



Max McKee
Executive Director
(541) 840-4888



Scott McKee
CEO
(541) 778-4880



Paul Kassulke
Director of Operations
(541) 778-3161

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Another ABC Presentation

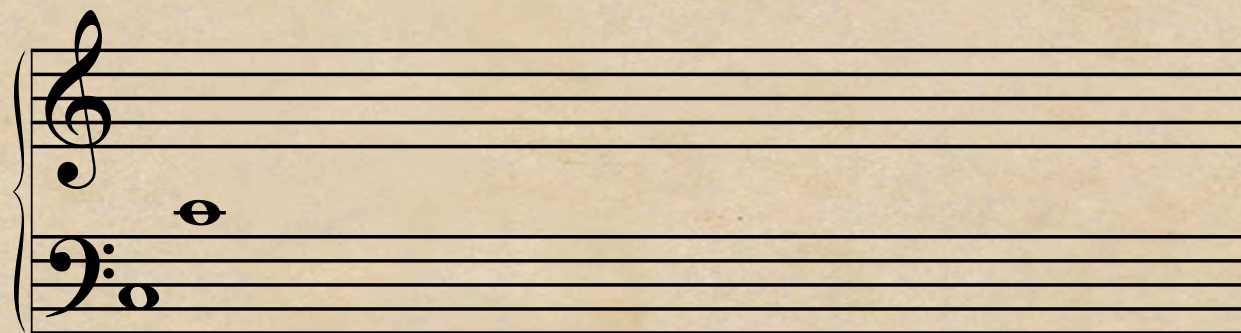
American Band College of
Central Washington University



ABC's
of the
Overtone Series

Overtone Series

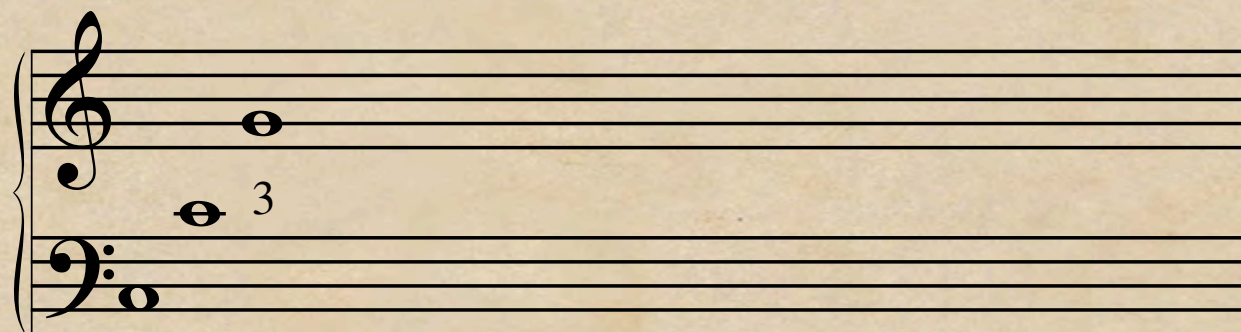
Building the Series



1 2
Partial

Overtone Series

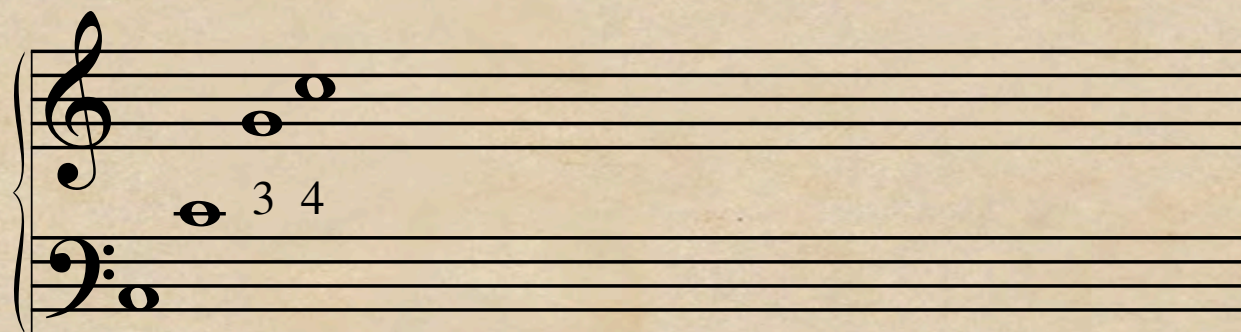
Building the Series



1 2
Partial

Overtone Series

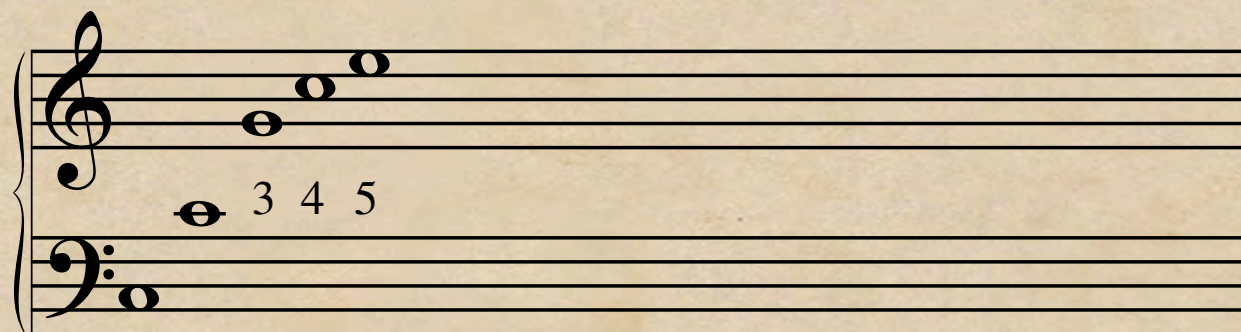
Building the Series



1 2
Partial

Overtone Series

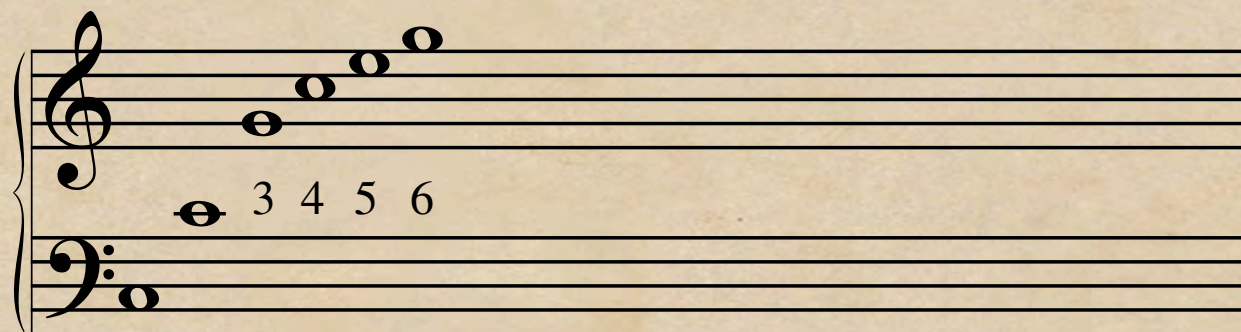
Building the Series



1 2
Partial

Overtone Series

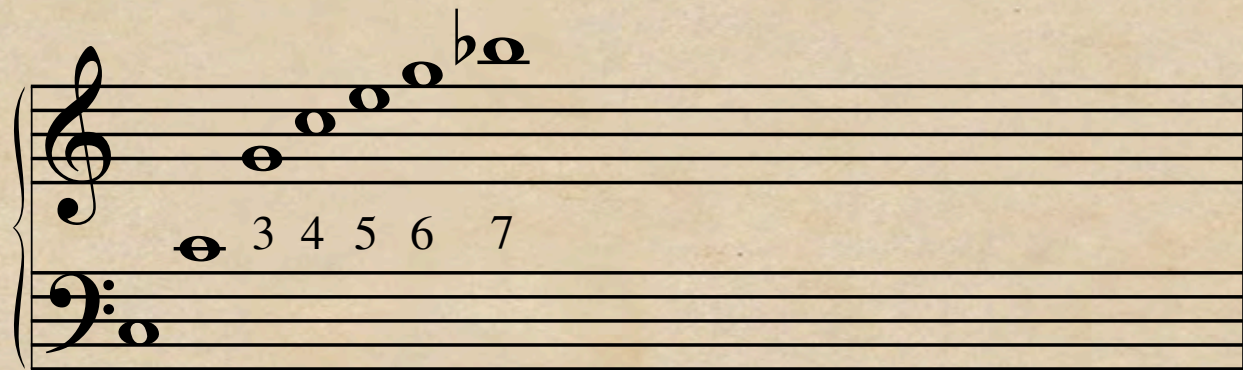
Building the Series



1 2
Partial

Overtone Series

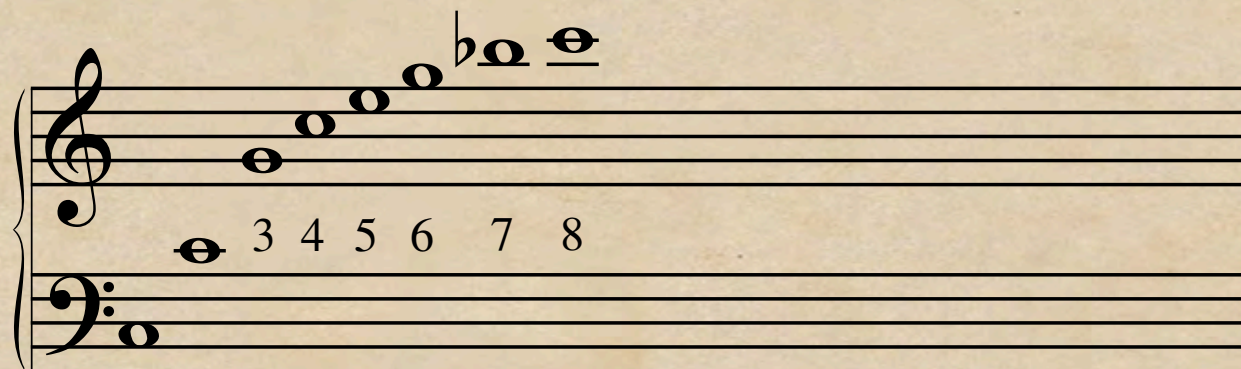
Building the Series



1 2
Partial

Overtone Series

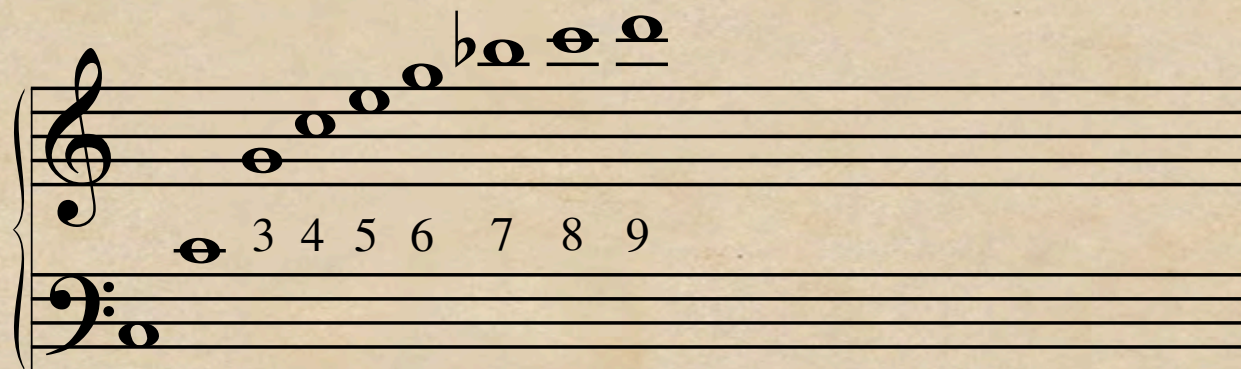
Building the Series



1 2
Partial

Overtone Series

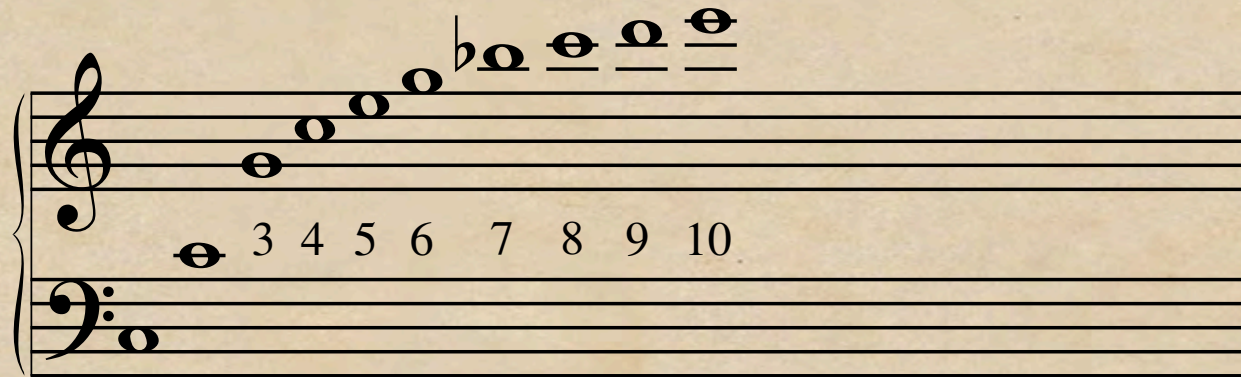
Building the Series



1 2
Partial

Overtone Series

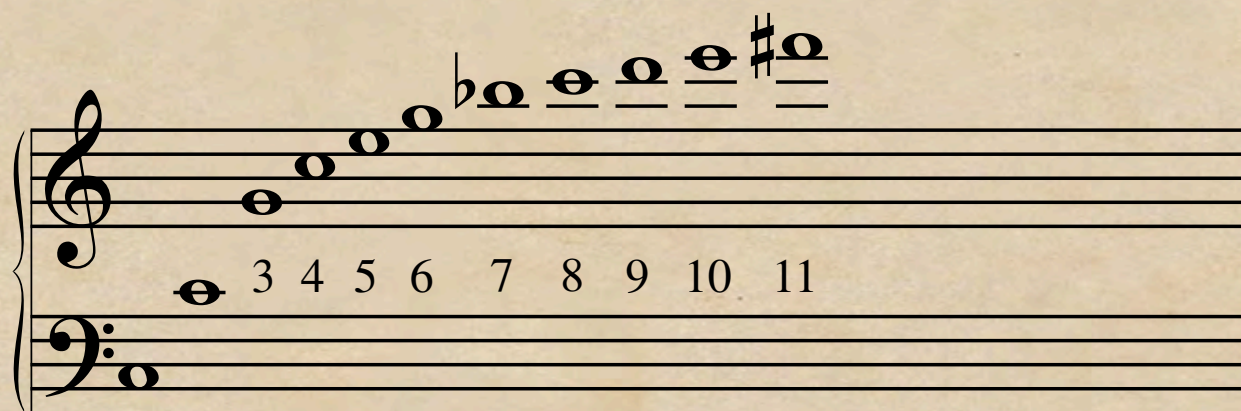
Building the Series



1 2
Partial

Overtone Series

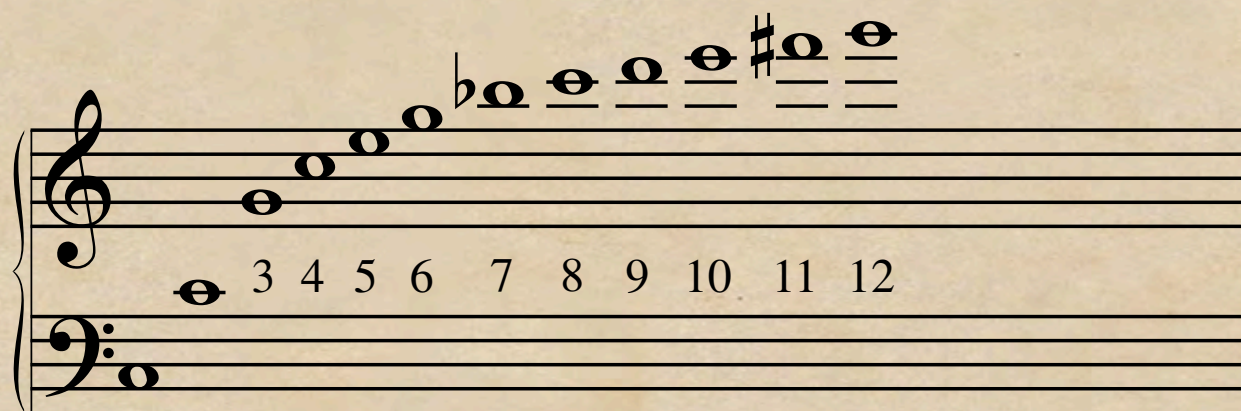
Building the Series



1 2
Partial

Overtone Series

Building the Series



1 2
Partial

Overtone Series

Building the Series

A musical score on a grand staff (treble and bass clefs) illustrating the overtone series. The notes are numbered 1 through 13. The notes are: 1 (C2), 2 (C3), 3 (G2), 4 (E2), 5 (C3), 6 (B1), 7 (F2), 8 (D2), 9 (C3), 10 (B2), 11 (G2), 12 (F2), 13 (E2). The notes are written on a grand staff with a brace on the left. The notes are: 1 (C2), 2 (C3), 3 (G2), 4 (E2), 5 (C3), 6 (B1), 7 (F2), 8 (D2), 9 (C3), 10 (B2), 11 (G2), 12 (F2), 13 (E2). The notes are written on a grand staff with a brace on the left. The notes are: 1 (C2), 2 (C3), 3 (G2), 4 (E2), 5 (C3), 6 (B1), 7 (F2), 8 (D2), 9 (C3), 10 (B2), 11 (G2), 12 (F2), 13 (E2).

Overtone Series

Building the Series

A musical score on a grand staff (treble and bass clefs) illustrating the first 14 notes of an overtone series. The notes are: 1 (C2), 2 (C3), 3 (G2), 4 (C3), 5 (E3), 6 (G3), 7 (Bb3), 8 (C4), 9 (D4), 10 (E4), 11 (F#4), 12 (G4), 13 (Ab4), and 14 (A4). The notes are placed on the staff lines, with some notes (3-14) having horizontal lines underneath them to indicate their relative positions. The numbers 1 and 2 are written below the first two notes, and the numbers 3 through 14 are written below the notes in the bass clef.

Overtone Series

Building the Series

A musical score on a grand staff (treble and bass clefs) illustrating the first 15 notes of an overtone series. The notes are numbered 1 through 15 below the staff. The notes are: 1 (C2), 2 (C3), 3 (G2), 4 (E3), 5 (C4), 6 (G3), 7 (E3 with flat), 8 (C4), 9 (G3), 10 (E3), 11 (C4 with sharp), 12 (G3), 13 (E3), 14 (C4 with flat), and 15 (G3 with natural). The notes are written on the grand staff with a brace on the left. The first two notes (1 and 2) are on the bass clef, and the remaining notes (3-15) are on the treble clef.

Overtone Series

3, 6, 12 = Sharp

5, 10 = Flat

7, 14 = Very Flat

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1 2

1, 2, 4, 8, 16 = OK

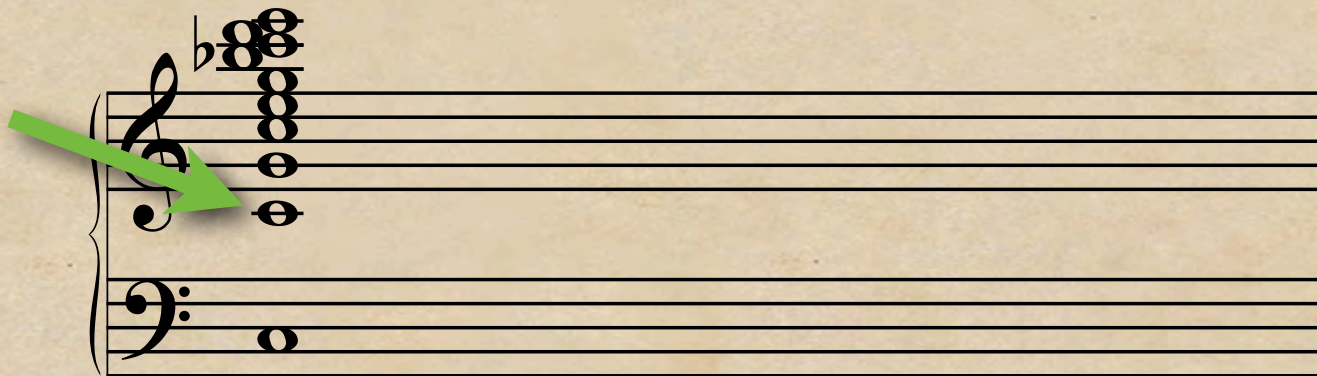
Overtone Series Part 2

THE SEVEN SERIES

Overtone Series



C Series (open)

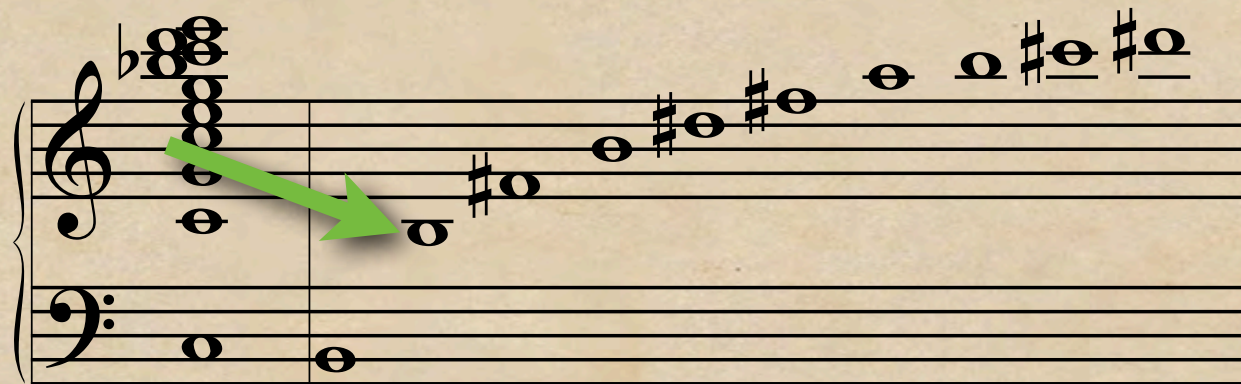


OPEN

Overtone Series



B Series (2nd Valve)



OPEN 2

Overtone Series



Bb Series (1st valve)

OPEN 2 1

Overtone Series



Ab Series (23)

OPEN 2 1 12 or 3 23

Overtone Series



G Series (13)

OPEN 2 1 12 23 13
or 3

Overtone Series

Pitch Tendencies (valves)

Diagram illustrating the overtone series for various valve combinations on a trombone. The series are shown on a musical staff with the corresponding valve settings indicated above and below the staff.

Valve combinations and their corresponding overtone series (from top to bottom):

- OPEN (3 'ok' circles)
- 2 (2 'ok' circles)
- 1 (1 'ok' circle)
- 12 (triangle 's#')
- 23 (square '*sb')
- 13 (triangle 'm#')
- 123 (triangle 'v#')

Below the staff, the valve combinations are labeled: OPEN, 2, 1, 12, 23, 13, 123. A blue box with '*sb' is positioned below the '12' label.

* Can vary depending on the manufacturer.

Overtone Series

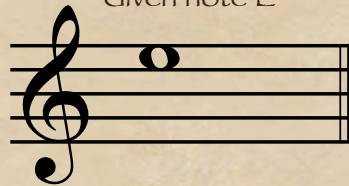
ALL POSSIBLE FINGERINGS

Overtone Series

All possible fingerings

Trumpet

Given note E



Musical staff showing the overtone series for the note E. The staff is divided into seven measures, each corresponding to a note in the series. Above each measure is a small image of a trumpet mouthpiece and valve configuration. Below the staff are the fingerings for each note: OPEN, 2, 1, 12 or 3, 23, 13, and 123. The notes are: E (OPEN), F# (2), G (1), A (12 or 3), Bb (23), C (13), and D# (123).

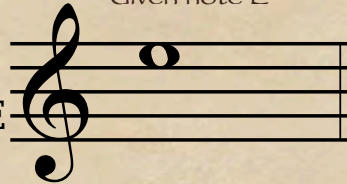
Overtone Series

All possible fingerings

Trumpet

- ◆ Check for given note **NONE**

Given note E



A musical staff showing the overtone series for a trumpet. The staff is divided into seven measures, each representing a different fingering. The notes are: OPEN, 2, 1, 12, 23, 13, and 123. The notes are written on a treble clef staff with various accidentals (sharps and flats) and are accompanied by diagrams of the trumpet's valve positions. The bass clef staff below shows the corresponding notes for each fingering.

OPEN 2 1 12 23 13 123

or 3

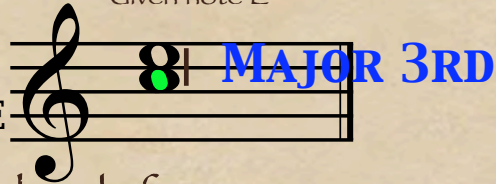
Overtone Series

All possible fingerings

Trumpet

- ◆ Check for given note **NONE**
- ◆ Think down Major 3rd, check for series **OPEN**

Given note E



OPEN 2 1 12
or 3 23 13 123

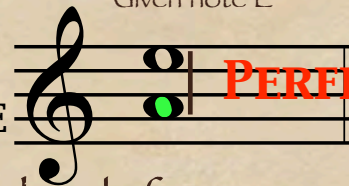
Overtone Series

All possible fingerings

Trumpet

- ◆ Check for given note

NONE



PERFECT 5TH

- ◆ Think down Major 3rd, check for series

OPEN

- ◆ Think down Perfect 5th, check for series

12 OR 3

OPEN 2 1 12
or 3 23 13 123

Overtone Series

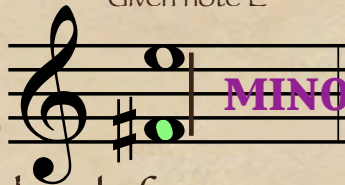
All possible fingerings

Trumpet

Given note E

- ◆ Check for given note

NONE



MINOR 7TH

- ◆ Think down Major 3rd, check for series

OPEN

- ◆ Think down Perfect 5th, check for series

12 OR 3

- ◆ Think down minor 7th, check for series

123

OPEN 2 1 12 or 3 23 13 123

Overtone Series

CHOOSE PREFERRED FINGERING

Overtone Series

Choosing preferred fingering

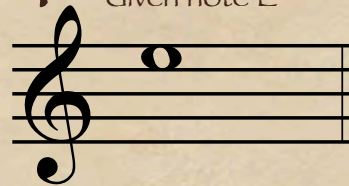
- ◆ Least number of valves,
- ◆ Unless it involves 3rd valve,
- ◆ Or is the 7th partial

Overtone Series

Choosing preferred fingering

Trumpet

Given note E



- ◆ Least number of valves

OPEN 12 OR 3 123

OPEN 2 1 12 23 13 123

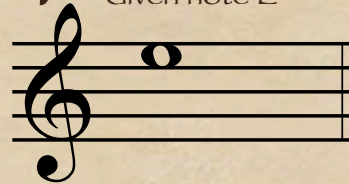
or 3

Overtone Series

Choosing preferred fingering

Trumpet

Given note E



- ◆ Least number of valves,
- ◆ Unless it involves 3rd valve

Diagram illustrating the overtone series for the note E on a trumpet, showing the preferred fingering for each note:

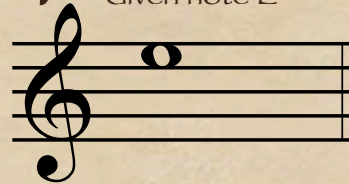
- OPEN (highlighted in green)
- 2
- 1
- ~~12 OR 3~~
- 23
- 13
- 123

Overtone Series

Choosing preferred fingering

Trumpet

Given note E



- ◆ Least number of valves,
- ◆ Unless it involves 3rd valve,
- ◆ Or is the 7th partial

Diagram illustrating the overtone series for the note E on a trumpet, showing preferred fingerings for each partial:

- Partial 1: OPEN
- Partial 2: 2
- Partial 3: 1
- Partial 4: 12 (or 3)
- Partial 5: 23
- Partial 6: 13
- Partial 7: ~~123~~

Overtone Series

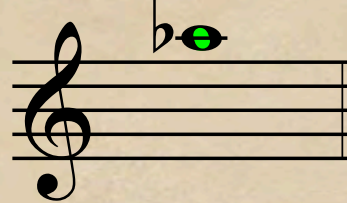
ALL POSSIBLE FINGERINGS (High Ab)

Overtone Series

All possible fingerings

Trumpet

Given note Ab



- ◆ Check for given note 23

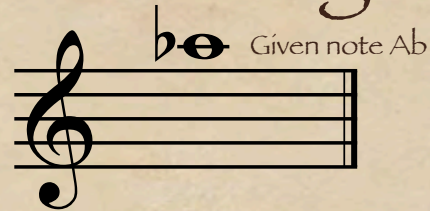
OPEN 2 1 12 23 13 123

or 3

Overtone Series

All possible fingerings

Trumpet



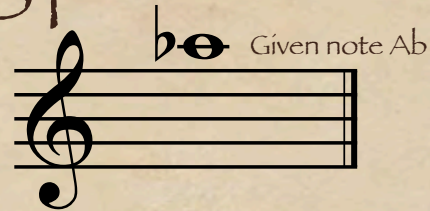
- ◆ There are 3 possible fingerings:

A musical staff showing the overtone series for the note Ab. The notes are arranged in a series of chords. Three specific fingerings are highlighted with green arrows and labeled with numbers: '1' for the first overtone, '23' for the second overtone, and '123' for the third overtone. Below the staff, the corresponding fingerings are listed: OPEN, 2, 1, 12 or 3, 23, 13, 123.

Overtone Series

Choosing preferred fingering

Trumpet



- ◆ Least number of valves

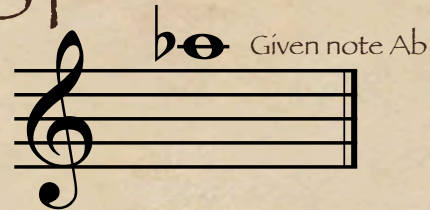
1 23 123

OPEN 2 1 12 or 3 23 13 123

Overtone Series

Choosing preferred fingering

Trumpet



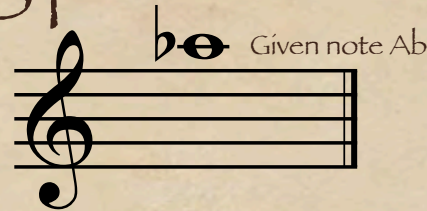
- ◆ Least number of valves
- ◆ Unless it involves 3rd valve

A musical staff showing the overtone series for the given note Ab. The staff is divided into seven measures, each representing a different fingering. The fingerings are: OPEN, 2, 1, 12, 23, 13, and 123. The first measure, labeled "1", is highlighted with a green box. The staff also shows the corresponding notes and valve markings for each fingering.

Overtone Series

Choosing preferred fingering

Trumpet



- ◆ Least number of valves
- ◆ Unless it involves 3rd valve
- ◆ Or is the 7th partial

1 23 123

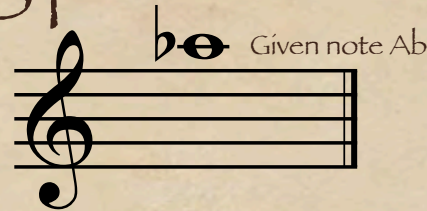
OPEN 2 1 12 23 13 123

or 3

Overtone Series

Choosing preferred fingering

Trumpet



- ◆ Least number of valves
- ◆ Unless it involves 3rd valve
- ◆ Or is the 7th partial

A musical staff showing the overtone series for various trumpet fingerings. The notes are arranged in two staves (treble and bass clef). Fingerings are indicated below the notes: OPEN, 2, 1, 12, 23, 13, 123. The '1' fingering is crossed out with a red X, and the '23' fingering is highlighted in a green box.

Overtone Series

PITCH TENDENCY (PARTIALS + VALVES)

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet

Three musical staves showing the fundamental notes for Trumpet in different valve positions:

- OPEN:** C4 (middle C)
- 2:** B3 (one half step below middle C)
- 1:** B \flat 3 (one whole step below middle C)

A large musical staff showing the overtone series for the three valve positions. The series are shown in groups of five notes each, with red numbers 1-5 indicating the partials. Green arrows point to the 5th partial of each series. The series are labeled OPEN, 2, 1, 12, 23, 13, and 123.

Labels below the staff: OPEN, 2, 1, 12, 23, 13, 123

Additional label: or 3

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet



5, 10 = Flat

5th partials = flat
valves = ok

overall pitch = flat

OPEN 2 1 12 23 13 123

or 3

Brass Pitch Problems

Holst 2nd Suite • 2nd Mvt

2 Bb Cor.

Bb Tpts.

The image shows a musical score for two parts: 2 Bb Cor. (top staff) and Bb Tpts. (bottom staff). The 2 Bb Cor. staff has a yellow highlight over the notes in the second measure, indicating a pitch problem. The Bb Tpts. staff has notes in the first and second measures, with a slur under the notes in the second measure.

Brass Pitch Problems

Holst 2nd Suite • 2nd Mvt

2 Bb Cor.

5th partials = flat

OPEN OPEN 1

Bb Tpts.

The image shows a musical score for two parts: 2 Bb Cor. (B-flat Cornets) and Bb Tpts. (B-flat Trumpets). The score is written in treble clef with a key signature of two flats (B-flat and E-flat). The music consists of two measures. In the first measure, the Bb Cor. part has a half note on G4 (written as a whole note with a fermata) and the Bb Tpts. part has a half note on G3. In the second measure, the Bb Cor. part has a half note on G4 (written as a whole note with a fermata) and the Bb Tpts. part has a half note on G3. The text '5th partials = flat' is written above the Bb Cor. staff, with 'flat' highlighted in a blue box. Below the Bb Cor. staff, the words 'OPEN' are written under the first and second notes, and '1' is written under the third note. The Bb Tpts. staff has a slur under the two notes in the second measure.

Brass Pitch Problems

Holst 2nd Suite • 2nd Mvt

2 Bb Cor.

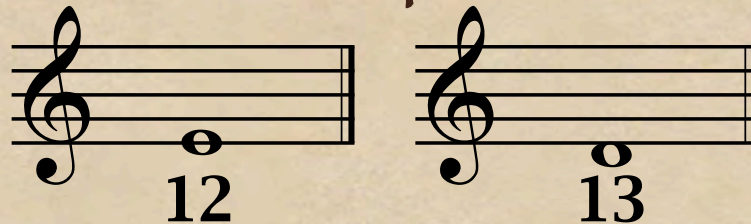
Bb Tpts.

The image shows a musical score for two parts: 2 Bb Cor. (B-flat Cornets) and Bb Tpts. (B-flat Trumpets). The score is written in treble clef with a key signature of one flat (B-flat). The 2 Bb Cor. part has a melodic line with a slur over the first two measures. The Bb Tpts. part has a similar melodic line, but a green arrow points to a yellow highlighted area in the second measure, indicating a specific pitch problem or correction.

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet



3rd partials = #

valves = #

overall pitch = #

3, 6, 12 = Sharp

OPEN 2 1 12 23 13 123

or 3

Brass Pitch Problems

Holst 2nd Suite • 2nd Mvt

2 Bb Cor.

5th partials = flat

OPEN OPEN 1

Bb Tpts.

3rd partials = #

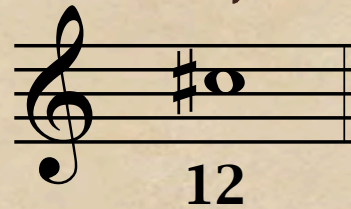
12 12 13

Detailed description: The image shows a musical score for two parts: 2 Bb Cor. (top staff) and Bb Tpts. (bottom staff). The music is in 2/4 time and consists of two measures. The first measure contains a half note G3 (written as a whole note in the image) and a half note F3. The second measure contains a half note G3 and a half note E3. Annotations indicate pitch problems: '5th partials = flat' with a blue box around 'flat' above the first measure; '3rd partials = #' with a red triangle around '#' above the second measure. Fingerings are indicated below the notes: 'OPEN' for the first note in both staves, 'OPEN' for the second note in the horn staff and '1' for the second note in the trumpet staff. Red numbers '12', '12', and '13' are placed below the notes in the second measure.

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet

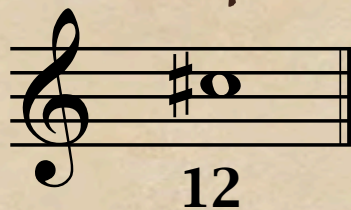


A complex musical diagram showing the overtone series for a trumpet. It features a grand staff with multiple notes and accidentals. A green arrow points to a specific note in the upper register. Below the staff are valve numbers: OPEN, 2, 1, 12 or 3, 23, 13, 123.

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet



5, 10 = Flat

5th partial = flat
 12 valve combo = #

Overall pitch = ok

5
4
3
2

1
2
3

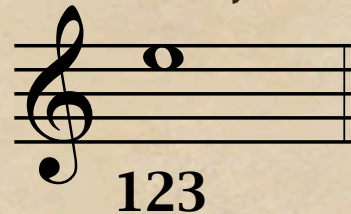
OPEN 2 1 12 23 13 123

or 3

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet



7th Partial Usage

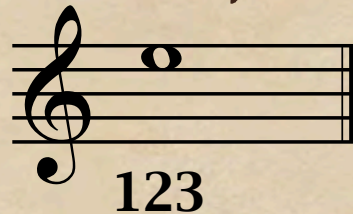
OPEN 2 1 12 23 13 123

or 3

Overtone Series

Pitch Tendencies (partials + valves)

Trumpet



7th Partial Usage

7, 14 = Very Flat

7th partial = very flat
 123 valve combo = v. sharp

Overall pitch = ok

OPEN 2 1 12 or 3 23 13 123

Overtone Series

RELATIONSHIP TO WOODWINDS

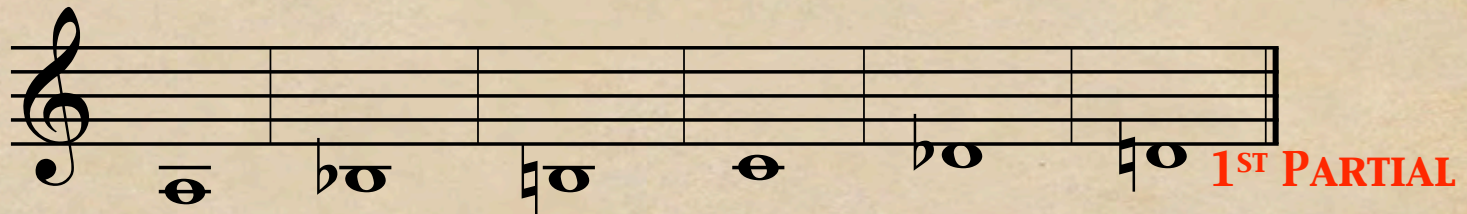
Woodwind Fingerings

Elsa's Procession

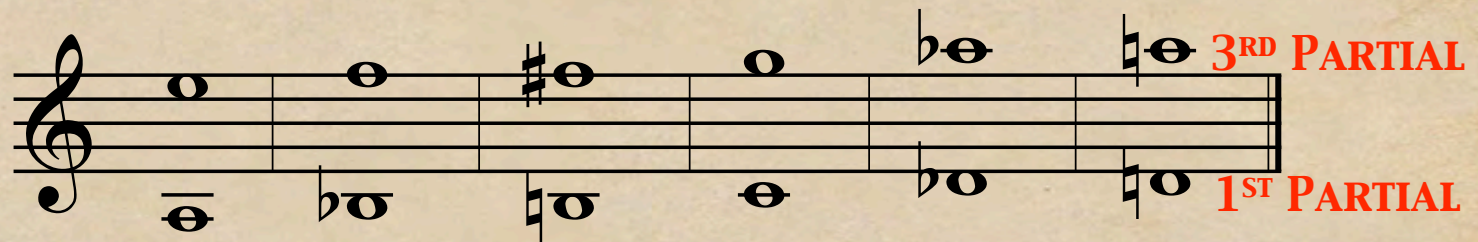
B \flat Cls. I

The image shows a single staff of music for B \flat Clarinet I. The notation includes a treble clef, a key signature of one flat (B \flat), and a common time signature (C). The music consists of several measures with various note values and rests. A yellow rectangular highlight is placed over the second, third, and fourth measures of the piece, indicating the specific fingering information provided in the document.

Chalumeau Fingerings



Clarion Fingerings



+ REGISTER KEY



Altissimo Fingerings

A musical staff in treble clef showing six altissimo notes. Above the staff, notes are shown with accidentals and stems. To the right of the staff, the notes are labeled with their partials in red text: 5TH PARTIAL, 3RD PARTIAL, and 1ST PARTIAL. Below the staff, the notes are shown with stems and accidentals, corresponding to the partials.

+ REGISTER KEY

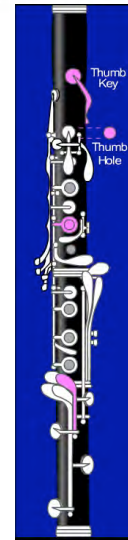
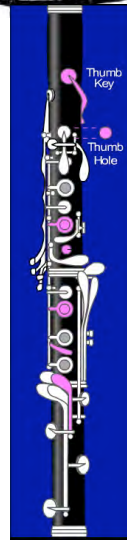
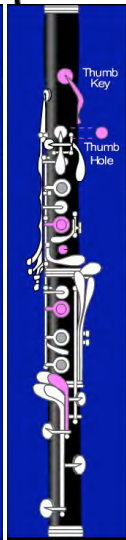
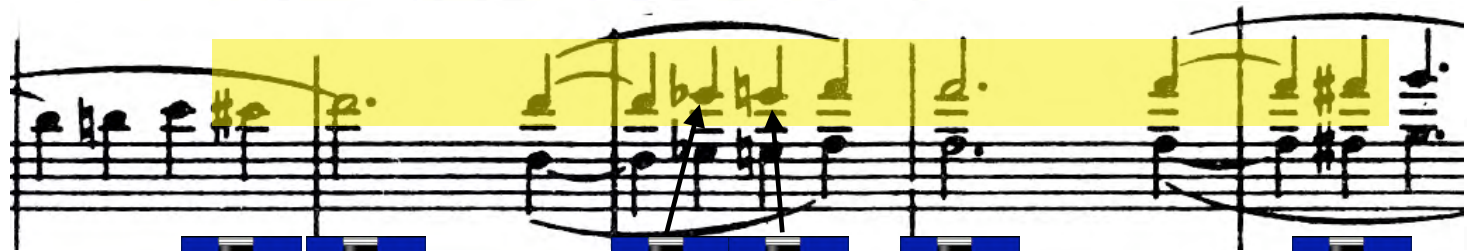
- 1ST FINGER



Woodwind Fingerings

Elsa's Procession

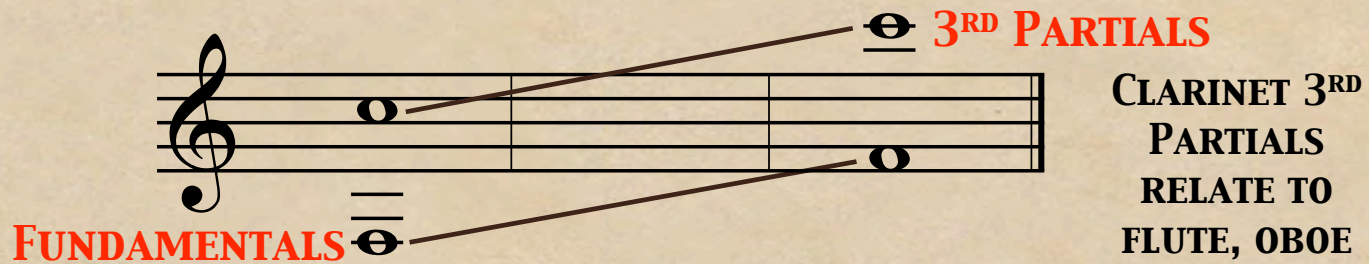
B \flat Cls. I



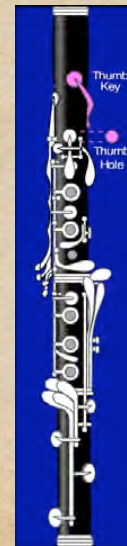
Overtone Series

Relationship to Woodwinds

(from clarinet)



**CLARINET
FUNDAMENTALS
RELATE TO
BASSOON
FINGERINGS**



Overtone Series

TRUMPET RELATED TO OTHER BRASS

Overtone Series

B.C. Baritone to Trumpet

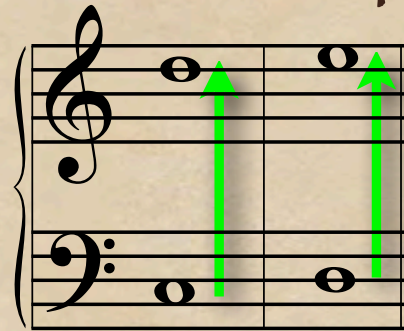


1 OPEN

Go up Major 9th,
then think trumpet fingerings

Overtone Series

Tuba to Trumpet



1 OPEN

Go up two Octaves + Major 2nd,
then think trumpet fingerings

Overtone Series

Horn (F side) to Trumpet



Go up Octave,
then think trumpet fingerings

Overtone Series

Horn (Bb side) to Trumpet



12 1

Go up perfect 5th,
then think trumpet fingerings

Overtone Series

Trombone & Trumpet Relationship

TRUMPET

open 2 1 12 or 3 23 13 123

TROMBONE

1st 2nd 3rd 4th 5th 6th 7th

Trumpet Note	Fingering	Trombone Note	Position
C4	open	C3	1st
C5	2	C4	2nd
E5	1	E4	3rd
G5	12 or 3	G4	4th
B5	23	B4	5th
C6	13	C5	6th
E6	123	E5	7th

Brass Pitch Problems

Air for Band - 2 measures before letter E

The image shows a musical score for a brass section. The instruments listed are Trumpet 1 & 2, Trumpet 3, Horn 1 & 2, Trombone 1 & 2, Trombone 3, Euphonium, and Tuba. The score is in 2/4 time and features a key signature of one flat (B-flat). The first two measures are circled in green. Annotations include:

- 3rd partials = # (red triangle)
- valves = # (red triangle)
- Overall pitch = # (red triangle) with a green arrow pointing to the circled notes in the Trumpet 1 & 2 part.
- Overall pitch = # (red triangle) with a green arrow pointing to the circled notes in the Trumpet 3 part.
- A yellow highlight covers the notes in the Horn 1 & 2 part, with a green arrow pointing to it.
- Red numbers '13' are written below the circled notes in the Trumpet 1 & 2 and Trumpet 3 parts.

Brass Pitch Problems

Air for Band - 2 measures before letter E

Horn (F side) to Trumpet

Go up octave,
then think trumpet fingering

Horn 1 & 2



Brass Pitch Problems

Air for Band - 2 measures before letter E

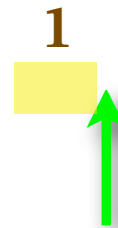
Horn (F side) to Trumpet

Go up octave,
then think trumpet fingering

5th partials = flat
valves = ok

overall pitch = flat

Horn 1 & 2



Brass Pitch Problems

Air for Band - 2 measures before letter E

The image shows a musical score for a brass section. The instruments listed are Trumpet 1 & 2, Trumpet 3, Horn 1 & 2, Trombone 1 & 2, Trombone 3, Euphonium, and Tuba. The score is in 4/4 time with a key signature of one flat (B-flat major). The music is divided into two measures. The first measure contains a melodic line for the trumpets and horns, and a harmonic line for the trombones, euphonium, and tuba. The second measure contains a similar melodic line for the trumpets and horns, and a harmonic line for the trombones, euphonium, and tuba. The overall pitch of the music is indicated by a red triangle with a sharp sign (#) and a blue box with the word 'flat'. The number 13 is written in red below the first two staves, and the number 1 is written in brown below the third staff. A yellow highlight is placed under the Euphonium staff in the second measure. Green arrows point from the annotations to the corresponding staves.

Trumpet 1 & 2 Overall pitch = #

Trumpet 3 Overall pitch = #

Horn 1 & 2 Overall pitch = flat

Euphonium

Brass Pitch Problems

Air for Band - 2 measures before letter E

B.C. Baritone to Trumpet

Go up M⁹th,
then think trumpet fingering

Euphonium



Brass Pitch Problems

Air for Band - 2 measures before letter E

B.C. Baritone to Trumpet

Go up M9th,
then think trumpet fingering

Trumpet

Euphonium



3rd partials = #

valves = #

overall pitch = #

Brass Pitch Problems

Air for Band - 2 measures before letter E

Trumpet 1 & 2 Overall pitch = #

Trumpet 3 Overall pitch = #

Horn 1 & 2 Overall pitch = flat

Euphonium Overall pitch = #

Tuba

Brass Pitch Problems

Air for Band - 2 measures before letter E

Tuba to Trumpet

Go up two octaves + M2nd,
then think trumpet fingering

Tuba



Brass Pitch Problems

Air for Band - 2 measures before letter E

Tuba to Trumpet

Go up two octaves + M2nd,
then think trumpet fingering

Tuba



Brass Pitch Problems

Air for Band - 2 measures before letter E

Tuba to Trumpet

Go up two octaves + M2nd,
then think trumpet fingering

Trumpet

Tuba



3rd partials = #

valves = #

overall pitch = #

Brass Pitch Problems

Air for Band - 2 measures before letter E

The image shows a musical score for a brass section. The instruments listed are Trumpet 1 & 2, Trumpet 3, Horn 1 & 2, Trombone 1 & 2, Trombone 3, Euphonium, and Tuba. The score is in 3/4 time and features a key signature of one flat (B-flat). The music is divided into two measures. The second measure contains several notes that are circled in red. To the right of the score, green arrows point from text boxes to these circled notes. The text boxes indicate the overall pitch for each instrument group: Trumpet 1 & 2, Trumpet 3, Euphonium, and Tuba are marked with a red triangle containing a sharp symbol (#), while Horn 1 & 2 is marked with a blue square containing the word 'flat'. The circled notes in the second measure are: Trumpet 1 & 2 (G4), Trumpet 3 (F4), Horn 1 & 2 (E4), Trombone 1 & 2 (D3), Trombone 3 (C3), Euphonium (B2), and Tuba (B1). The number '13' is written in red below the circled notes for Trumpet 1 & 2, Trumpet 3, and Euphonium.

Trumpet 1 & 2 Overall pitch = #

Trumpet 3 Overall pitch = #

Horn 1 & 2 Overall pitch = flat

Trombone 1 & 2

Trombone 3

Euphonium Overall pitch = #

Tuba Overall pitch = #

Partial to the Winds

The Power of the
Overtone Series

Max McKee (maxmckee@bandworld.org)

Scott McKee (scottmckee@bandworld.org)



Get more info at www.bandworld.org