

H. J. PAZ Page 10
R 2720

NINTH ANNUAL CONVENTION

PROGRAM

AUDIO

engineering society

OCTOBER 8-12, 1957

P10

NEW YORK TRADE SHOW BUILDING
EIGHTH AVENUE AT 35th STREET
NEW YORK, N. Y.



A TRANSISTORIZED PREAMPLIFIER FOR PROFESSIONAL TURNTABLES

HAROLD J. PAZ, Transistor Product Engineer, Radio Corporation of America, Camden, N. J.

This is a transistor preamplifier-equalizer for use with the RCA postage stamp pickup, and is designed to be mounted in an RCA professional turntable. The preamplifier can deliver an output level of -25 dbm to a 150 ohm balanced load. Equalization is provided for optimum response of the pickup between 30 to 15,000 cps. Inherent difficulties of hum, noise and microphonism in the vacuum tube type of preamplifier are negligible when an all transistor design is used. The long life of the transistor and the greater power efficiency of the circuit assure long life and low maintenance cost.



9:00 A.M.

Thursday, October 10, 1957

TAPE DUPLICATION

Chairman: Julius Konins, General Manager, Dubbings Sales Corp., Hewlett, N. Y.

COMMERCIAL DUPLICATION OF STEREO AND MONAURAL TAPES

RUSSELL J. TINKHAM, Ampex Corporation, Redwood City, Calif.

In use today are several types of tape duplicators for the production of commercial recorded tapes. All are copying types of machines using a faster than normal tape speed. A brief history of the development of duplicators in general, from 1944 to the present, will be given. Some of the problems in design and operation will be discussed.

PROBLEMS AND CONSIDERATIONS OF TAPE DUPLICATING PRODUCTION

JULIUS A. KONINS, General Manager, Dubbings Sales Corp., Hewlett, N. Y.

The market for prerecorded music tapes is briefly discussed along with some statements regarding the technical problems. Main considerations and factors involved in production duplicating are discussed in some detail.

AUDIO TRANSISTOR APPLICATIONS

Chairman: Frank Dukat, Engineering and Product Manager, Semi-Conductor Division, Raytheon Manufacturing Company, Newton, Mass.

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TRANSISTORIZED MAGNETIC AND PHOTOELECTRIC INPUT STAGES FOR SOUND MOTION PICTURE PROJECTORS

S. F. BUSHMAN, Bell & Howell, Chicago, Illinois

Playback of magnetically or photo-optically recorded sound tracks on motion picture film involves factors such as limited available signal power, and noise from various sources. Transistors may be used to advantage. Photo-transistors and other photo-electric detectors are discussed.

A PORTABLE TRANSISTOR MUSIC-SYSTEM

RICHARD S. BURWEN, Senior Circuit Design Engineer, Minneapolis-Honeywell, Boston Division

A 20-watt battery operated transistor amplifier that is entirely d-c coupled, and has 60 db of negative feedback, will be described and demonstrated. The amplifier, complete with batteries, is installed in a 2 cubic foot reverberant enclosure along with an efficient 15" woofer and a horn tweeter. This system is fed from a compact transistor remote control preamplifier, incorporating mixing and tone controls and equalization for the acoustic response of the speaker system. A demonstration will show the results of the equalization, acoustic treatment, and the excellent overload characteristics of the direct-coupled circuit.

1:00 P.M.

Thursday, October 10, 1957

MAGNETIC TAPE DEVICES

Chairman: Walter H. Erikson, Development Engineer, Radio Corporation of America, Camden, N. J.

A SURVEY OF FACTORS LIMITING THE PERFORMANCE OF MAGNETIC RECORDING SYSTEMS

ERIC D. DANIEL, Physicist, National Bureau of Standards, Washington, D. C.; P. E. AXON and W. T. FROST of the British Broadcasting Corporation, Research Department, London, England.

Various elements of a magnetic recording system, such as the heads, the tape and the tape transport mechanism, cause departures from the "ideal" performance of the system, due either to the physical properties of the materials of which they are composed or to the limitations of the accuracy to which they can be made. Some of the effects depend fundamentally only on signal frequency and others only on recorded wavelength. The paper examines the nature and magnitude of the various departures and discusses the improved properties required in the various elements if the ideal performance is to be more closely approached.

A CONTINUOUSLY VARIABLE TAPE DRIVE MECHANISM FOR THE INVESTIGATION OF SOUND PHENOMENA

JOHN J. HANSON, Pyramid Enterprises, Nashville, Tenn.

This unit is essentially for the professional recordist and those specializing in the scientific investigation of sound phenomena. The tape drive mechanism incorporates a number of new features but the one that offers a truly unique facility is that of a continuously variable speed control, which permits the positive setting of any tape speed from 3.75 inches to 8.50 inches per second while stationary or in operation. This feature allows recording and/or playback to be made where the supply voltage is below normal, permits accurate musical pitch to be obtained, or to slow down the tape for analytical purposes, for example, for strain gauge vibration recording both in the air and on the ground, on radar research work, in hospitals for heartbeat recording and associated phenomena, and by the film industry where the variable speed has found application for dubbing sound on to film.

An illustrated description of the drive and a demonstration of the tape recorder itself will be presented.