

William Kleinsasser

$(\text{HO})_2\text{C}_6\text{H}_3 \cdot \text{CHOH} \cdot \text{CH}_2\text{NHCH}_3$  (Adrenaline)

for trombone quartet and computer

(2000)

Duration: c. 3.5 minutes

Composed for the trombone quartet of the Philadelphia Orchestra

Commissioned by Jack Schmidt, Delaware Valley College

## Program Note

$(\text{HO})_2\text{C}_6\text{H}_3 \cdot \text{CHOH} \cdot \text{CH}_2\text{NHCH}_3$  (Adrenaline)

This piece was composed in 2000 as the first of a set of works that engage the relationship between chemical compounds and the human experience. **Adrenaline** presents a dramatic sequence of psychological states associated with the experience of this commonly produced compound. The piece projects these psychological states in a fast-paced continuity that maintains an anxious state from beginning to end. The four trombones are treated virtuosically in both the technical requirements of the piece and the need to project a musical performance that carries the psychological influence of adrenalin on the musical experience.

The computer integration with this work acts as a transformative screen against which the trombone music is presented. The computer records the performance as it is happening and treats the performance audio as source material for pitch transposition and temporal development that is played back out in real-time. Examples of these processes include creating a filter bank that represents the formant structure of one musical excerpt and passing a second excerpt through the filter bank. The result is a spectral imprint of one musical idea on another. If the resultant audio file is repeatedly passed through the filter bank the original character of the second excerpt gradually disappears leaving only a ringing, resonant chord that echoes the first musical excerpt. Another example of audio transformation involves inter-cutting the audio files in smaller and smaller time segments or grains. The final result of this process is a new texture that is the result of sequentially mixed grains (granular resynthesis) from the recorded performance.

**Adrenaline** was commissioned by Jack Schmidt of Delaware Valley College and was written for the trombone quartet of the Philadelphia Orchestra.

## Instrumentation

**4 trombones** (can be slightly amplified if needed)

**computer music system** (detailed below)

## Computer music system requirements

G3 (or better) Macintosh computer running MAX/msp software (version 3.5.9 or later) (The software is available from the composer: [wkleinsasser@towson.edu](mailto:wkleinsasser@towson.edu))

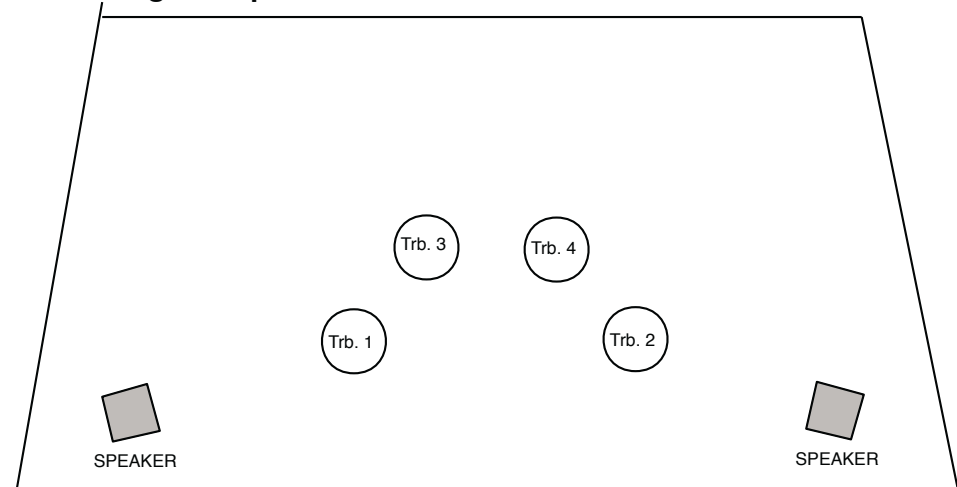
The computer requires input from two directional microphones that are placed equidistantly from all four trombones.

Audio mixer for computer output and microphones

Amplifier for two-channel audio or powered speakers

2 loudspeakers in stereo configuration  
(suggested placement diagrammed to right)

## Stage setup



The trombonists should be amplified to balance volume and presence with the computer music. Loudspeakers should be placed on stands approx. 6 feet high and placed so that feedback is minimized, but the performer can still hear the program. Due to the lack of precise timing cues, monitor speakers for the performers are not needed.

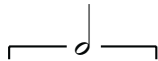
## Notational Information



All glisses begin immediately and last the entire duration of the initiating note



Indicates a fast, random gliss gesture. Something just beyond molto vibrato



Indicates that the unspecified duration is equivalent to the time of one half note. Different rhythmic values indicate associated time values



Play beamed, glissed note group as fast as possible



Indicates an semi-improvised ad libitum section where the figure within the brackets is repeatedly played with variations of timing and articulation for the duration indicated by the heavy extension line

In flight  
Impending panic  
False calm

These psychological-state markings for sections of the piece indicate the nature of the music to be projected — the musical quality — but should not be overt or overdone through dramatic performance by the players.

All grace-notes are to be played immediately prior to the beat (or subdivision) of their associated note

Following a fermata the tempo should return to the last consistent tempo which preceded the fermata unless otherwise indicated

While each of the four trombones are differently muted and trombone 1 is without mute, this does not indicate a desire for trombone 1 to be prominent. There should be a general, ensemble balance of volume and sonic intensity maintained throughout the piece.

The performance parts for each player include staves indicating the music of the other three performers so that ensemble precision and rehearsal can be simplified. The representation of the other parts is a reduction where all note-events are indicated but articulations, dynamics, and other markings are removed for clarity.

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(2000)

**4/4** *In flight*  
• = 104  
*senza sord.*

**3/4** **4/4** **3/4** **4/4**

**Trombone 1**  
*ff* *ff* 3

**Trombone 2**  
*cup mute* *ff*

**Trombone 3**  
*str. mute* *ff* *f* *ff*

**Trombone 4**  
(Bass Trombone)  
*harmon mute stem removed* *ff* 3 3

**Computer**  
Computer: 1 1 2 3 Computer: 2 4 5  
The computer records in the audio performance of the four trombones and generates a multi-octave transposed, time-distorted transformation that is played back in real time.

If a MIDI sustain pedal is used to begin the piece and advance the cues (see software documentation) then Trombone 3 controls the pedal in performance.



*Propelled*  
 Trb. 1  
 4  
 Trb. 2  
 4  
 Trb. 3  
 4  
 Trb. 4  
 4  
 10 11 12 13 14 15 16  
 Computer: 5  
 Computer

3/4 *Frozen* one breath 4/4 5/4 4/4 *a tempo* 3/8 (♩ = 104) 3/4

*Wildly!*  
*pp*  
*ff*  
*pp*  
*pp*  
*ff*  
*ff*  
*ff*  
*ff*







*Panic!* ca. 5 seconds

*Wildly!*  $\frac{4}{4}$   $\text{♩} = 120$

*Regaining poise*  $\frac{3}{4}$  *rall.* (all together) ( $\text{♩} = 20$ )

Trb. 1

Trb. 2

Trb. 3

Trb. 4

*Wildly!* *ff* *mp* *ff* *ff*

*Continue ad lib cresc.*

Computer: 7 29 Computer: 8 30 Computer: 9 31 32

Computer

**3** *Memory* **4**  
**4** ♩ = 66  
*Lontano*

Trb. 1

Trb. 2

Trb. 3

Trb. 4

Computer

33 34 35 36 37

The musical score is written for four tubas (Trb. 1-4) and a computer part. The time signature is 3/4, and the tempo is marked 'Lontano' with a quarter note equal to 66 beats per minute. The key signature has one flat (B-flat). The score includes various musical notations such as dynamics (pp), articulation (>), and phrasing slurs. Measure numbers 33 through 37 are indicated in boxes at the bottom of the tuba staves.

Trb. 1

Trb. 2

Trb. 3

Trb. 4

Computer

*rall.*

*mp*

*mp*

*mp*

*mp*

*mp*

*p*

*p*

*p*

*ff*

Frozen  
one breath

$\bullet = 72$

$\frac{5}{4}$

$\frac{2}{8}$  *a tempo*

$\bullet = 104$

Hold full value

Hold full value

Hold full value

38

39 Computer: 10

40

41

42

43 Computer: 11

44

**2** *Propelled*  
**4** *Slower*  
♩ = 88

*Faster*  
♩ = 96

**3**  
**4**

Trb. 1

Trb. 2

Trb. 3

Trb. 4

Computer: 12

45

46

47

Computer: 13

48

49

50

51

52

Computer

# **3** *False poise* **4** ♩ = 72

*accel.* ----- ♩ = 78 ----- ♩ = 80 ----- ♩ = 88 ----- ♩ = 120 -----

Trb. 1 *mp*

Trb. 2 *mp*

Trb. 3 *mp*

Trb. 4 *mp*

Computer: 14 [53] [54] [55] [56] [57] [58] [59]

Computer

Trb. 1

Trb. 2

Trb. 3

Trb. 4

Computer

*In flight*

*ff*

*ff*

*str. mute*

*ff*

*ff*

60 61 62 63 64 65 66

Computer: 15

Tempo markings:  $\bullet = 144$ ,  $\bullet = 104$

Time signatures:  $\frac{2}{4}$ ,  $\frac{3}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$

The musical score is written for four trumpets (Trb. 1-4) and a computer part. The key signature is one flat (B-flat). The tempo is marked as  $\bullet = 144$  and  $\bullet = 104$ . The time signatures are  $\frac{2}{4}$  and  $\frac{3}{4}$ . The dynamic markings are *ff* (fortissimo) and *str. mute* (string mute). The computer part is indicated by a box labeled "Computer: 15" with an arrow pointing to the bottom staff. The measures are numbered 60 through 66.

3/4 4/4 2/4 3/4

Trb. 1

Trb. 2

Trb. 3

Trb. 4

*with forward motion*

Computer: 16 67 68 69 70 71 72

Computer



2/4      3/4 *Propelled flight*      2/4      3/4      2/4

Trb. 1

Trb. 2

Trb. 3

Trb. 4

73      74      Computer: 17      75      76      77      78

Computer

2/4                      6/8                      2/4

Trb. 1

Trb. 2

Trb. 3

Trb. 4

Computer

79

Computer: 18

80

81

Computer: 19

82

*fp* *ff*

*Wildly!*

5 3 4 3 4 4



5/4 4/4 3/4 *Arrival*

Trb. 1 *ff* 4

Trb. 2 *ff* 5

Trb. 3 *Wildly! gliss*

Trb. 4 *Wildly! gliss*

89 Computer: 22 90 Computer: 23 91 92 24: END COMPUTER MUSIC 93

Computer

Computer music fades out. !  
Only trombones by last note