

Universal Audio
COOPER TIME CUBE
DUAL ACOUSTICAL DELAY LINE

MODEL
920-16

ELECTRONICS CHASSIS



Created specifically for recording studio and motion picture sound applications, the Cooper Time Cube provides TWO electronically independent delays of 16MS and 14MS in one compact, rugged system. Its excellent audio bandwidth, low distortion and 70 dB signal-to-noise make the Model 920-16 the best audio delay device available for the short delays required in professional recording.

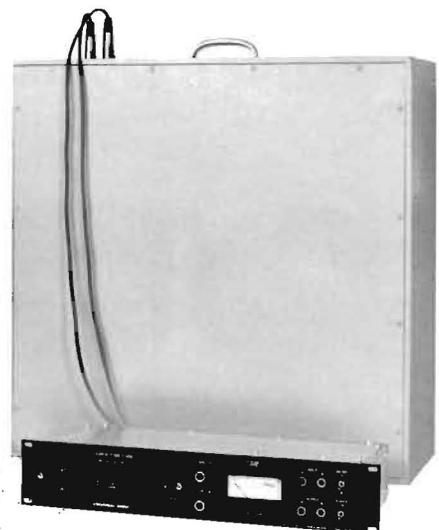
The Model 920-16 system utilizes original techniques developed by Dr. Duane H. Cooper of the University of Illinois and subsequent improvements by M. T. Putnam of UREI to bring complete respectability to the heretofore marginally feasible acoustical delay line.

The Cooper Time Cube system (illustrated at lower right) is comprised by: A rugged, grey-finished housing 24" X 24" X 9", which contains the two coiled acoustical delay lines and their respective transducers; a 3½" X 19" rack-mounting electronics chassis containing power supply, four UA 1109 card-type amplifiers, equalizing networks, meter and operating controls, and two standard 25' microphone extension cables with XLR-3 type connectors for interconnecting the chassis and the housing.

APPLICATIONS

- Creating "synthesized" Quadraphonic 4-channel tapes and records from 2-channel Stereo originals.
- Loudness Enhancement—the impression of increased intensity of a sound source without increased peak amplitudes.
- Spatial enhancement of Stereo or Quadraphonic recordings.
- Delaying "feed" to reverberation chambers or devices, to supply added dimension by delaying the first reflected sound before the onset of reverberation (the two Time Cube channels may be cascaded for 30MS delay for this purpose).
- Improving optical film recording by delaying audio to light valve or galvanometer, which prevents clipping of first transient peaks by the noise reduction system (Applicable to Westrex, RCA, Maurer or other film recording systems).

Electrical and physical specifications are listed on the reverse side.



COMPLETE SYSTEM



UNITED RECORDING ELECTRONICS INDUSTRIES

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MODEL
920-16

TECHNICAL SPECIFICATIONS

ELECTRICAL:

FREQUENCY RESPONSE:	±2dB 40Hz to 10kHz (typically ±1.5dB)
TOTAL HARMONIC DISTORTION:	Less than 1% (typically less than 0.5%) at all program VU levels up to +4dBm output. Distortion does not increase at low levels. (Because of HF preemphasis, distortion measurements should not be made at full output.)
SIGNAL-TO-NOISE RATIO:	Greater than 70dB (15.7kHz noise bandwidth)
INPUT SENSITIVITY:	-20 to +20dBm for +4dBm output
INPUT IMPEDANCE:	600 Z transformer isolated (floating)
OUTPUT IMPEDANCE:	Designed to work into 600 Z load; transformer isolated (floating)
NUMBER OF INPUTS:	Two
NUMBER OF OUTPUTS:	Two
CHANNEL SEPARATION:	Greater than 40dB
TIME DELAY:	Channel A: 16MS Channel B: 14MS
WOW & FLUTTER:	0%
MAINS VOLTAGE:	110-220 VAC, or 220-240 VAC (Switch on rear panel)
CONTROLS:	Input Gain (2) Output Meter Transfer Switch Power Off/On
EXTERNAL CONNECTIONS:	Line Cord Input Jacks (2) Tip-Ring-Sleeve (normalised to rear panel barrier strips) for permanent installations. Output Jacks (2) Tip-Ring-Sleeve (normalised to rear panel barrier strips) for permanent installations.

PHYSICAL:

ELECTRONICS CHASSIS:	Width 19" Height 3½" Depth behind panel 7" (for mounting in standard 19" RETMA rack) Finish: Panel, black anodized aluminum, white letters. Chassis, cadmium plated steel.
DELAY LINES HOUSING:	Width 24" Height 24" Depth 9" Finish: ½" plywood, grey zolatone with top handle.
INTERCONNECTORS:	Two 25' standard two-conductor shielded microphone cables with XLR-3 type connectors furnished for coupling between electronics chassis and delay line housing.
WEIGHT:	Electronics Chassis: 12 pounds Delay Lines Housing: 36 pounds
SHIPPING WEIGHT:	62 pounds (includes both units and cables)

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