

The Contemporary Trumpet

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Mechanics of the instrument

The trumpet (ordinarily) has three valves – operated by the middle three fingers of the right hand – all of which lower the pitch of the instrument:

1st valve – 1 tone

2nd valve – 1 semitone

3rd valve – 1 minor third

Through different combinations of valves and no valves (called 'open') we have a maximum of seven different

positions; just as the trombone has seven positions on its slide. The first and third valves have triggers, or slides, which act as pitch adjusters.

Contemporary trumpet techniques

Contemporary trumpet techniques have been influenced by jazz trumpet, the techniques of the Australian didgeridoo players, trumpet improvisors, techniques possible on woodwind and other brass instruments and by electronic music.

These result from the exploration and experimentation into areas of tonguing/articulation, pitch, timbre, counterpoint and microtonality, as well as from the refusal to accept the limits imposed upon us by the instrument. These effects are often more clearly audible (and possibly more easily achieved) on the larger brass instruments such as the trombone and tuba.

Tonguing/articulation

- Single tonguing (staccato to very smooth)
- Multiple tonguing – combinations of 'Ta' and 'Ka' (double or triple)
- 'Doodle tonguing' – as it sounds, taken from jazz
- Flutter tongue (flz) (some people growl from the throat if they cannot roll their R's.) Easier at louder dynamics as it relies upon a lot of air
- Mid-range fluttered notes more easily played than high or low flutters (ex.: Luciano Berio Sequenza X for trumpet and resonator; Franco Donatoni Short for solo trumpet.)

Pitch

- Lip bends – usually downwards a semitone or less, or moving quasi-glissando around smaller

intervals (Example- how it is notated)

- Lip glissandi – over the natural harmonics/using half-valved technique
- Notes which use either or both 1st and 3rd valves can be manipulated like a glissando using the slides or triggers
- Pedal notes – notes below the normal range of the trumpet, which can be 'faked'. Best to write them in bass clef, rather than having lots of ledger lines- that is much easier to read.
(examples.: Karlheinz Stockhausen Eingang und Forme; Jonathan Harvey Ricerare una melodia)
- Vibrato: by using the lip, Jaw, diaphragm (air)

Colours

With these sounds the trumpet is being used as an amplifier.

- Mutes – straight, cup, plunger, harmon (Miles Davis), wa-wa, whisper (or practice). The use of mutes can also help the dynamic balance within an ensemble as well as providing a change in timbre
- Overtones – produced using the Wa-Wa or plunger mutes. With the plunger mute, it is more a change in tone colour. In Short, Donatoni uses four positions from fully closed, to fully open. Problems in pitch accuracy can result with the fluctuating resistance levels
- Coloured noises/plosive attacks. These can be produced by blowing air down the instrument, without vibrating the lips (slack embouchure). The resultant pitches sound a semitone higher, but the range is restricted). We can only play the seven fundamentals of the trumpet- as we have seven different fingerings (positions)
'Plosive attacks' [pi-u] are possible by speaking sharply and voicelessly into the mouthpiece of the trumpet like pistol shots
- Shake – it is possible to produce that well-known jazz tremolo effect by moving the right hand forwards and backwards quickly. It can be used more subtly as a vibrato effect
- Lip trill – actually a tongue trill, particularly in the upper register
- Half-valve – can create a distant effect, and can be used to achieve glissandi (examples.: Stockhausen Oberlippentanz, Samstag or Eingang und Formel)

Contrapuntal Effects

- Split-tones – these result from the two lips vibrating at different frequencies, producing multiphonics (two pitches) between the notes of the harmonic series, producing impure 3rds and 4ths. There are three techniques:
 - i) by forcing the lips together (and possibly pursing them a little) and thus restricting the amount of air which can pass through them;
 - ii) by pushing the lips together (and pulling them in a little) and thus restricting the amount of air which can pass through them;
 - iii) by removing the upper lip a little from inside the mouthpiece. It is also possible to increase the dirtiness of the split-tone.

Some players prefer to go into the split tone from an ordinary tone, others begin immediately with the split tone. The former can be a nice effect, heightened with the opening and closing of the plunger mute

Examples: Liza Lim)

- 'Singing-and-playing' or, more accurately, 'Humming-and-playing'. Take into account the sex of the player and the type of voice he/she has. Falsetto is used to sing above the note, although this is particularly problematic to achieve. Humming and playing the same note is possible. If the played note remains held while the voice glissandos downwards slowly and in a controlled way, a beating effect can result. Humming at the correct frequency can produce a fluttering effect similar to fluttersong – it is used in jazz and called a 'growl'
- Pedal Multiphonic – when a low C (15va below middle c) is played as a pedal tone with both lips – lips forward – a 'multiphonic' effect results (see pedals)

Miscellaneous

- Circular breathing- for long notes in the low and mid-range of the trumpet, this technique can be useful, though the 'sipping' noise, or the slight change in timbre during the breathing-in disturbs some composers.