The Constance J. Upchurch Studio for Electro-Acoustic Music

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ABSTRACT

The Upchurch Studio For Electro-Acoustic Music (USEM) was founded in January, 1986, from a funding generously donated by Fort Worth resident Constance J. Upchurch. From its inception the studio was viewed as a facility serving multiple purposes including support of creative, research, performance and educational activities.

USEM is located on the third floor of Ed Landreth Hall on the campus of Texas Christian University. TCU is a liberal arts institution of 7000 students which supports both undergraduate and graduate instruction. A temporary facility, the studio is self-contained in one room with an adjoining room serving as a computer assisted instruction laboratory. An additional room, in close proximity, serves as a storage area and as an equipment maintenance area.

2. USEM HARDWARE AND SOFTWARE

In its short existence, USEM has grown into a formidable facility capable of supporting the activities for which it was designed. A list of its available equipment and software includes:

1. A NeXT cube with a 660 MB internal HD and Digital Ears Soundworks running numerous applications including the NeXT Music and Sound Kits, Common Music, CARL’s CMusic, and Csound. Additionally, other research and educationally oriented programs include Bessie, EdSnd, Envelope Editor, Harmonic Beats, Helio, Hose Player, LPC, MidResolab, Mixbench, Monstroscope, NeXTChaos, Partialis, Pitch, Resolab, Scrubber, SlideFlute, SND, Sonogram, SoundEditor, SPASM, Spectro, TBone, Twowaves, WaveformEditor and Windowlab mostly from CCRMA at Stanford University or adaptations of programs from other studios.


3. Synthesizers including a Yamaha DX7S, Kurzweil K1000, Kurzweil K250 and Ensoniq EPS 16 Plus (with an external 100 MB hard drive for storage). Additional tone generators include the Yamaha TX81Z and E-MU Proteus 2 and 2XR as well as a Yamaha RX22 Rhythm machine.

4. Additional equipment includes 2 AKG D905 microphones, an ERT Multiverb effects unit, a 300 watt Crown amplifier, a Drawmer compressor/limiter/noise gate, two Furman PL Plus Power Conditioners, a Lexicon LXP15 effects unit, a Nakamichi MR-1 master mix cassette recorder, a Panasonic 3700 DAT recorder, a Studiomaster 16 x 16 2 mixing console, a Tascam 202MKII dual cassette recorder, TEAC 2- and 4-channel reel-to-reel recorders, Yamaha
NS10M studio speakers, and a Yamaha WX7 MIDI Wind Controller. For traveling purposes
the studio owns a separate unit with a 6 x 4 Audio-Technica mixer with high speed four-track
cassette recorder, a Carver 600 watt amplifier, a Korg 12-channel rackmount mixer and 2
Yamaha S3115HT speaker cabinets.

3. STUDIO USES: PAST AND FUTURE

The primary categories of envisioned studio use include 1) composition, 2) sound
synthesis, 3) spectral analysis of acoustic signals, 4) score analysis, 5) score notation, 6)
psychoacoustic testing, and 7) recording. This list is not necessarily in order of importance. As
soon as we are able to increase our staff, software development will also become a primary
concern.

The studio has been used primarily for creative, research and educational purposes.
Projects carried out in the studio include the composition of a work for tape and dancers by
studio director Gerald Gabel entitled IKASU, Assistant Jay Upchurch’s five movement work for
tape and video (video is still in project stages) entitled PENTARQUINE, compositional efforts by
students, research into physical and acoustic attributes of the voice and other instruments by
faculty and students, sound synthesis, and establishment of courses in electro-acoustic music
(undergraduate) and computer music (graduate).

Future activities include 1) moving the studio into a new building adjacent to Ed Landreth
Auditorium in which separate rooms will exist for audio recording, MIDI applications, Computer
Music; a computer assisted instruction laboratory, a recording studio and a video editing facility;
2) development of software for educational and research purposes including TeXTure, a
musical texture analysis program for the NeXT computer; 3) establishment of a link between
USEM and the Departments of Art and Radio/TV/Film for multimedia purposes; 4) continued
and increased use of the facility for compositional projects by TCU and visiting composers; 5)
additional support for research in acoustics (some in conjunction with TCU's Miller Speech and
Hearing Clinic and Music's Vocal Pedagogy Program); 6) increased use as a recording facility
for the release of CDs; and 7) increased support for performance using electronic and digital
means including the establishment of an electronic arts performance ensemble.