

fabrication
for trumpet and electronics

christopher burns

Fabrication begins with a series of fragments. Elements of trumpet technique, like breathing and tonguing, are presented in isolation, rather than the combinations of ordinary playing. This acoustic study of the trumpet is taken up by other splinters of material: natural harmonics are used to produce distortions of pitch and timbre, and the performer creates acoustic disruptions with mutes, and by singing into the instrument. Eventually the trumpet is metaphorically constructed from its component techniques - just in time for a more literal disassembly.

While *Fabrication* is obsessed with trumpet acoustics, it is entirely dependent upon electronics. Many of the sounds used in the piece are too quiet to be heard in performance. And so the microphone serves as a microscope, revealing otherwise inaudible sounds. The electronics gradually take on an active role as well, transforming and extending the sound of the trumpet beyond its acoustic limits.

Performance notes:

Dynamic changes are instantaneous unless explicitly connected by hairpins.

The notated microtones are not to be played as quarter-tones but as smaller downward inflections, in each case generated by a "flat" member of the natural harmonic series. All microtones are notated with an accidental, and fingerings provided. Ordinary (equal-tempered) accidentals persist until the end of the measure; reminder accidentals are provided for all but repeated notes. Trills are frequently between two or more fingerings which produce the same pitch; fingerings are provided and the secondary pitch indicated in parentheses.

The modifications to the instrument required at mm. 117, 135, and 144 (removal of the third slide, the second valve, and the mouthpiece, respectively) tend to divorce sounding pitch from conventional fingerings, and to make sounding pitch unpredictable in general. In instances where fingering and notated result diverge, the fingerings are to be heeded, and the notation to be used as indication of general contour.

Glissandi are generally half-valved; exceptions are noted in the score ("third slide"). After m. 117 half-valving is generally not necessary to produce glissandi.

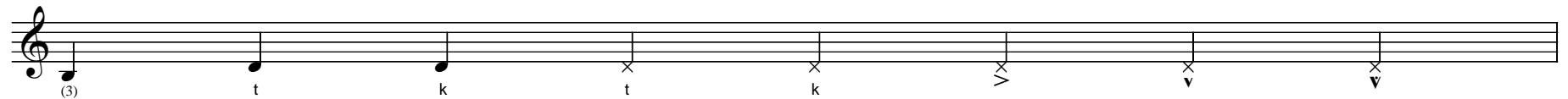
International phonetic alphabet symbols used: [s:] as in sue; [x:] as in German Ach; [f:] as in fife; [t:] as in to; [k:] as in cast.

Electronics setup:

The electronics may be realized with either one or three microphones (indicated in the score as I, II, and III). I is for amplification only, and should produce sound from a loudspeaker or speakers as close to the player as possible. II and III apply different types of signal processing and should be routed through a computer to loudspeakers in other parts of the hall if possible. If a single microphone is used, a sound engineer must be available to route the mic output to the different setups as indicated in the score.

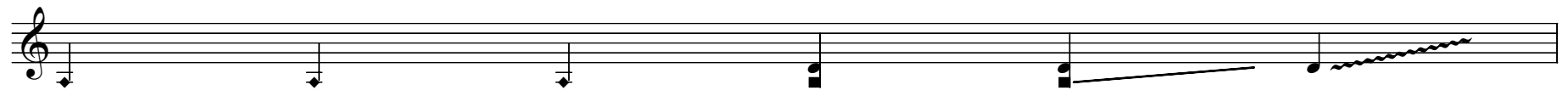
Software realizations for the piece are currently available for the Max/MSP and Pd environments; please contact the composer (via email: <cburns@ccrma.stanford.edu>) for details.

Special notations:



half-valve (also used in glissandi) tonguing indications tongue only (increasing scale of accent intensity for tonguing)

Detailed description: A musical staff in treble clef showing eight notes. The first note has a circled '3' below it. The second note has a 't' below it. The third note has a 'k' below it. The fourth note has an 'x' above it. The fifth note has a 'k' below it. The sixth note has a 't' below it with a small 'v' above it. The seventh note has a 't' below it with a larger 'v' above it. The eighth note has a 't' below it with the largest 'v' above it.



breath only [f:] [t:] ordinary pitch combined with sung multiphonic; sung note at any effective pitch sung multiphonic with glissando in specified direction "wild" glissando: complex contour achieved by improvised fingering and lip changes

Detailed description: A musical staff in treble clef showing six notes. The first note has a downward-pointing arrow below it. The second note has a downward-pointing arrow below it with '[f:]' to its left. The third note has a downward-pointing arrow below it with '[t:]' to its left. The fourth note has a square block below it. The fifth note has a square block below it with a diagonal line extending upwards to the right. The sixth note has a wavy line above it that rises in pitch.

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trumpet

$\bullet = 50$ tense, scurrying

I —————
plunger mute

—————
half-muted (+)

pp < p > pp $\frac{1}{2}$ f [s:] mf [x:] f (1) (2) 3 (3) 1 2 (1) (2)

4 pp < p f [s:] ff [x:] [x:] [s:] ff < fff p f p < mp mf 3/0

(1) —————
decel. trill

7 mf > (3)0 → 0 p < mp p mf p mf

10 pp p p < mp f [f:] p f pp f

I —————
tr

The score is written for a trumpet in G major, starting in 2/4 time and changing to 3/4, 2/4, 4/4, 5/4, 3/4, 2/4, 4/4, and 6/4. It includes dynamic markings such as *pp*, *p*, *f*, *mf*, *ff*, and *fff*. Performance instructions include 'tense, scurrying', 'plunger mute', 'half-muted (+)', and 'decel. trill'. Fingerings and breath marks are indicated throughout the piece.

I ————— I ————— I ————— II —————

14 *t t t k t k mp f k [f:] t [k:] t pp mf p f fff mf*

(+)

inhale

(II) ————— I —————

18 *pp mp mp p*

(+)

t t t k t k k k

+

22 *mp f p mp p mf*

set down plunger

[k:]

2 3 1 2 3 1 2 3 1 2 3

(gliss w/ 3rd slide)

24 *mp p f p pp f p mp pp*

0/1 3 2 3 2 3 2 2 2 2 1 2 3

II —————

(II) —————

28 *p [k:] t k k t [k:] [t:] k p pp p mp mf f pp*

1 2 3 (1) 2 3 1

31 *p* *mp* *f* *ff* *p* *pp* *f* *ppp* *pp* *p* *mf*

(3rd slide)

34 *pp* *p* *mp* *pp* *p < mp* *pp* *ppp* *mp < mf* *p* *p* *pp*

38 *p < mp* *pp* *mp* *mf* *p* *p* *pp* *mp < mf* *f* *mf*

42 *mp* *p* *pp* *p* *mp* *mf* *mp* *p* *pp*

(3rd slide)

49 *mp* *p* *pp* *p* *pp* *ppp* *f* *pp* *p* *mp*

53 *mp* $\frac{1}{3}$ *p* *mp* $\frac{1}{3}$ *mf* *f* *mp* $\frac{1}{3}$ *p* *pp* *p* *mf* *f* *ff*

56 *mp* *mf* *p* *pp* *p* *pp* *ppp* *p* *pp*

60 *p* *mf* *pp* *ppp* *mf* $\frac{2}{3}$ *mp* *p* *pp*

63 *pp* *mp* *ppp* *pp* *p* *mp* *pp* *ppp* *pp*

67 *mp* *f* *p* *pp* *mp* *f* *ff*

tranquil
III *tr* *molto decel. trill*
harmon mute (no stem)

(1) $\frac{3-1/1}{3}$ $\frac{3-1/1}{2}$

73

III

p *mf* *pp* *ff* *p* *mp*

78

III II

pp *mp* *p* *mf* *f* *mf* *f* *p*

83

III II III

pp *p* *pp* *p* *mp* *mf* *p* *pp*

87

II III

p *mf* *pp* *ppp* *pp*

91

I II III II

f *mp* *p* *f* *f* *pp* *mp* *mf*

95 *pp* *p* *mf* *f* *mf* *mp* *p*

III
remove harmon

99 *pp* *p* *mp* *pp*

103 *p* *ppp* *pp* *p* *pp* *p* *pp* *ppp*

106 *mp* *f* *mf* *f* *mp* *mf* *mp* *p* *pp* *ppp*

111 *p* *pp* *ppp* *ppp* *mf* *mp* *p* *pp*

● = 54
remove third slide

116 *mp* *pp* *ff* *f* *mf* *mp* *p*

120 *pp* *p < mp* *mf* *mp* *pp* *mp* *mf*

124 *f* *mf* *mp* *mf* *mp* *p* *pp*

128 *ppp* *p* *pp* *p* *pp* *p*

131 *pp < p* *pp < p* *ppp* *p* *ppp* *pp* *ppp*

exaggerated lip vibrato

♩ = 50
remove second valve

134 *mf* *f*

138 *mp* *pp* *mp* *p*

(II) (lip) (lip) (lip) (valve) *mp* *mf*

(II) subtones

138 *mp* *f*

142 *pp* *ppp*

(II) lip down *pp* *ppp*

subtone

142 *mp* *mf* *p* *pp*

♩ = 58
remove mouthpiece

146 *mf* *f*

(I) lip down *mf* *f*

(I)

147 *f* *fff* *fff*

lip down *fff* *fff*