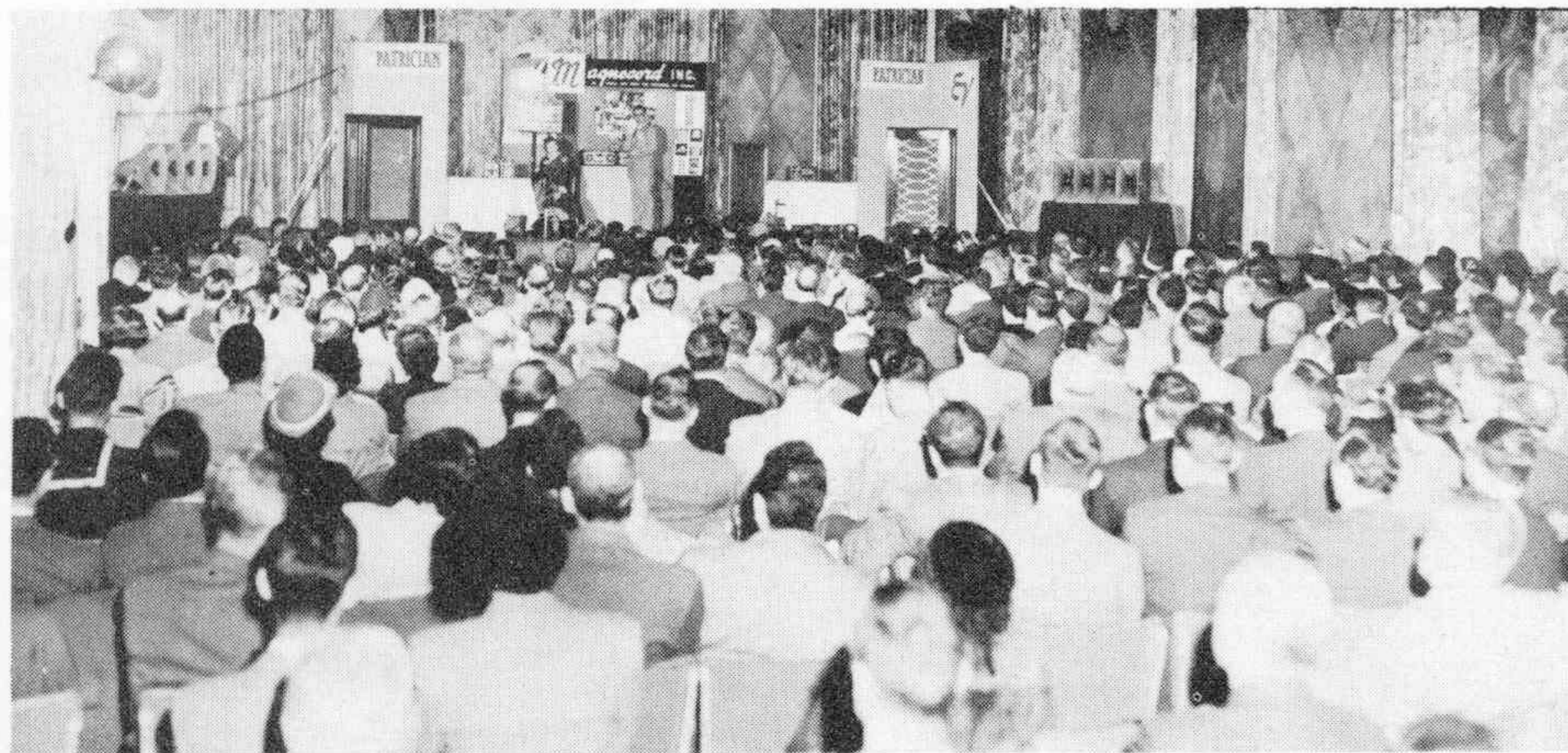


## Proof: Audio Fair Crowds Hear Binaural



From time to time these pages have been filled with glowing accounts of Magnecord's "draw" at Fairs and Shows. Here's the proof! The picture above shows a part of the crowd at one binaural demonstration in the Grand Ballroom of the Hotel New Yorker during the recent New York Audio Fair. That's "Speck" Barker, Magnecord's vice president in charge of sales, at the right on the rostrum.

## MaVoTape Releases Full-Track Tapes

Since the announcement of "Magnecordings" in the last issue, we have been deluged with requests for additional information and a complete listing of the selections available by Christmas.

"Magnecordings" are superb, ultra-wide range recordings of the world's great music by some of Europe's most outstanding artists and orchestras. They are made from the same master tapes from which Vox records are produced.

They were originally announced as 1/2-track only, but, because of demand, will also be made available for full-track heads. The Magnecordings are dubbed directly from 30-inches per second European masters, and the Magnecorders used in dubbing are of special construction to record full 50-15,000 frequency response at 7 1/2-inches per second tape speed.

The schedule of tape prices is based on length of the selection as follows:

Mins.	1/2-Track	Full
20-25	\$5.95	\$ 7.25
26-35	6.95	8.50
36-45	7.95	12.95
45-60	9.95	16.00

"Magnecordings" now available at your Magnecord distributor are: Shostakovich—Symphony #5, Vienna Symphony Orchestra, Jascha Horenstein, Cond.; Dvo-

rak—Symphony #5, Vienna State Philharmonia, Jascha Horenstein, Cond.; Berlioz—Harold in Italy, Vienna Symphony Orch., Rudolf Moralt, Cond.; Tchaikovsky—Piano Concerto #1 in B. Flat, Monique de la Bruchollerie-Piano, Vienna State Philharmonia, Rudolf Moralt, Cond.; Stamitz and Telemann—Concerti for Viola and Orchestra, H. Wigand-Viola; R. Reinhardt, Cond., Pro Musica Orchestra Stuttgart; Dvorak—Piano Concerto in G Minor, Opus 33, Vienna Symphony Orchestra, Friederich Wuhrer-Piano, Rudolf Moralt, Cond.; Mahler—Symphony #2, Vienna Symphony Orchestra, Otto Klemperer, Cond.; J. S. Bach—Tocata and Fugue in D Minor, Prelude and Fugue in D Major, Alleboeve, Anton Heiler, Organ; Vivaldi—Concerti Grossi 1 & 2—3 & 4, from "L'Estro Harmonicum", Pro Musica String Orchestra Stuttgart, R. Reinhardt, Cond.

## Fashions Briefly Noted

Magnecorders are versatile units! Every day in every way—as the saying goes—we find a new use or illustration of them, but the Milwaukee Journal of September 14 topped them all.

On a page illustrating the latest in men's fashions was a picture of a handsome lad with a pink shirt adjusting the gain on a PT6-JAH. The caption advised "Checks, Button Collar for Business." The Magnecorder, too, is good for business.

## Magnecord Announces Program of Expansion, Increased Capitalization

CHICAGO—Arrangements for \$300,000 additional capitalization have been completed by Magnecord, Incorporated, Chicago, manufacturer of professional magnetic tape recording equipment, with the American Research and Development Corporation, Boston, Massachusetts.

In announcing the increased capitalization, Armin P. Buetow, executive vice president of Magnecord, outlined a broad program of general expansion. Plans call for immediate extension of manufacturing facilities, production of newly-developed models and related equipment, and enlarging of the research and development program.

The loan is in the form of a 10-year debenture, and AR&D received certain conversion privileges for a minority interest in the corporation.

To extend its manufacturing facilities, Magnecord is planning to occupy a new plant built specifically for its needs and manufacturing methods. At present its engineering department is in a separate building from the manufacturing department and general offices.

The increased facilities will permit Magnecord to put into production new and advanced designs developed in Magnecord's extensive research and engineering department.

Among items scheduled for immediate production are a four-channel continuous Communications Network Monitoring system developed by Magnecord research engineers for the Civil Aeronautics Authority, and a single-case portable professional recording unit.

The American Research and Development Corporation, subject of a complete story in Fortune, November, 1952, is a unique financial group with over \$4 million invested in 17 major ventures, and lesser sums in four other companies. It is the first and only registered public-investment company specifically organized to help young business with wealth from insurance companies, investment trusts and other fiduciary organizations.

Magnecord was formed in 1946 by four men previously connected with the Armour Research Foundation of Illinois Institute of Technology in development of commercial magnetic recording. In the six years since its foundation, Magnecord's annual gross sales volume has grown from \$15,000 to about \$3 million. Its original 10-man operation has doubled and redoubled to a point where it now has 230 employees.

# Caterpillar Pioneers 'Management Communicator' With Magnecorders

The essential problem of daily contacting the 2,500-man management team of foremen, supervisors and executive departments on three shifts in five major divisions spread over 405 acres at the Caterpillar Tractor Company, Peoria, Illinois, was solved with Magnecorders. Technically, the system is known as the "Management Communicator."

The system was designed, installed, operated and maintained by the Illinois

the Communicator to get important information to supervisors first. Developments in negotiations, company offers, union demands, explanation of contract provisions, wage rates or policies all went out by means of the Magnecorder.

Other "ordinary" messages give the quarterly financial statement of the company, report building progress of new plants across the country, outline production schedules and figures, detail de-

can dial in a free moment on their own phones without leaving their areas. Also, each individual gets the news from the "boss."

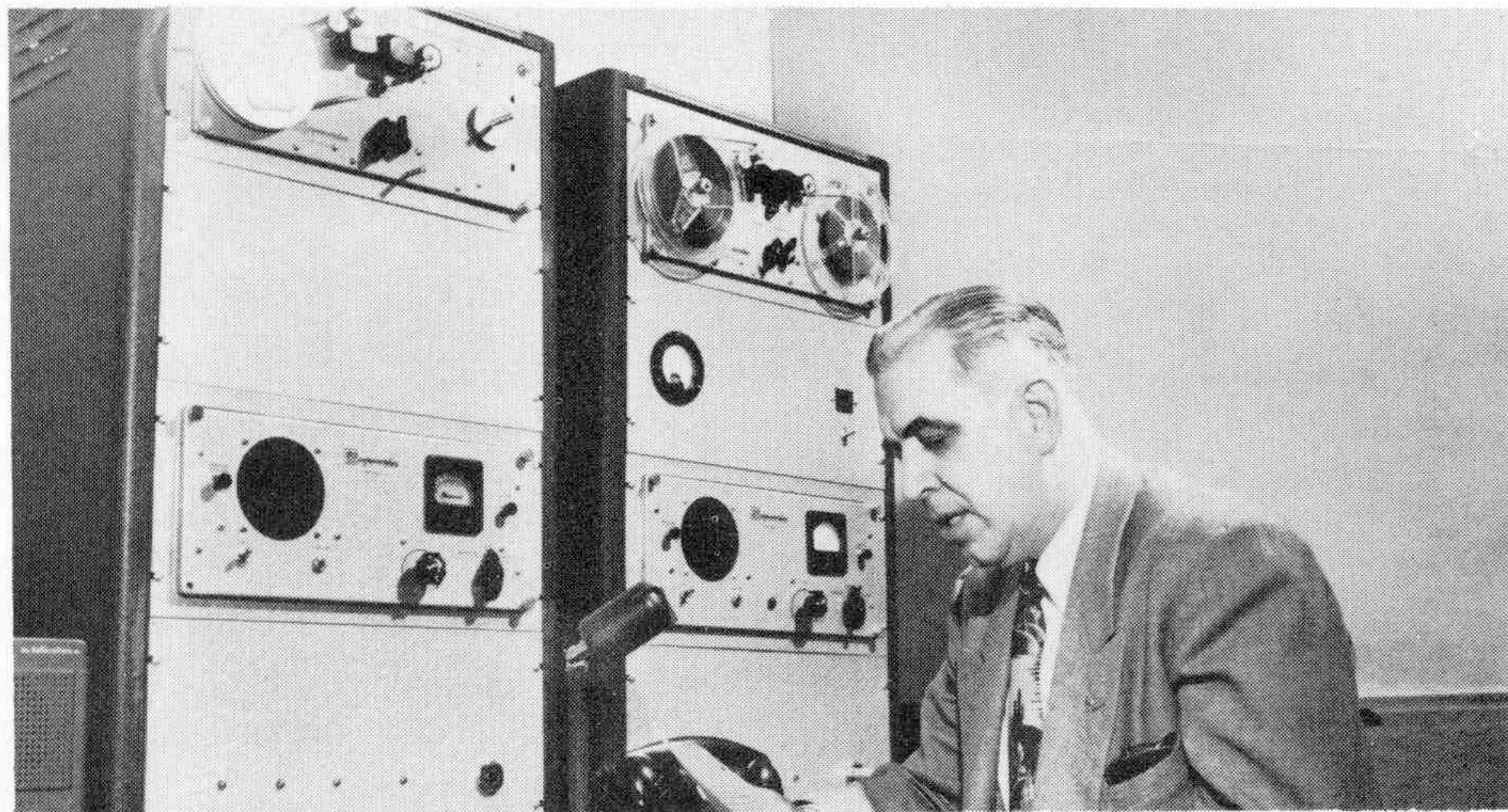
A recent study showed that almost 80% of the key personnel had listened to the message in the previous 22 hours, and 87% indicated that they would ask that the Communicator be put back in if it were ever discontinued. Only one percent of the Caterpillar supervisors expressed a dislike for the system, and three of every four used the information on the Communicator to answer queries of employees in his department.

The "Management Communicator" was essentially the idea of George Torrence. As labor relations director of Caterpillar, he was acutely aware of the need for a communications system. Word-of-mouth was inaccurate, meetings were time (and money) consuming, and written notices presented a distribution problem.

While trying to make a phone call during a telephone strike in 1946, he was connected to a recorded message explaining service problems and asking that he use the telephone only in emergency. The thought occurred that here was a method that could be adapted to Caterpillar's needs.

He contacted the Peoria office of Illinois Bell Telephone who in turn referred the matter to the central office in Chicago. Engineers John Rank and John Hoppisch began work on the problem. Their first solution was a wire recorder that had the inflexible time limit of one minute as well as the other disadvantages of wire.

In 1949, the Magnecorder was installed in place of the wire. Since then, the system has functioned to the complete satisfaction of Caterpillar and Bell people alike. Within the past year similar installations have been put in by Illinois Bell for Rinso Division of Lever Brothers, Inland Steel Company, and Corn Products of Argo, Illinois.



Lloyd J. Ely, assistant plant superintendent, records message for play on Caterpillar "Management Communicator."

Bell Telephone Company, and the Caterpillar company rents the equipment as special telephone service. The system consists of a PT6-JAH with an endless loop connected into the plant dial phone system.

Key personnel among the 26,000 Caterpillar employees dial "80" and are immediately and automatically connected to the recorder circuit. Thirty calls can be handled at a single time, and an average of 3,600 calls are recorded daily by a counting device which checks the number of calls. In the five years of its operation, the highest number of calls in a single day was 9,340.

The recorded message plays continuously from 11 a.m. to 9 a.m. the following day. It is shut down daily at 9 a.m. when a new message is prepared, recorded and placed on the unit. Messages are from one to three minutes long, with an average of about 90 seconds. A second PT6-JAH is used to record the bulletin and as a standby unit in case of emergency.

Day-in and day-out the Communicator provides a quick, inexpensive and easy medium for informing members of supervision about the many facets that make Caterpillar "tick." Ordinary messages tell of unusual sales, research developments, advertising and promotional plans or a special effort to get out an urgent order.

In periods of emergency, the Communicator is readily adaptable to spreading information rapidly. This was shown in a recent steel strike. Steel shortage forced a partial shut-down, but the exact extent of the shutdown was difficult to determine until the last minute. As the situation developed and became clear, instructions were passed to supervisors and foremen.

Progress of contract negotiations were another example of Caterpillar use of

sign changes in equipment, publicize plant promotions, and tell of large or interesting contracts received.

The Communicator is a direct method of informing supervisory personnel of company policy and spot news developments without excessive loss of executive time. It is easy to use, provides more complete information, prevents rumors, and provides undistorted communication. It takes a short time to record the message, and busy foremen and supervisors

## 'Red' Records Gains With Magnecorder



With first down and a program to go, "Red" Grange, all-time All American football player now turned sportscaster and football commentator, relies on his Magnecorder. "It's as important to me today as good blockers used to be."

"Red" tapes a major portion of his weekly 15-minute program which is carried by 113 stations. He leads off with an explanatory discussion of some phase of football, plays a recorded interview

with a "name" coach, and winds up with predictions of the week's games.

He uses his Magnecorder for the recorded interview. These are caught, after miles of driving, wherever a coach can be found. As often as not, it's under a football stand, or in a dressing room or equipment room. "Magnecorder's ruggedness, reliability and performance would please a perfectionist like Frank Leahy of Notre Dame," Grange reported.

# Communications Monitor System

CHICAGO—A four-channel, continuous magnetic recorder-reproducer system developed by Magnecord, Incorporated, Chicago, for the Civil Aeronautics Authority to CAA specifications was introduced December 3-4 in Washington, D.C.

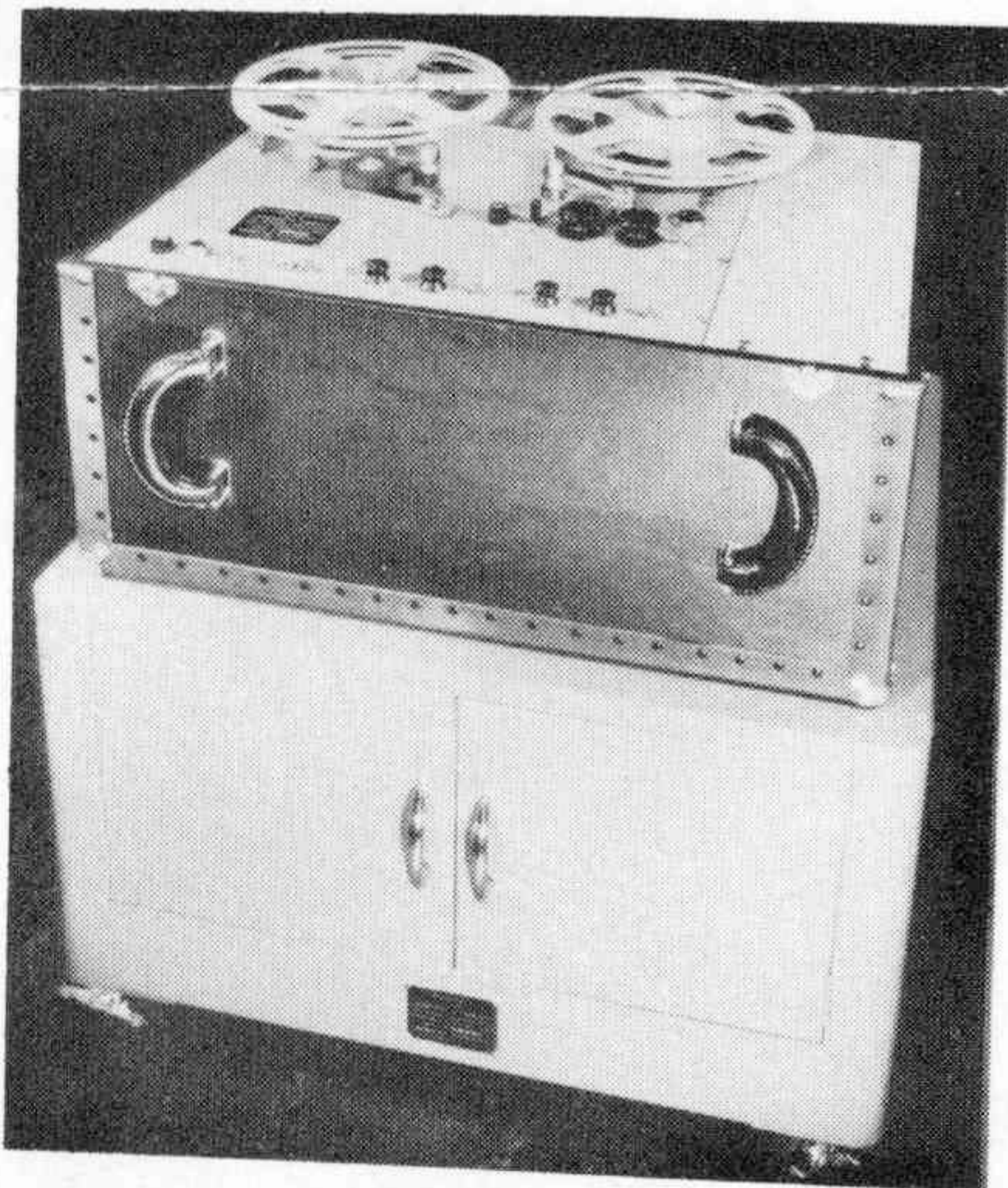
The Communications Network Monitoring system was shown before officials of civilian and military branches of the government as well as industrial leaders.

The system consists of an enclosed rack mounted recorder, separate playback unit, portable test equipment for adjusting components, and a portable continuous bulk eraser, and will operate continuously for eight hours.

The enclosed recording rack cabinet has a door in the rear for access to working parts with a mounted filter blower for cooling. Mounted in the rack are two tape transports, independently removable, while the other remains in operation. They also may be opened from the front. All electrical connections to the tape transports as well as the amplifier are by Cannon connectors or removable plugs.

Each tape transport contains a four-track recording head assembly and a movable monitor head which may be indexed to any of the four recording channels for monitoring purposes.

Automatic controls provide switching from one recorder to the other two minutes before the end of the tape. The first unit automatically shuts off at the end of the tape. In case of tape break, the second unit automatically starts, the first stops, and lights indicate tape breakage.



*Reproduce unit on mobile table*

Indicator lights are provided for "Ready," "Start," "Stop," and "Tape Break" conditionals. Provision is also made for remote operation through a switch located on the front panel of the tape transport.

The tape is driven from a hysteresis synchronous motor through a gear reducer, compliance coupling and heavy flywheel. Resultant flutter is less than 1%. Tape speed is 1 7/8 inches per second with a monitoring frequency response of from 300-2700 cycles per second, flat within  $\pm 3$  db, with distortion of less than 5% and a signal-to-noise ratio of better than 35 db.

Four individual plug-in recording amplifiers have individual power supplies and bias oscillators. Each amplifier contains both bias adjusting and audio level

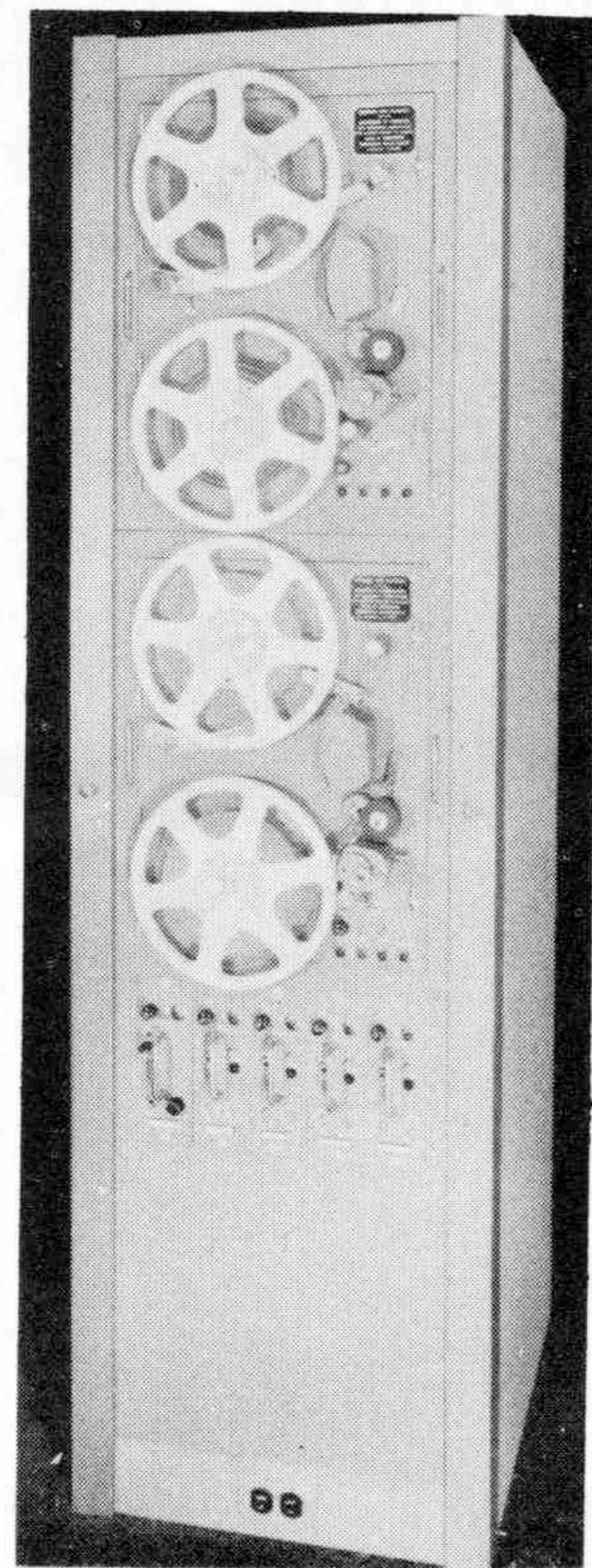
potentiometers. An additional single reproducing amplifier is provided for monitoring any one of the four track positions.

The multi-channel playback unit is a versatile four-track reproducer with provisions for manual or footswitch operation, and has both normal and high speed operation in either forward or rewind directions. It features an automatic tape lifter, head cover lifter, tape breaking switch and a stabilizer drum for smoothing out tape and reel irregularities.

The reproducer amplifier has simultaneous inputs for two channels which may be selected from any one of the four tape track positions. Individual gain controls are provided for each of the two input channels. The amplifier section is removable for convenient servicing. The carrying case has a high capacity air blower unit for extremely cool operation. The unit may be monitored by headphone or from recessed, built-in speaker.

Recording is on standard 1/4 inch magnetic recording tape.

The system also has a mobile storage table with individual wheel brakes. A double door compartment provides storage space. The portable bulk eraser is designed for constant operation and has a built-in blower system for keeping the large internal reactors cool.



*Multi-channel record unit*

## WHO USES MAGNECORDERS?

During the recent New York Audio Fair, we were asked, "Who uses your equipment?" The answer was "everybody," and then a stumbling, fumbling account of radio stations, schools, and industrial concerns. The truth of the matter is that we often don't know. Our equipment is sold to distributors who then sell to the public. Most often, we don't know to whom they sold the unit.

So, in reply to the gentleman who asked, and for the information of our own employees who are actually interested in where their work goes, we will list 25 purchasers each issue taken from the Warranty Cards returned within the last month.

International Harvester Co., Melrose Park, Ill.

Minnesota Farm Bureau, St. Paul, Minn.

Stromberg Carlson Co., Rochester, N.Y.

Auburn Drive-in Theatre, Auburn, Cal.

Antilles Consolidated School, San Juan, Puerto Rico

Grand Central Aircraft Co., Tucson, Ariz.

Yale University, New Haven, Conn.

National Geographic Society, Washington, D.C.

Indiana University, Bloomington, Ind.

Ringling Bros., Barnum & Bailey, Sarasota, Fla.

Universal-International Pictures, Hollywood, Cal.

Goodyear Tire & Rubber Co., Akron, Ohio

Eastman Kodak, Rochester, N.Y.

General Motors Corp., Kansas City, Kansas

Aluminum Corp. of America, Massena, N.Y.

Sun Oil Co., Dallas, Texas

Carr Central High School, Vicksburg, Miss.

Checker Cab Co., New Orleans, La.

Columbia Pictures Corp., Hollywood, Calif.

Johns Hopkins University, Silver Springs, Md.

American Osteopathic Society, Chicago, Ill.

Church of the Covenants, Chicago, Ill.

First Baptist Church, Albuquerque, N. Mex.

People Church, Truro, Nova Scotia, Canada

Church of the Nazarene, San Antonio, Texas.

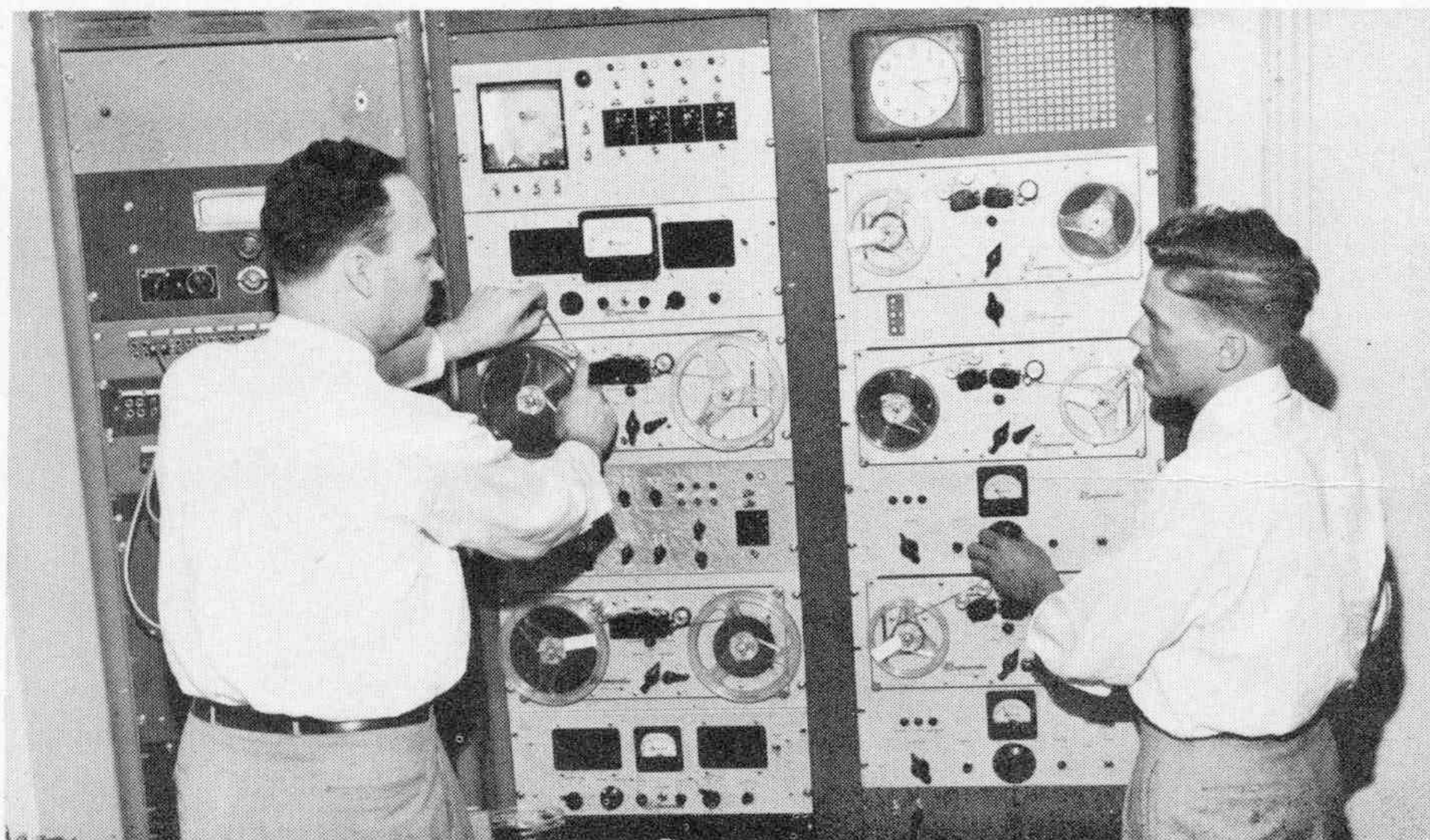
## Tape Traps Truman

It's the little things that influence people. This is particularly true in a national election. Often a single "flub" can offset countless flawlessly prepared and delivered major addresses. Station KGLO, Mason City, Iowa, can attest to this.

Chief Engineer Roger Sawyer and News Director Ken Kew were on hand with their Magnecorder to tape a "whistle-stop" talk of President Truman in the early morning Oct. 29 at nearby Manly, Iowa. In the course of his welcome to the trackside visitors, Truman said, "I certainly appreciate your getting up and coming down here at this time of day to look at the—the man who is running the campaign for President."

The rest of the two-minute speech, heard by a handful of the 2,000 persons gathered, passed unnoticed by the nation's press. The welcome didn't!

# Midnight Sun Network Cuts Costs With Unique Recording Services



Chief Engineer Lyle Thompson (left) threads Magnecorder while Engineer Lew Lathrop stands by in Keating studios.

The high cost of providing transcriptions in large volume to isolated stations has been solved by John Keating, Inc., a Seattle-Portland recording studio. Cost of materials has been reduced 85% and shipping charges have been cut in half.

The Midnight Sun Broadcasting Company, operating stations KFAR in Fairbanks and KENI in Anchorage, Alaska, was faced with the problem of economically rebroadcasting statewide network programs to its listeners.

Great distances, coupled with extreme weather conditions, made radio pick-up by the stations impossible. The alternative—making disc recordings of the network shows in the states and shipping them in by plane—was too expensive.

The Alaska company brought its problem to Keating—an organization with a background in program and commercial recording for radio stations and advertising agencies.

"We felt that the transcriptions could be made and shipped in by air economically in spite of high rates, if tape was used in making the recordings," Jack D. Ellison, Keating manager said.

"Air transportation was a costly necessity—it was the only way to get the programs to Alaska while they were still 'fresh.' But tape recordings would reduce these shipping costs since the reels of tape were lightweight and not easily damaged and required no special heavy packaging.

"In addition the tapes could be used over and over again, cutting down the cost of recording materials. This was important since Midnight Sun's eventual volume of recording would be great."

On this basis Midnight Sun began equipping its stations for the mass tape recording operation late in 1947 with Keating's Seattle studio as its stateside link.

The schedule called for initial operations to start in early 1948. However, difficulty in equipping all three locations to handle the operation made it necessary to start with existing conventional recording equipment on a limited basis.

"Even on a small scale, costs with discs were high, especially since the recordings

had to be specially packaged and bundled. Furthermore there was a continual outlay for new recording materials since the discs could not be erased and used again," Ellison said.

By spring of 1949, however, the tape recording program was in operation. Forty hours of programs a week were being recorded in Seattle and flown to Alaska.

The system worked so well that the number of network shows was increased. Today 67%—some 80 hours weekly—of Midnight Sun's programs are taped and sent in.

The increase was accomplished simply by adding more equipment at Seattle. No additional employees were required.

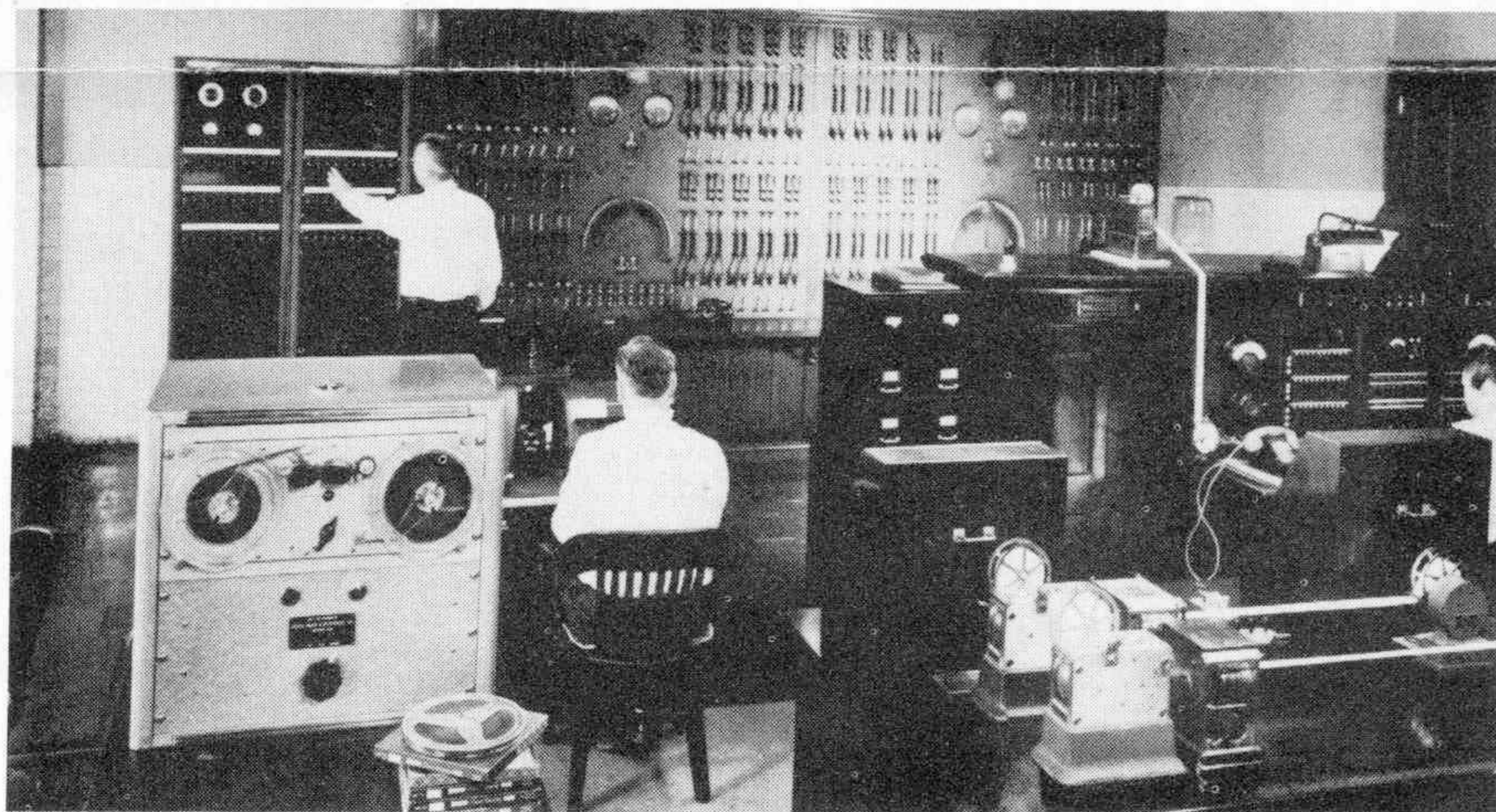
Keating's Seattle studio uses 6 Magnecord units in tape-recording the Alaska shows as well as for its other studio work. All recording is done on "Scotch" 111-A sound tape. Direct lines to the studio from NBC's KOMO, ABC's KJR and Mutual's KVI provide the network link.

Since the Magnecording program started, Keating-Midnight Sun has placed in operation some 1500 reels of sound tape.

When a tape has been used by one of the Midnight Sun stations, it is either forwarded to the sister station for rebroadcast, or sent immediately back to Seattle where a new recording is made on the same tape without further delay.

"Using conventional recording methods, at the present rate of 80 hours of recording a week, the two year cost of recording materials would have been more than \$25,000. Since installing our Magnecorders the job has only cost us \$4000—only 15% as much," Ellison said.

## New Haven Fire Department Records Calls



In June, 1951, Paul P. Heinz, Chief of the New Haven, Connecticut, Fire Department wrote an article for The American City Magazine on the use of Magnecord equipment. Since that time, Magnecorders have found increased usage in police and fire department work, and an article on a special Magnecord installation for the New York fire department is being prepared by FM/TV Communications.

While the New York City installation is a complex and specially designed installation, the New Haven has served as a model for cities throughout the country where it is important to record and check verbal information.

Chief Heinz wrote, "A record-keeping system for emergency fire calls—an automatic, foolproof system that costs less than \$20 a year—(not counting

initial installation) has been set up by the New Haven Fire Department. It records all incoming emergency fire calls, protecting the city and the fire department against complaints. The Magnecorder was installed in July, 1949 at a cost of less than \$500.

"The department records all incoming calls and files them for a period of a month. The tape is then put back into stock again for re-use. Normally, the department records four tapes a month at 7½" per second, with eight reels free for use. The oldest are used first.

"The operation is automatic. The Magnecorders are "On" constantly, and the recorder is set to start and stop automatically when a phone plug is engaged in the switchboard. It records all calls received on the "emergency fire number" listed in the phone directory.