

Trumpet Solo Class Lecture #4

“Breathing Exercises”

Dr. Mark Ponzo

The Breathing Mechanism

- lungs (capacity = total volume based on height, gender and age)
- throat/tongue (passage to the embouchure)
- inter-coastal muscles (used for tidal breathing)
- abdominal muscles (used for full capacity inhalation and exhalation)
- tidal breathing (10-15% of capacity)
- full capacity breathing (100% inhalation, 85-90% exhalation)
- residual air (10-15% of capacity)
- muscle function (single direction contraction, set in pairs)

Breathing Function

- air vacuum (rate, intensity and volume of inhalation)
- air compression (rate, intensity and volume of exhalation)
- chest, rib cage and sternum (tidal breathing)
- abdominal cavity (full capacity breathing)
- breathing stages (lower 75%, upper 25%)
- support through resistance (embouchure and instrument)
- extend the breathing process beyond your playing requirements
- avoid tension while breathing/playing (e. g. muscles working in opposition - isometrics)
- inhale with a subtle “HOW” sound, throat open and tongue down
- a slow/deep breath promotes full muscle expansion
- condition yourself to breath correctly

Air Speed/Volume

- high compression creates fast air, while low compression creates slow air
- high volume produces a loud sound, while low volume produces a soft sound
 - high compression and low volume = high/soft pitch
 - high compression and high volume = high/loud pitch
 - low compression and low volume = low/soft pitch
 - low compression and high volume = low/loud pitch

Common Misinterpretations of the Process

- breath from the diaphragm
- chest out/stomach in
- spinal (back bone) arch
- multi directional muscle retraction
- take a big breath in order to play in the upper register
- bearing down (birthing reflex) in order to exhale

Starting Correctly

- think about the process
- positive mental attitude
- relaxation and stretching
- posture standing or sitting
 - skeletal structure (back bone) supports body weight to enable the process
 - balance/lift while sitting
 - extend up from the top of the cranium (“puppet on a string”)
 - keep an open thorax (head up)
 - feet position (second position allows the rib cage to float and elevate)
 - arm position in relationship to rib cage
 - anterior/posterior musculature
 - bring the instrument to the embouchure
- relax and breath fully
- breath in time (use a metronome)
- do not hold the breath in preparation (Valsalva Maneuver)

Breathing Equipment

Polyurethane Tube

to promote and openness in the throat/awareness of tongue position

Inspiration Spirometer

measurement of inhalation volume

Expiration Spirometer

measurement of the exhalation volume

Breathing Tube (ping-pong ball type)

visualization of the air stream

Compression/Vacuum Gauge

measurement inhalation/exhalation pressure

PCV Breathing Tube (Dr. Mark Ponzo design)

to establish a physical awareness of the air vacuum/compression

Breathing Exercises

- breath in time using simple numerical sets (in 4, out 4/in 4 out 8)
- prepare the breath (inhale on 4, exhale on 1 and 2, rest on 3 - mm= 40, 60, 80, 100, 120)
- inhale, hold open, exhale, hold open
- inhale, exhale and retract the abdominal wall
- inhale/exhale in increasing values (in 2, out 2/in 3, out 3)
- inhale against resistance
- exhale against resistance
- inhale 4, exhale to residual zone
- use breathing devises

Considerations

- Listen often and internalize a great trumpet sound.
- Strive to reproduce your ideal sound in practice and performance.
- Inhale fully and exhale as quickly and freely as possible.
- The air should always be flowing (in/out), never static.
- Play from the top 70% of the air, mark music accordingly.
- Exertion increases geometrically during exhalation of the last 30% of the air.
- Match the type of breath to the style of music.
- Play in big spaces and fill the room with an open sound.