



# The Ring's The Thing!

OVERTONES

*Corinna Gariock  
International Faculty  
Certified Music Judge  
Sweet Adelines International*

# The Ring's The Thing!

- We talk a lot about overtones in barbershop!
  - 'Ring', 'buzz', 'expanded sound', 'screaming overtones'
  - Causing... goosebumps, upstanding hairs, shivers!
- This class will discuss:
  - What are overtones?
  - Why do we love them so much in barbershop?
  - How do we make audible overtones happen?

# What Is An Overtone?

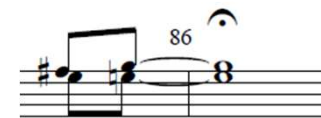
THE OVERTONE SERIES

# The Ring's The Thing

▶ Example #1

Provided by Sweet Adelines International Faculty member Kathleen Hansen's video "**OVERTONES! What are overtones? What do they sound like?**"

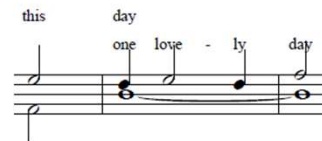
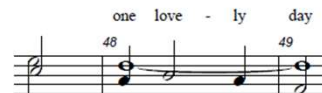
▶ Example #2: Martini Quartet, tag of Santa Claus Medley



to town!\_\_\_\_\_



▶ Example #3: Martini Quartet, Glocca Morra 'shimmer'



# A few definitions to get us started...

## Fundamental

*noun*

noun: **fundamental**; plural noun: **fundamentals**

1. a fundamental note, tone, or frequency.

## Overtone

*noun*

plural noun: **overtones**

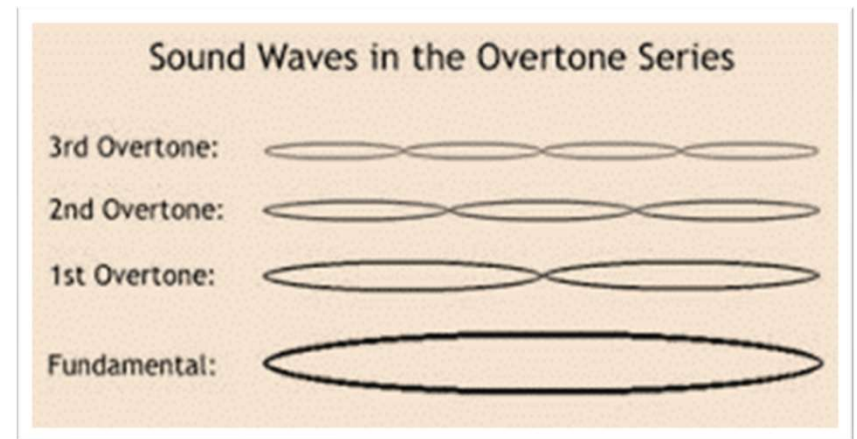
1. a musical tone which is a part of the harmonic series above a fundamental note, and may be heard with it.

## Harmonic

*noun*

noun: **harmonic**; plural noun: **harmonics**

1. any member of the harmonic series



## Hertz

*noun*

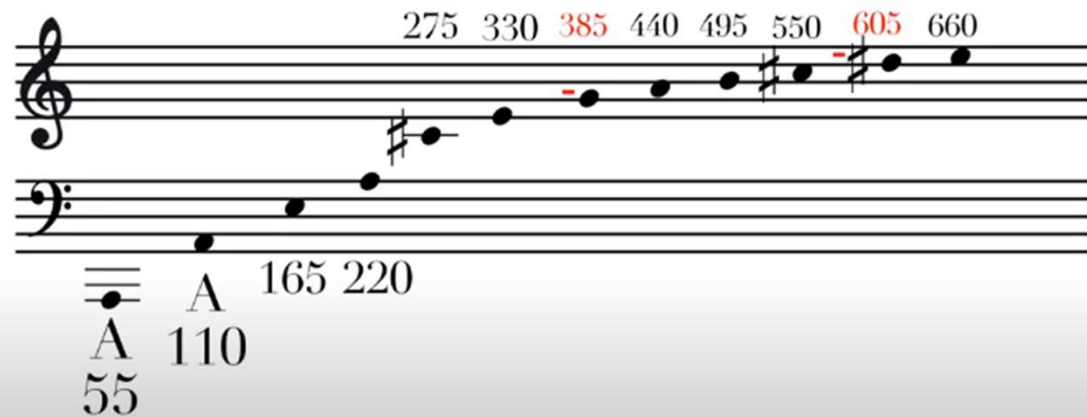
1. the SI unit of frequency, equal to one cycle per second.

# The Overtone Series (or Harmonic Series)

Two Minute Music  
Theory #31

The lower the  
fundamental,  
the more  
audible the  
overtone  
series.

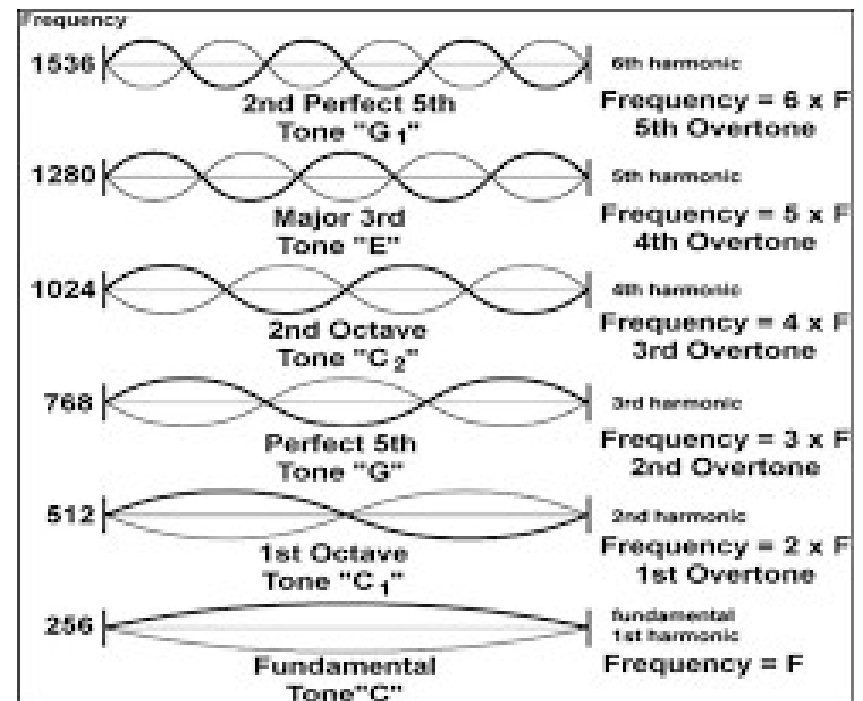
## Harmonic Series on A



# The Overtone Series (or Harmonic Series)

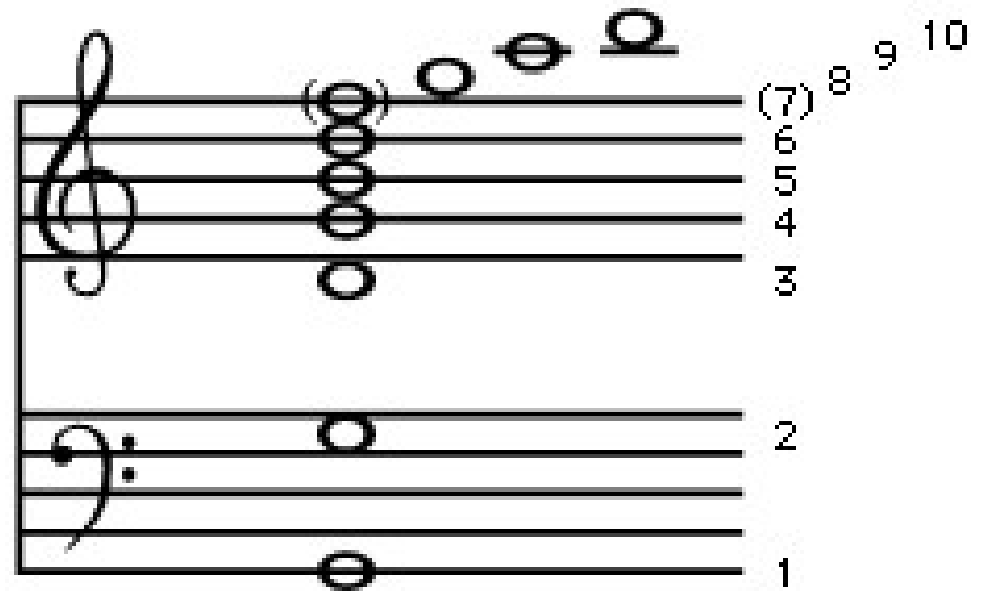
- ▶ Overtone #6: The flatted 7<sup>th</sup> above – Bb2
- ▶ Overtone #5: The 2<sup>nd</sup> 5<sup>th</sup> above – G2
- ▶ Overtone #4: The major 3<sup>rd</sup> – E2
- ▶ Overtone #3: The second octave – C2
- ▶ Overtone #2: The 5<sup>th</sup> above – G1
- ▶ Overtone #1: The octave – C1
- ▶ Fundamental - C

*With a fundamental of 'C', the overtone series becomes C, C1, G1, C2, E2, G2, Bb2, etc.*



# The Overtone Series (or Harmonic Series)

- ▶ Using G as a fundamental we get:
  - ▶ Overtone #7: The next octave – G3
  - ▶ Overtone #6: The flatted 7<sup>th</sup> above – F2
  - ▶ Overtone #5: The 2<sup>nd</sup> 5<sup>th</sup> above – D2
  - ▶ Overtone #4: The major 3<sup>rd</sup> – B2
  - ▶ Overtone #3: The second octave – G2
  - ▶ Overtone #2: The 5<sup>th</sup> above – D1
  - ▶ Overtone #1: The octave – G1
  - ▶ Fundamental - G







# Why Does Barbershop Love Overtones?



THE OVERTONE SERIES AND  
BARBERSHOP CHORDS

# Barbershop's Defining Characteristics

- ▶ Unaccompanied (a cappella), close harmony, four-part vocal music with the melody primarily in a middle part (not top, not bottom).
- ▶ An 'interesting' melody and a general audience lyric that mostly lives in the diatonic scale (i.e. few accidentals). Lyric demonstrates metric unity and an obvious rhyming structure.
- ▶ 'Popular song' form. Generally 8-measure building blocks. Chorus demonstrates melodic unity (ex. AABA, ABAC, ABACA).
- ▶ Harmonization *primarily* consisting of major triad, dominant seventh and dominant ninth harmonizations. Chord progressions *primarily* utilize dominant-to-tonic resolution.
- ▶ Arrangement structure: Chorus is mandatory. Intro, verse, tag, bridge optional.
- ▶ Every melody note is harmonized i.e. texture is primarily homophonic (vs. polyphonic)
- ▶ Voicings strengthen the lock and ring characteristic of the barbershop style.
- ▶ Embellishments are utilized for dramatic effect or to achieve continuity in the absence of instruments.

# The Overtone Series and Chords

- ▶ SO....
  - ▶ What happens if we start sounding multiple fundamentals together?
  - ▶ Like when we sing barbershop chords?



# The Overtone Series and Chords

Harmonic Series  
(Andrew Huang)

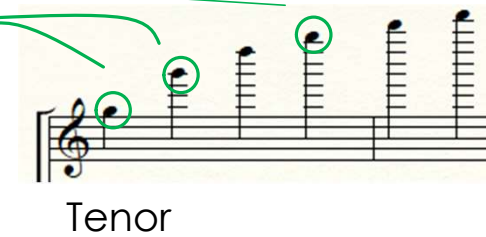
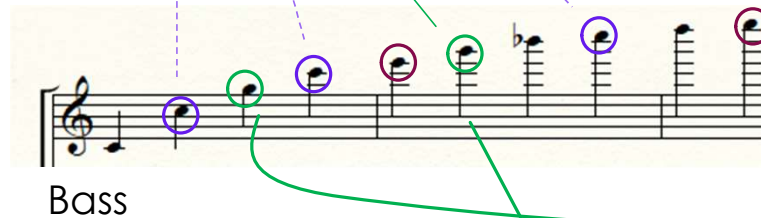
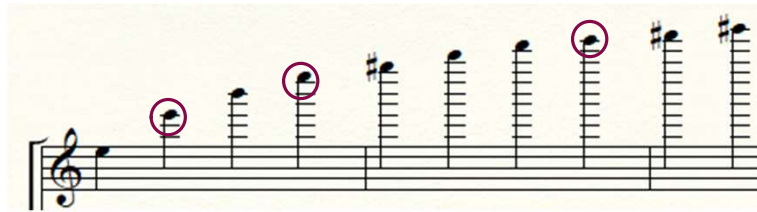
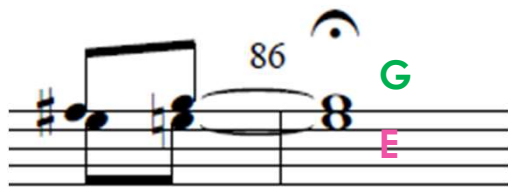
Chords built on the major triad have a lot of overlapping overtones, and that sounds good to us.

The diagram illustrates the harmonic series for E and C. The E harmonic series (top staff) consists of 16 notes: 1 (E), 2 (E), 3 (G#), 4 (B), 5 (C#), 6 (D), 7 (D), 8 (E), 9 (F#), 10 (G#), 11 (A), 12 (A), 13 (B), 14 (B), 15 (C#), 16 (E). The C harmonic series (bottom staff) consists of 16 notes: 1 (C), 2 (C), 3 (E), 4 (F), 5 (G), 6 (G), 7 (A), 8 (A), 9 (B), 10 (B), 11 (C), 12 (C), 13 (D), 14 (D), 15 (E), 16 (F). Red dashed lines connect the notes of the two series, highlighting the overlapping notes: E (E2), G# (G#3), B (B3), C# (C#4), D (D4), E (E4), F# (F#5), G# (G#5), A (A5), B (B5), C# (C#6), and E (E6).

# The Overtone Series and Chords

- ▶ These overlapping overtones are why we refer to certain chords in the Music Category as “Primary” or stronger chords. Primary chords are built on the major triad and appear in the overtone series.
  - ▶ The major triad (1-3-5, root is usually doubled)
  - ▶ The dominant seventh (1-3-5-7b)
  - ▶ The dominant ninth (1-3-5-7b-9, root is usually omitted)
- ▶ Because these chords are built on the major triad, they have a lot of overtone series alignment built in, and that helps them ring.
- ▶ The lower the fundamental, the more audible the overtone. For this reason, chord voicing is very important, and particularly the bass voicing. The bass needs to be on a strong chord component i.e. one that produces a lot of overlapping overtones.

# Example: Major Triad, Doubled Root



# Example: Major Triad, Doubled Root

one love - ly day  
48 49

this day  
one love - ly day

Detailed description: This block shows two staves of musical notation. The top staff contains the notes for 'one love - ly day' with measure numbers 48 and 49. The bottom staff contains the notes for 'this day one love - ly day'. A red oval is drawn around the two D notes in measure 48, one on the top staff and one on the bottom staff, illustrating the 'doubled root' concept.

Lead note and bass 1<sup>st</sup> overtone

D - Fundamental and Overtone Series

Bass fundamental

Detailed description: This diagram illustrates the overtone series for the note D. It shows a treble clef staff with a series of notes: D (fundamental), E, F#, G, A, B, C, D. A red line points from the text 'Lead note and bass 1st overtone' to the first two notes, D and E. Another red line points from the text 'Bass fundamental' to the D note on the staff.

*The overtone "accompaniment" is what makes the lead note "shimmer" and seem to disappear into the bass sound.*





Bringin' the Ring!



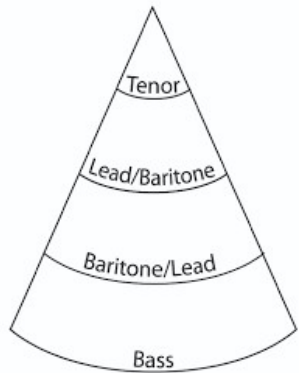
HOW CAN WE HELP CHORDS  
TO RING?



# Bringin' the Ring!

- ▶ Reinforced, audible overtones rely on:
  - ▶ Strong chord choices - chords with components that have good overtone alignment / lots of overlapping overtones
  - ▶ Proper chord voicing with the bass on a fundamental whose overtone series supports the chord above. Why? Because that is the lowest note with the most audible overtones.
  - ▶ Accurate tuning / just intonation (i.e. P-theory tuning)
  - ▶ Appropriate chord balancing (volume relationships). Cone-shaped sound.
  - ▶ Shared resonance – a common approach to vocal production
  - ▶ Matched vowels

# Bringin' the Ring!



Lead

Bari

Bass

Tenor

The Ring's The  
Thing!

CONCLUSION

# The Ring's The Thing!

- Overtones are tones in a harmonic series generated by a fundamental tone.
- Barbershop music is arranged to promote the generation of audible overtones.
- Audible overtones can be helped along by the singer in several ways:
  - a) Chords with components that have good overtone alignment
  - b) Proper chord voicing with lower voices producing overlapping overtones
  - c) Proper chord balance
  - d) Good vocal production and shared resonance
  - e) Accurate tuning including matched vowels

Questions?



Corinna Garriock  
[Corinna.Garriock@gmail.com](mailto:Corinna.Garriock@gmail.com)

# References

- ▶ Intro To The Harmonic Series – Two Minute Music Theory #31
  - ▶ <https://youtu.be/OATjHiOuc70>
- ▶ [Harmonic – Wikipedia](#)
- ▶ Andrew Huang - The most mind-blowing concept in music (Harmonic Series)
  - ▶ [https://youtu.be/Wx\\_kugSemfY](https://youtu.be/Wx_kugSemfY)
- ▶ International Faculty, Kathleen Hansen – OVERTONES!
  - ▶ <https://youtu.be/NBpVuemJl5c>
- ▶ Anna-Maria Hefele - Polyphonic overtone singing explained visually
  - ▶ <https://youtu.be/UHTF1-lhuC0>
- ▶ Avi Kaplan (Pentatonix) Overtone Singing Lions Sleeps Tonight
  - ▶ [https://youtu.be/2i61\\_JNc\\_Nc?t=109](https://youtu.be/2i61_JNc_Nc?t=109)