ENTERTAINMENT FOR THE SPACE AGE

"Amazing!" said a member of the capacity audience. "It's hypnotic," said another. "Especially magnificent was the sense of space — limitless, incomprehensively vast, and awe-inspiring in its implications," wrote Alfred Franken­stein in the San Francisco Chronicle.

They were talking about Vortex, a new kind of theater — theater without actors, script, or musicians — as presented at San Francisco's Morrison Planetarium.

The heart of Vortex is the dome, an entire 'sky' upon which can be projected patterns, colors, moving shapes of all kinds — and the acoustical system — forty high-fidelity loudspeakers which can direct sound at the audience from any point of the compass, or from all points at once, or can rotate around the audience in a kind of 'whirlpool' of sound. This latter effect is what gave Vortex its name.

Vortex was originated in 1957 by two San Franciscans, Henry Jacobs, a radio station executive and composer of "musique concrete" (music which is made by combining and arranging recorded sounds rather than playing directly on an instrument), and Jordan Belson, a well-known painter, designer, and film maker. They interested Mr. George Bunton, Director of the Morrison Planetarium, in their ideas, and in May, 1957, the first Vortex was presented as an experimental demonstration under the joint sponsorship of radio station KPFA and the California Academy of Sciences. It was an instant success. Such large crowds showed up that two performances had to be given, and the producers decided on the spot to schedule a series of performances the following fall. Since then Vortex has become an integral part of the Bay Area's entertainment and concert life.

All the music for Vortex consists in compositions arranged directly on magnetic tape by the 'engineer-composers', using either recorded natural sounds — water dripping, glasses tinkling, foghorns, etc. — or electronically produced 'beeps' and 'groans' in varying frequencies. Titles of these pieces often reflect their electronic origin — for instance: "Sonata for Loudspeaker", "Electronic Kabuki Mambo", or one called "Three-fifty Dash Two", described by its composer as "an experiment in middle and high frequency sounds designed for rotational playback".

Each composition is accompanied by visual effects projected on the dome by the elaborate planetarium lighting system and a battery of special Vortex projectors. These effects range from the small and humorous, as when a tiny planet and its moon do a 'dance' across the sky, to the grandiose spectacle of a whole sky filled with flashing patterns and colors.

The impact of Vortex on the average audience is extreme. The experience of being engulfed and overwhelmed by the patterns of sound and light seems to produce both awe and exhilaration. Laughter, applause, oh's and ah's are frequent during the performance. "It's like the roller coaster ride in Cinerama, only in the abstract," commented one spectator.

What is the future of Vortex? Interest and inquiries have come from musical figures and technicians all over the world. Plans are afoot for a Vortex performance in Japan, as well as performances in Europe and other cities in this country. A foundation, the Audio-Visual Research Foundation, has been established, with Vortex as its first project and a general goal of "expanding the creative vocabulary and techniques of the various audio-visual media." Jacobs, Belson and their associates in the Foundation are presently experimenting with an air-supported radome as a laboratory for new projection methods and sound-reproducing systems, with an eventual aim of building a special electronic theater and research center. Vortex may, in fact, turn out to be, as its founders claim, "the theater of the future."

NOTES BY JUNIUS ADAMS
The above diagram illustrates the speaker system employed in the Vortex performances at the Morrison Planetarium in San Francisco. The circular, domed auditorium is 60 feet in diameter and 40 feet in height from floor to apex. Each of the white circles represents one of the speaker stations (comprised of one bass and two treble speakers) arranged in a ring behind the dome. Two additional woofer speakers diametrically opposed complete the entire system of 38 speakers. A special remote control panel allows the sounds of the taped compositions to be rotated, channeled through any one or combination of speakers, or through all in concert. A subsidiary system of two speakers in the center of the theater, fed from a separate tape recorder, provides a contrasting area of sound.
HENRY JACOBS

Henry Jacobs' role in Vortex is two-fold: as a composer-engineer whose works have been included in the programs; and as the organizer of the Vortex project at its inception.

His background is varied: an M.A. in Sociology and Mass Communications; a publicist successful enough to draw some 10,000 people to the Morrison Planetarium to witness the Vortex experiments; a purveyor of Culture and Esoterica via his five years of weekly Ethnic Music broadcasts on Berkeley's long-haired non-commercial KPFA; as a humorist whose records have sold in the millions (but the royalties of which seem to defy this fact); as a television director in Mexico City whose programs reached the listener in Spanish(!); as an unsuccessful college instructor whose students mostly failed in life; as a psychiatric advisor with no medical degree; and, of course, as an unpublished poet.

About Vortex, Jacobs comments: "Unfortunately, the most significant and valid aspects of this project cannot be revealed in print. It is a kind of new sensory communication, which allows the receiver to create even more excitingly than the communicator — a rare, but stimulating opportunity in these days of the million dollar cliche on television, film and videocassette. Because it is admittedly non-intellectual, non-educational and non-referential, Vortex occasionally takes its audiences to areas hitherto unimaginable, and there is a purely accidental aesthetic experience, which is so overpowering that even memory is obliterated by the dominance... of that moment. Because of this, people cannot disregard Vortex: it does provoke. Irrespective of all else, this provocation in a cultural context of pre-fabricated dreams, pre-fabricated houses, and indeed pre-fabricated lives, is self-justifying and necessary."

For the past four and one-half years Mr. Longfellow has been employed by the Ampex Corporation of Redwood City, California, whose high-quality magnetic tape recorders make possible much of the work that has been done in electronic music. While at Ampex, where he has gathered considerable experience with magnetic techniques, Mr. Longfellow first became interested in electronic music through exposure to the work of Vladimir Ussachevsky and Otto Luening during a performance of one of their selections with the San Francisco Symphony Orchestra.

When the Vortex Sound Experiments were undertaken at San Francisco's Morrison Planetarium, Mr. Longfellow became even more attracted to the possibilities of electronically achieved modern composition expressed as a free-moving entity in space through the unique Vortex system.

Mr. Longfellow's musical background extends to his childhood, when he toured with USO troops during World War II as a musical performer and singer. He studied piano, organ, accordion and voice with private instructors and undertook a study of speech arts at the San Diego State College. He operated his own music school for several years at Newport Beach, California, and later went extensively into the nightclub entertainment field. He has made many television appearances, having formerly produced a weekly half-hour program for a Los Angeles television station. Following dramatic interests, Mr. Longfellow has acted with a number of little theatre groups, and in the San Francisco Bay Area has sung a variety of roles with a local light opera company.

In addition to attending elementary, junior and high school, Mr. Talcott's education includes almost two years as an electronic draftsman; three years of experience as theater electrician and extensive work in the audio field at Berkeley High School; and six years at radio station KPFA in Berkeley.

His primary interests are music, radio producing, and the design and construction of broadcast facilities.

Mr. Talcott is most active in piano playing, but his musical skills include the organ, harpsichord, the recorder and Flamenco guitar. His musical interests cover all periods, but he expresses a preference for contemporary, baroque and pre-baroque. He has worked with Harry Partch and his system of Monophony, and has constructed a Theremin for experimental use.

His interest in the field of Musique Concrete stems from experiments at station KPFA and association with Henry Jacobs, a fellow experimenter and producer of the program 'Ethnic Music'. Mr. Jacobs, Jordan Belson (of San Francisco) and Mr. Talcott were the devisors of and contributors to the first 'Vortex' program. His future works are planned to include material for Mill Valley dancer Ann Halprin.

Mr. Talcott says that, "The most fascinating thing to me, about Musique Concrete is that it is completely emotional in its importance. That is, in fact, almost its sole value. I am not in sympathy with over-scholarly enthusiasts of any field of art; neither am I sympathetic with anyone who is more interested in the methods, schools, or philosophy behind a piece of Musique Critique than in its emotional content or importance".

Loughborough began as a student of Electrical Engineering at M.I.T., then, after several years as an advanced radar specialist with the Navy in World War II, he returned to school for musical study with Dr. Collins in Chicago at the Conservatory. Upon moving with his wife Pamela, to the Bay Area, Loughborough worked with Harry Partch in the design and construction of Partchian microtonal instruments. In 1954 Loughborough designed and invented his popular commercial drum, the Boo Bam, and subsequently has created an impressive number of highly complex percussion instruments.

Loughborough performed with Chet Baker throughout the country as a featured polyrhythmic soloist on his own drums and tympani. Upon returning to the Bay Area, he organized the Musical Engineering Associates, whose functions are the construction of musical and electronic instruments, the publishing of musical documents and the organization of an Electronic Composer's Guild. He has recently completed the construction of an audio center equipped throughout with stereo facilities, test equipment, and probably the world's largest horn loudspeaker. (Mr. Loughborough has recently recorded a Bongo Drum Instruction for Folkways, FO8320.)
This is an agglomeration of three individual experiments evolved within a few weeks of each other. I felt that there was a certain amount of contrast provided by presenting the three sections in close proximity. The first part is based entirely on a single sound source fed into a highly reverberant channel with a high pass filter in the feedback loop. The reverberation is adjusted very finely to just below the saturation point, providing an especially long decay of the sound.

The second part is primarily a fixed texture of sound with slight changes of pitch and rhythm within the basic framework. This again makes use of the filtered reverberation channel, with the addition of combined long and short delay loops—provided by running tape from machine to machine across the room a distance of about six feet. (When properly adjusted this system can sustain a single transient sound for fifteen minutes or longer.) The slow reiteration can be heard in the background at intervals of about six seconds.

The third and final part is an elaborate (four tape machines running simultaneously were necessary in some stages), twenty-five track processing of a single set of sounds: a woman screaming. The sound is presented in canon form with the pitch range in seven different octaves and the duration altered proportionally.

This is really a kind of music which has been electronically treated by means of distortion, forward and reverse reverberation and editing. The source of the materials resulted from a taped mood improvisation by Santiago Herarra, flute; L. K. Dunham, guitar; and myself, and amplified Indian tabla. The haunting mood of this improvisation caused me to attempt a series of distortions of the original sounds, until I achieved a quality that took effective advantage of the Vortex playback.

Inventor Loughborough has recently constructed an exponential loudspeaker of unbelievable proportions. Its mouth is 12 feet in diameter! While this polyrhythmic study was designed for Vortex, its initial playback was unforgettable, on the Big Horn.

This was originally created from a rather extensive vocabulary of synthetic sounds as an accompanying sound track to an animated, abstract film entitled “Logos” by Jane Peal. The creative process of this track is one that I believe most fruitful for one who is experimenting with synthetic sound. That is, I began with a series of experimental “runs” of sound patterns, then, while viewing the film, organized these patterns into a serial complement for the image.

Of all my works, this polyrhythmic study is perhaps best suited to Vortex presentation. The movement of these rhythms in the space of the Planetarium creates rhythmic crosses quite comparable to the natural rhythmic crossing of African master-drummers. The original sounds were produced by amplified Haitian drums, Indian tabla, bells and vocal intonations.

In “Notes On the History of a World” Mr. Longfellow electronically exploits the piano in a three-part suite. Working directly on the strings of the instrument, he uses single and double reverberations, forward and reverse, and achieves percussive effects on an enormous scale. “In this work,” he states, “I have endeavored to create musically the cycle of cosmic beginning and ending.”

This evolved, as most of my experiments do, without any idea of preconceived concept of what will develop. In the early hours of the morning — when most of my work is done — the senses become dulled except for concentration on sounds. “Loop” is cut from half an hour of continuous recording in which I used my own voice almost exclusively, rambling from idea to idea while the tape machine monitored the procedure.

Despite the rather facetious title, this work, as Chan, begins with an extended improvisation, which was subsequently structured into a mood piece through careful editing and distortion. Electronic Kabuki Mambo was used, initially, as a score for the play, “The Orange Seller” by David Weston Hunter, then later presented at Vortex.

“Three Fifty Dash Two” owes its title to the recording equipment from which it was created. In this, Mr. Longfellow achieves a study in echoed rhythms, using for his original sounds a musical saw, electric mixer, pots and pans, automobile traffic and Cadillac engine in unique combinations.

Both of Gordon Longfellow’s works were introduced in performances of the Vortex Sound Experiments.
HIGHLIGHTS OF VORTEX

SIDE 1

Band 1 TRIOLOGY (David Talcott)
Band 2 CHAN (Henry Jacobs)
Band 3 FOR THE BIG HORN (Wm. Loughborough)
Band 4 LOGOS (Henry Jacobs)
Band 5 RHYTHM STUDY No. 8 (Henry Jacobs)
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HIGHLIGHTS OF VORTEX

SIDE 2
FSS 6301 B

Band 1 NOTES ON THE HISTORY OF A WORLD pt. 3
(Gordon Longfellow)

Band 2 LOOP No. 3 (David Talcott)

Band 3 ELECTRONIC KABUKI MAMBO
(Henry Jacobs)

Band 4 350-2 (Gordon Longfellow)

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