

TRAILING VORTICES

by

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(1986)

This work was commissioned by the Fromm Music Foundation and is dedicated to Paul Fromm.

Orchestral Distribution:

1 flute

1 oboe

1 clarinet(Bb)

1 bassoon

1 horn(F)

1 trumpet(C)

1 trombone

1 piano

1 percussion: glockenspiel(F3-C6); high, medium, and low tam-tams; very deep gong (C pitch, lowest C possible); 4 high to low tom-toms.

4 hard-soft marimba mallets (Saito-Yamaha);  
4 brass mallets; 2 timpani mallets (Goodman green ultra staccato); 2 medium drum sticks; 4 hard plastic mallets; 1 wire brush; 1 large gong mallet.

2 violins

1 viola

1 cello

1 contrabass (C-extension)

(transposing instruments are notated at written pitch.)

Duration: approximately 17 minutes.

Trailing Vortices are spiraling wind streams formed when air passes over an airfoil. These graceful spirals of air suggest diverse musical interpretation. At the beginning of this work they are represented by a descending intervallic contour, and in the finale by a rapidly accelerating intervallic contour that first ascends and then diverges. Through the work a variety of musical interpretations transforms the initial theme.

(N.B. - The work is based on the photographs of Trailing Vortices and other flow phenomena in Milton Van Dyke's "An Album of Fluid Motion.")

FL

OB

CL(B $\flat$ )

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAMS [HIGH MED LOW]

GONG (VERY DEEP)

TOM-TOMS

$\text{♩} = 72$  legato

*rit.*

*niente*

SLUR MARKINGS ARE NOTATED WITH EACH BEAMED NOTE-SET IN THE PARTS.

VN I

VN II

VLA

VC

CB

1/30/86  
L. L. L.

4  
♩ = 40

LAMINAR STREAMLINES PHASING

The score is for a piece titled "Laminar Streamlines Phasing" in 4/4 time with a tempo of ♩ = 40. It features the following parts:

- FL (Flute):** Melodic line with triplets and dynamic markings (pp, mp).
- OB (Oboe):** Melodic line with triplets and dynamic markings (pp, mp).
- CL (Clarinet in Bb):** Melodic line with triplets and dynamic markings (pp, mp).
- BSN (Bassoon):** Melodic line with triplets and dynamic markings (pp, mp).
- HN (Horn in F):** Melodic line with triplets and dynamic markings (pp, mp).
- TRP (Trumpet in C):** Melodic line with triplets and dynamic markings (pp, mp).
- TBN (Trombone):** Melodic line with triplets and dynamic markings (pp, mp).
- PNO (Piano):** Features a "CHROMATIC CLUSTER" and "ONE-NOTE TREMOLO" (play cluster w/palm). Includes performance instructions: "(SE: PRE SUSTAIN PEDAL) (UNA CORDA OFF)", "(SUSTAIN PEDAL)", and "8bassa".
- GLKSP (Glockenspiel):** Features "LET RING" instructions.
- TAM-TAMS (High, Med, Low):** Includes "GONG (VERY DEEP)" and "TOM-TOMS".
- VN (Violins I & II):** Melodic lines with triplets and dynamic markings (pp, mp).
- VLA (Viola):** Melodic line with triplets and dynamic markings (pp, mp).
- VC (Violoncello):** Melodic line with triplets and dynamic markings (pp, mp).
- CB (Cello):** Melodic line with triplets and dynamic markings (pp, mp).

Handwritten notes on the left side of the score include "SIMILE" and "HARD-SOFT MALLETS". The percussion part is numbered 12, 13, 14, and 15. The score concludes with "LET RING" instructions on the right side.

SYMMETRIC VORTICE. SPMIG  
FROM SUDDEN ATTACK/SHOCK

$\text{♩} = 60$

4

FL *pp subito e Legato*

OB *pp subito e Legato*

CL (B $\flat$ ) *pp subito e Legato*

BSN *pp subito e Legato*

HN(F) *pp subito e Legato*

TRP(C) *pp subito e Legato*

TBN *pp subito e Legato*

PNO *pp subito e Legato*  
(SEMPRE PEDAL)

GLKSP **4**  $\text{♩} = 60$  Legato

TAM-TAMS (HIGH MED LOW)  
GONG (VERY DEEP)  
TOM-TOMS

VN I *pp subito e Legato*

VN II *pp subito e Legato*

VLA *pp subito e Legato*

VC *pp subito e Legato*

CB *pp subito e Legato*



FL (p)

OB mf

CL (B<sup>b</sup>) pp

BSN pp

HN(F) pp

TRP(C) pp

TBN pp

PNO 15va mf

GLKSP mf

TAM-TAMS [HIGH MED. LOW] 101 102 104 105

GONG (VERY DEEP) mf

TOM-TOMS mf

VN I ARCO

VN II ARCO

VLA ARCO

VC ARCO

CB

FL

OB

CL(B<sup>b</sup>)

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAM (HIGH MED. LOW)

GONG (VERY DEEP)

TOM-TOMS

VN I

VN II

VLA

VC

CB

This musical score is for a full orchestra and percussion ensemble. It features the following instruments and parts:

- Woodwinds:** Flute (FL), Oboe (OB), Clarinet in B-flat (CL(B<sup>b</sup>)), Bassoon (BSN), Horn in F (HN(F)), Trumpet in C (TRP(C)), and Trombone (TBN).
- Brass:** Trumpet in C (TRP(C)) and Trombone (TBN).
- Strings:** Violin I (VN I), Violin II (VN II), Viola (VLA), Violoncello (VC), and Contrabass (CB).
- Piano:** Piano (PNO) with a bass line labeled "Bbassa" and measures 106, 107, 108, 109, and 110.
- Percussion:** Gluckspol (GLKSP), Tam-tam (HIGH, MED, LOW), Gong (VERY DEEP), and Tom-toms.

The score includes various musical notations such as dynamics (mf, mp, pp, pp<sup>3</sup>, pp<sup>5</sup>), articulation (accents), and performance instructions (Pizz. Str., Arco). The woodwinds and brass sections have complex rhythmic patterns, while the strings play a steady accompaniment. The percussion section provides a rhythmic foundation with various patterns.



FL niente

OB niente

CL(B<sup>b</sup>) niente

BSN niente

HN(F) niente

TRP(C) niente

TBN niente

PNO

GLKSP

TAM-TAMS (HIGH MED. LOW)

GONG (VERY DEEP)

TOM-TOMS

VN I niente

VN II niente

VLA niente

VC niente

CB niente

151 152 154 155 \*

SEMPRE PEDAL

LET RING

*pp* *ppp* *mp*

3 5 6 7 9 10

FL

OB

CL(B<sup>b</sup>)

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAMS

GONG

(VERY DEEP)

TOM-TOMS

BRASS MALLETS

166

167

168

169

170

**J=48** **Legato**

I

II

VLA

VC

CB

TRAILING VORTICES IN AN ASYMMETRIC ASCENT SPREADING IN PHASE

**Cresc.**

ATOMIZATION: A SHEET OF SOUND DISINTEGRATES INTO "DROPLETS."

The musical score is arranged in a standard orchestral format. The woodwind section (FL, OB, CL, BSN, HN, TRP, TBN) and brass section (PNO, GLKSP) play melodic lines with various articulations and dynamics. The string section (VN I & II, VLA, VC, CB) provides harmonic support. The percussion section (TAM-TAMS, GONG, TOM-TOMS) features rhythmic patterns. The score includes numerous dynamic markings such as *Cresc.*, *mf*, and *p*, and performance instructions like *simile* and *TRAILING VORTICES IN AN ASYMMETRIC ASCENT SPREADING IN PHASE*. The bottom section is marked **J=48 Legato** and includes the text **ATOMIZATION: A SHEET OF SOUND DISINTEGRATES INTO "DROPLETS."**



42

FL

OB

CL(B<sup>b</sup>)

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAMS  
GONG  
(VERY DEEP)

TOM-TOMS

I

II

VLA

VC

CB

The score consists of multiple staves for different instruments. The woodwind section includes Flute (FL), Oboe (OB), Clarinet in B-flat (CL(B<sup>b</sup>)), Bassoon (BSN), Horn in F (HN(F)), Trumpet in C (TRP(C)), and Trombone (TBN). The string section includes Violin I (I), Violin II (II), Viola (VLA), Violoncello (VC), and Contrabass (CB). The percussion section includes Piano (PNO), Glockenspiel (GLKSP), Tam-tams, Gong (Very Deep), and Tom-toms. The score is marked with a dynamic of **f** (forte) and includes a **mp subito** (mezzo-piano subito) instruction. Measure numbers 206, 207, 208, 209, and 210 are indicated below the piano and glockenspiel staves. The music features complex rhythmic patterns and frequent key signature changes.

**mp subito**

206

207

208

209

210

**f**

BRASS MALLETS



FL  
OB  
CL(B $\flat$ )  
BSN  
HN(F)  
TRP(C)  
TBN  
PNO  
GLKSP  
TAM-TAMS [HIGH MED LOW]  
GONG (VERY DEEP)  
TOM-TOMS  
I  
II  
VLA  
VC  
CB

51

FL

OB

CL(B<sup>b</sup>)

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAMS [HIGH MED LOW]

GONG (VERY DEEP)

TOM-TOMS

I

VN

II

VLA

VC

CB

*fp* 261

*pp* 263

*pp* 265

FL

OB

CL (B<sup>b</sup>)

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAMS (HIGH MED LOW)

GONG (VERY DEEP)

TOM-TOMS

VN I

VN II

VLA

VC

CB

4

**mf**

♩ = 84

286 ROCK 'N ROLL FLAM STICKS, BUTT-ENDS

287

288

289 LET RING

290



FL

OB

CL(B<sup>b</sup>)

BSN

HN(F)

TRP(C)

TBN

PNO

GLKSP

TAM-TAMS HIGH MED LOW

GONG (VERY DEEP)

TOM-TOMS

VN I

VN II

VLA

VC

CS

346 347 348 349 350

*p* *ppp* *mf*

FL  
OB  
CL(B<sup>b</sup>)  
BSN  
HN(F)  
TRP(C)  
TBN  
PNO  
GLKSP  
TAM-TAMS (HIGH MED LOW)  
GONG (VERY DEEP)  
TOM-TOMS  
VN I  
VN II  
V.LA  
VC  
CB