"Hungers"
Ed Emshwiller and Morton Subotnick (Los Angeles)

Joan La Barbara: Voice and air drums
Erica Duke: Electric cello
Amy Knoles: Electronic mallets
Gaylord Mowrey: Keyboard
Nanik Wenten: Dance
Robert Campbell: Video technical director and operator
Dale McBeath: Video computer software designer and operator
Fern Seiden: Video camera operator
Donna Matorin: Video camera operator
Greg Fish: Assistant to Morton Subotnick
Todd Winkler: Computer operator for music
Mark Coniglio: Computer software designer for music
John Nelson: Assistant to Morton Subotnick at M.I.T.
Aubrey Wilson: Lighting and stage designer
Bob Israel: Theatrical consultant
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Part 1: Famine/Feast

1. alone
2. "voices"
3. celebration

Part 2: Genesis

1. hand dance
2. floor dance
3. child and mother
4. lullaby
5. "I want"

Part 3: Famine/Feast

1. alone
2. celebration
3. combat dances

Epilogue

Hungers

Hungers is a collaborative production involving layers of live performance, acoustical and computer music, video and computer images. Ed Emshwiller created the images, Morton Subotnick the music. The theme is the internal, subjective "layer" of awareness where detail, memory, and immediate surroundings dominate consciousness. It is an orchestrated tapestry of images and music which express hungers (i.e. for food, security, acceptance, mother, sex, power). It is structured more in musical, choreographic, spatial and poetic terms than in

dramatic narrative terms. State of the art real-time sound and image processing systems expand and complement the performances by a singer, a dancer, and three musicians.

Part 1 (Famine/Feast)

ALONE (famine) features Joan La Barbara singing with an electronic accompaniment triggered by the air drums, and a close-up video version of a prerecorded vocal solo (without sound).
VOICES is a flowing musical quartet of live voice and three computer voices with a video tapestry of the vocalist in a new landscape.
CELEBRATION (feast) is a playful interplay between the musicians, the computer and video.

Part 2 (Genesis)

HAND DANCE. The dancer enters with only her hands illuminated. The video amplifies the movements.
FLOOR DANCE. The dancer moves on the floor and her image emerges on a projected video oval.
CHILD AND MOTHER. A series of images of woman and baby form a layered visual poem.
LULLABY. A trio for voice, cello and computer which overlaps the end of "Child and Mother" and the beginning of "I Want".
"I WANT." The images of eye and mouth alternative as the vocalist sings accompanied by her voice on the video tape.

Part 3 (Famine/Feast)

ALONE is now a shorter, more florid trio between the vocalist and two digital versions of her voice while images of her face move rapidly in space (amongst the monitors).
CELEBRATION is an extended and developed version of the original celebration which climaxes in "combat dances" which feature the dancer and video projections.

Epilogue

With the air drum, the vocalist plays a crashing sound which results in a long "frozen" note cluster, while the dancer creates living masks. As the cluster comes to life the musicians begin to play a dreamlike version of the celebration music which is joined later by a trio of voice, computer and cello performing an extensive elaboration of the original famine solo. Throughout this, enlarged images of a new hand dance are seen, accompanied by video images of lovers. The work ends with a video closeup of a vocal solo without sound.

Notes on the music technology

The music is scored for voice, two air drums*, Kat (a midi mallet instrument), Raad (an electric cello), Yamaha Clavinova (a digital piano), YCAMS **, Macintosh Plus computer and a Prophet sampler.

The Concept of the technology can be divided into two main functions, the performance technology and the instrumental sound technology.

Instrumental Sound Technology

Each instrument has its own sound. (In the case of the Clavinova, there is a built-in digital piano sound, in the case of the Kat, I have created a mallet sound using the Yamaha (TX-816.) The computer also has its own invented sound. And, in addition, each has several

transformed versions of the original sound. The original instrumental sounds emanate from where we see the instruments (stage center-rear) and the computer sounds come from the front left-right area of stage. The transformed versions of all these allow for dramatic and emotive changes to occur throughout the work through the quality or "orchestration" of the sound as well as from the music itself. It also allows for these instruments to, at times, become one another. For instance, early in the work, the vocalist plays her left air drum and a loud sound is heard which is, in fact, a transformed series of sounds starting with a cello pluck, moving through an fm sound, a cello bowed sound and ending with a vocal sound.

Performance Technology

The Macintosh Plus acts like a central brain or management device. All the performers as well as the YCAMS send the performance information (i.e. where they are in the score) to the Mac and, in turn, the Mac plays various parts of the computer system (YCAMS) as well as directing when and how each performer will be in control. At times it is even sending this information to the video so that the vocalist, for instance, can "play" the video monitors with her air drums.

Much of the preliminary work on both the performance software and the sound transformations were done while I was a composer-in-residence at the M.I.T. media lab in the fall of '86. Some of the finished sound transformations were actually produced there and then loaded into my sampler at home. The Macintosh Plus performance software was first worked out at M.I.T. and then, under my supervision, developed and written by Marc Coniglio at the California Institute of the Arts.
— M. S.

Notes on the video technology

Video images taken over a three year period plus animation made with an Amiga computer serve as the main visual materials. Many of these recordings were layered in the CalArts color studio using a Grass Valley switcher, telecine, rescan and roll-in video as well as live camera video. These, edited onto three performance videotapes, plus input from four video cameras are directed to different monitors and screens via a custom matrix switcher designed and built by Dale McBeath. The switcher is controlled from the keyboard of the Amiga computer. This enables any video source to be displayed on any combination of display devices. During the performance the appropriate images are called up and combined by the video technical director and displayed on the stage by the computer operator.
— E. E.

* The air drum is a new device which consists of two hand held batons or sticks which are capable of detecting six directions of motion and the general velocity of these motions. They, in turn, send the sensed information to the computer which then incorporates that information appropriately.

** YCAMS or Yamaha Computer Assisted Musical System is comprised of a QX-1, QX-5 (score performance devices or sequencers) and two TX-816s (FM sound generating devices).