
	May	Me	My	Moh	Moo-	-oo	-oo
	Please	don’t	go	a-	way-	-ay	-ay
	Fill	in	fun	words	here-	-ere	-ere

	I	IV	V7	II half dim	I	bVI7 (optional)	#I (new “do”)
T	3	6	4	4	3	b5	#3
L	1	4 (up)	2	1	1	1	#1
Br	5	1 (up)	7	b6	5	b6 (= #5)	#5
Bs	1 (low)	4	5	2	1	b3	#1
	nah	nah	nah	nah	nah-	-ah	-ah
	dee	dee	dee	dee	dee-	-ee	-ee
	Fill	in	word	sounds	here-	-ere	-ere

	unison	duet	vi	I7	IV	I	ii7	V7	I
T	1 (high)	2	3	3	4	5	4	4	3
L	1 (high)	2	1	1	1	1	1	7	1
Br	1 (high)	7	6	b7	6	5	6	5	5
Bs	1 (high)	7	6	5	4	3	2	2	1

Tenor	1,1,1,1	1,1,1,1	1,1,1,1	↑3,3,3,3		3,3,3,3	3,3,3,3	#3#3#3#3
Lead	1,1,1,1	1,1,1,1	1,1,1,1	1,1,1,1		1,1,1,1	1,1,1,1	#1#1#1#1
Bari	1,1,1,1	1,1,1,1	↓5,5,5,5	5,5,5,5		5,5,5,5	5,5,5,5	#5#5#5#5
Bass	1,1,1,1	↓8,8,8,8	8,8,8,8	8,8,8,8		8,8,8,8	8,8,8,8	#8#8#8#8
“lyric”	one, one, one, one	one, one, one, one	one, one, one, one	one, one, one, one	[sip four breaths]	hm, hm, ha, ha [staccato]	me oh my oh [legato]	me oh my oh [legato]