

Contact:**Albert Ruttner**
(212) 697-3600**William E. Baker**
(212) 371-5800**DIGITAL TECHNOLOGY IN THE STUDIO**

The digital revolution is already underway, gradually changing recording techniques and adding a new measure to the public's enjoyment of recorded sound. To a large extent, the transition to digital from analog has been implemented in the recording of master tapes in studios around the world. With the introduction of Compact Disc, the benefits of digital technology are extended to include playback in the home, revealing for listeners a degree of realism that has been long sought but never before attained.

Conventional Analog Recording (Diagram 1)

In conventional analog recordings, as the musicians play, the sound signals are picked up by microphones (where they are converted to varying electrical energy) and transmitted to a mixing console and thence to a multi-channel tape recorder. At the console, the engineer regulates and controls the signals from individual instruments or groups of instruments to achieve the desired sound balance for live

presence and realism. These separate tracks, often as many as 16 or 32, later are mixed-down -- usually with further manipulation -- to obtain two tracks in left-and-right-channel stereo. The resulting "master tape" is then used to produce the wavy groove in the "master disc" on a lacquer-cutting machine and from this master many stampers are made.

Up to the tape mastering stage, digital technology is generally thought to provide only marginal improvements in the quality of the sound. In fact, many experts feel that in the recording, mixing and mastering stages digital technology has no discernable effect on sound quality.

The digital influence, however, becomes clearly evident during such further processing steps as copying, multitrack re-mixing and editing -- all of which take place long after the original recording session. At these steps, digital technology provides noticeable improvements in sound quality through complete elimination of noise, distortion, echo, wow and flutter. Digital technology also prevents progressive losses in succeeding sound generations when copying and re-mixing. When digital audio is employed in recording and processing, the sound quality attained in the resulting analog records then depends solely on the degree of sophistication in manufacture of the disc.

The First Step: Digital Recording and Processing (Diagram 2)

At the present state of the art in recording technology, digitalization for the production of Compact Disc has been implemented from the digital multi-channel recorder to the digital cutting machine with the only gaps at present being at the mixing consoles. This almost unbroken chain of digital apparatus is in regular use on the professional level. This, with the development of opto-digital recording machinery for the production of masters, paved the way for the CD system.

Tomorrow -- Complete Digitalization (Diagram 3)

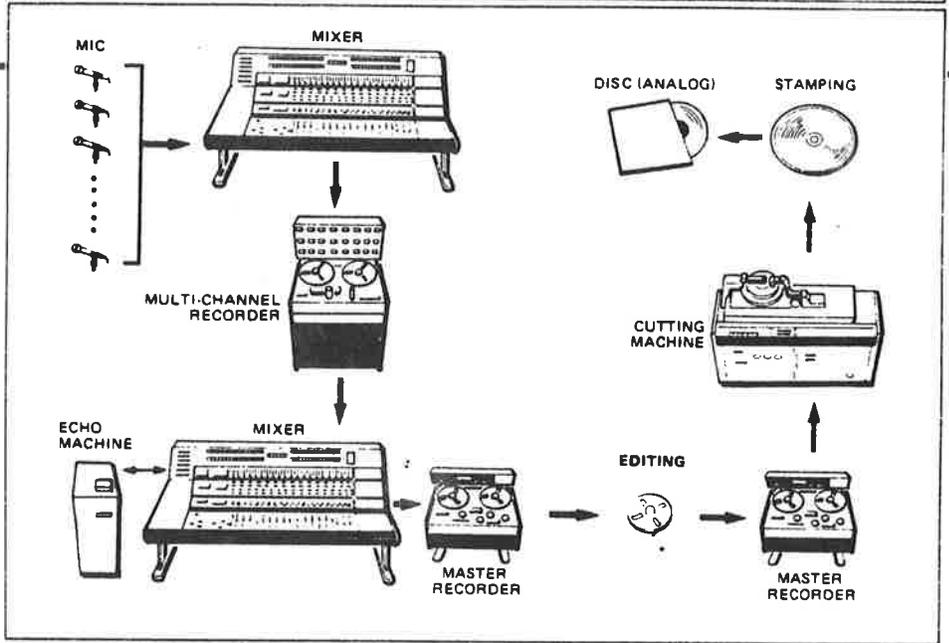
By 1986, it is expected that all stages in the recording and processing of the CD masters will have been digitalized. The only remaining analog stages will be the conversion of physical sound energy to electrical at the microphone and the reconversion of electrical to physical energy at the loudspeakers. As a result, the listener at home will hear an exact and unblemished duplicate of what the artists originally recorded at the studio -- just as if listener and musicians were in the same room.

One further benefit: Even existing analog recordings, long stored in the archives, can be processed digitally to deliver the clarity and realism of the original.

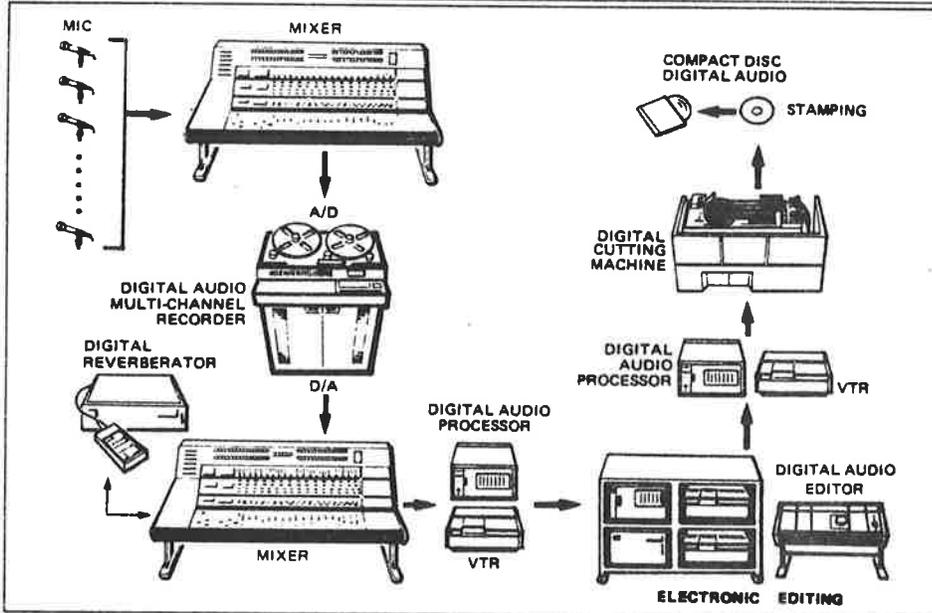
#

THE DEVELOPMENT
OF AUDIO RECORD
PRODUCTION SYSTEMS

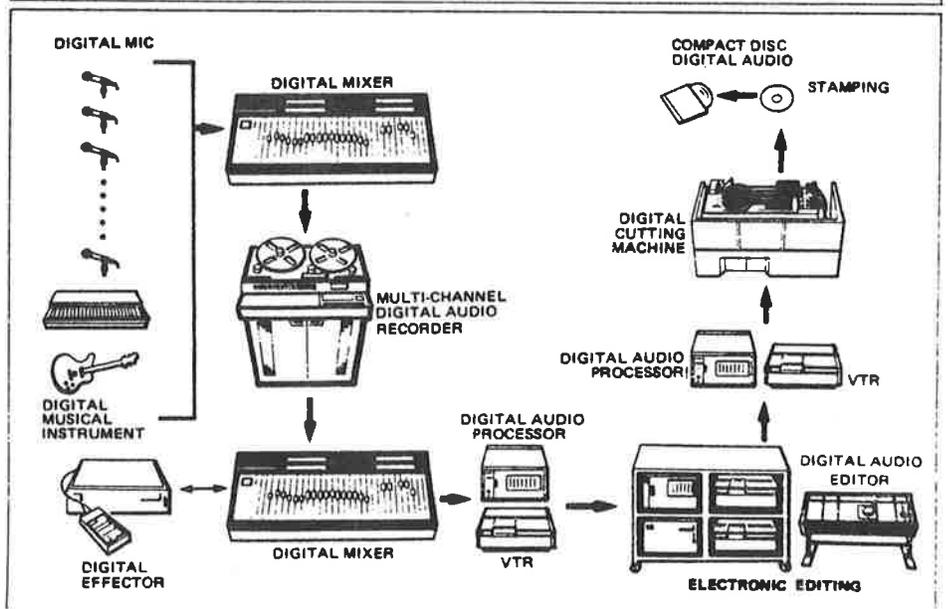
1. THE CONVENTIONAL ANALOG RECORD PRODUCTION SYSTEM



2. THE STATE-OF-THE-ART DIGITAL AUDIO EDITING AND RECORD PRODUCTION SYSTEM



3. THE SONY ALL-DIGITAL AUDIO RECORD PRODUCTION SYSTEM SCHEDULED TO BE AVAILABLE BY 1986



Contact:**Albert Ruttner**
(212) 697-3600**William E. Baker**
(212) 371-5800

NORTH AMERICAN PHILIPS CORPORATION

North American Philips Corporation, a multi-market manufacturing organization with more than 52,000 employees in the U.S. and abroad, had sales of \$2.7 billion in 1980, ranking it among the 150 largest industrial companies in the United States. (1980 sales do not reflect those of the TV set and components business acquired from GTE in January 1981.) North American Philips stock is traded principally on the New York Stock Exchange under the trading symbol NPH.

North American Philips concentrates its efforts in the fields of consumer products and services; electrical and electronic components; professional equipment and chemical products. Many North American Philips brand names are among the best known in their respective markets. A partial list includes Norelco electric razors and coffee makers, Magnavox, Sylvania and Philco consumer video and audio products, Genie garage door openers, Baker furniture, Selmer musical instruments, Ohmite resistors, Dialight indicators, Plumbicon TV camera tubes and Philips medical systems and electronic instruments.

Approximately 62% of the common stock of North American Philips Corporation is owned by Hartford National Bank and Trust Company as Trustee of the United States Philips Trust. Shareholders of Philips of The Netherlands are beneficiaries of The United States Philips Trust.

North American Philips places great value on its relationship with N.V. Philips, one of the largest industrial organizations in the world. The Netherlands firm is a supplier to North American Philips of many innovative products, and provides the Corporation with access to a worldwide research and development capability, as well as to advanced manufacturing and process know-how and technology.

#