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# Overtone Series

EUPHONIUM & TUBA (Use of 4<sup>th</sup> Valve)

# Overtone Series

## Trumpet & Low Brass Relationship

The diagram illustrates the overtone series for four brass instruments: Trumpet, Trombone, Euphonium, and Tuba. Each instrument's series is shown on a staff with a clef and a key signature of one flat (B-flat). The notes are labeled with their corresponding harmonic numbers or fingering patterns.

Instrument	1st	2nd	3rd	4th	5th	6th	7th
TRUMPET	open	2	1	12 or 3	23	13	123
TROMBONE	1st	2nd	3rd	4th	5th	6th	7th
EUPHONIUM	open	2	1	12 or 3	23	13 or 4	123 or 24
TUBA	open	2	1	12 or 3	23	13 or 4	123 or 24

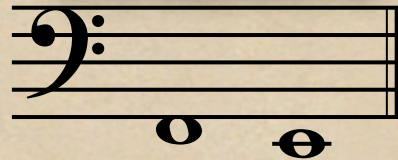
The diagram shows the following notes and labels for each instrument's overtone series:

- TRUMPET:** open, 2, 1, 12 or 3, 23, 13, 123
- TROMBONE:** 1st, 2nd, 3rd, 4th, 5th, 6th, 7th
- EUPHONIUM:** open, 2, 1, 12 or 3, 23, 13 or 4, 123 or 24
- TUBA:** open, 2, 1, 12 or 3, 23, 13 or 4, 123 or 24

# Overtone Series

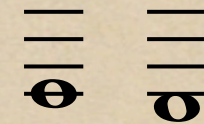
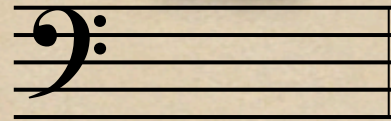
## Use of 4<sup>th</sup> Valve

### EUPHONIUM



Standard Fingering	13	123
4 <sup>th</sup> Valve Fingering	4	24

### TUBA



13	123	Standard Fingering
4	24	4 <sup>th</sup> Valve Fingering

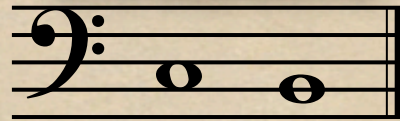
### EUPHONIUM

### TUBA

# Overtone Series

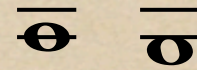
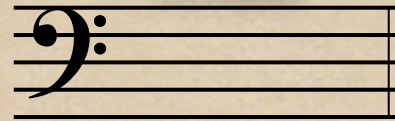
## Use of 4<sup>th</sup> Valve

### EUPHONIUM



Standard Fingering	13	123
4 <sup>th</sup> Valve Fingering	4	24

### TUBA



13	123	Standard Fingering
4	24	4 <sup>th</sup> Valve Fingering

- ◆ The C & B on Euphonium enjoy the same alternates with 4<sup>th</sup> valve.
- ◆ The C & B on the Tuba accomplish the same thing an octave lower.

# Overtone Series

## Use of 4<sup>th</sup> Valve

### EUPHONIUM

The image shows a musical staff with a bass clef and a key signature of one flat (Bb). The notes are: Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb. Below the staff, the corresponding fingerings are listed: 0, 2, 1, 12, 23, 4, 24, 14, 124, 234, 134, 1234, 0. The fingerings from 4 to 1234 are highlighted in blue.

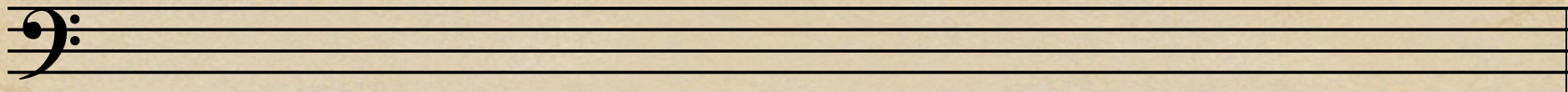
0	2	1	12	23	4	24	14	124	234	134	1234	0
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












- ◆ With the use of the 4<sup>th</sup> valve on a compensating euphonium, you can use the fingerings shown above to play chromatically down to pedal Bb.

# Overtone Series

## Use of 4<sup>th</sup> Valve

TUBA



												
0	2	1	12	23	4	24	14	124	234	134	1234	0

- ◆ With the use of the 4<sup>th</sup> valve on a compensating tuba, you can use the fingerings shown above to play chromatically down to pedal Bb.