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THE BROADCAST ENGINEERS' JOURNAL

Since 1934... Of, By, and For the Broadcast Engineer

Television at WOW—Omaha

MAY VOL. 13 No. 5 1946

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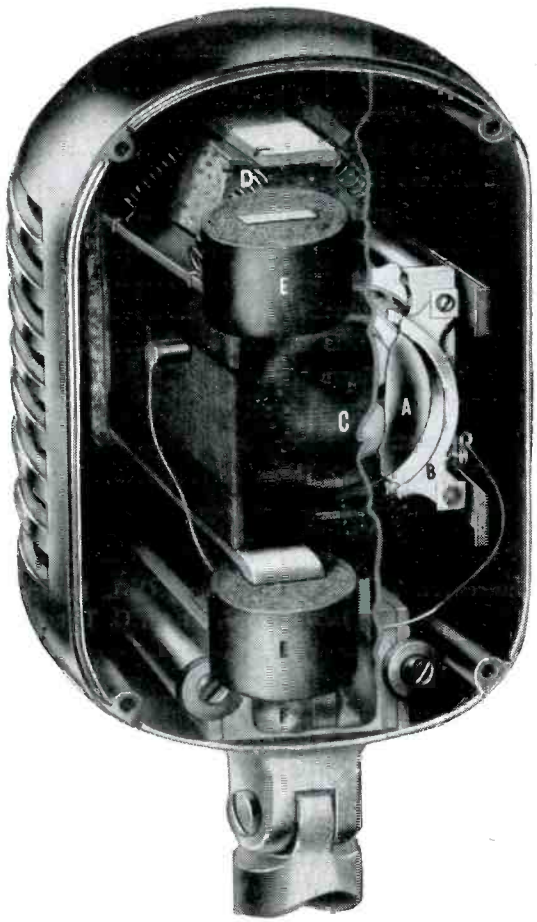

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THE BROADCAST ENGINEERS' JOURNAL

Ed. Stolzenberger — Editor

Volume 13, No. 5 May, 1946

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NATIONAL N.A.B.E.T. OFFICE
Room 501, 66 Court Street, Brooklyn 2, N. Y.
A. T. Powley, President

NABET ACTIVITY

NEWS BULLETIN

April 7, 1946

On March 29th the NLRB conducted an election at WBZ and WBZA in which the engineers voted unanimously for NABET. Although these men had all previously applied for membership in NABET, the company demanded that the NLRB conduct an election. The NLRB is also holding an election at KDKA April 11th.

A new NABET contract has been signed with WOL, Mutual outlet in Washington. This station was formerly ACA and was the lowest paid station in Washington. Management was very reluctant to increase the wages, notwithstanding the fact that they are the best money-making station in Washington. We finally served a thirty day strike notice and exerted pressure in the right places, thereby obtaining a reasonable wage scale.

I have just returned from Rochester after completing negotiations for a new contract with WHEC.

The NLRB has finally caught up to Mr. Brown, owner of WSAY, Rochester, and has filed an 8 (1), (3) and (5) against him. This is the station where the owner, Mr. Brown, refused to bargain with NABET, and after a thirty day strike notice had been filed and the men walked off the job, Mr. Brown locked the men out after receiving a Board order increasing the men's wages. This case is up for hearing on April 9th and will be conducted by the National Office of the NLRB.

We are still negotiating with NBC and ABC for the Traffic and Communications people and expect to conclude negotiations this month.

Mr. Hiller has started negotiations for the Springfield Group at WSPR.

Mr. LaCroix, our Vice-President, has asked me to come out to Hollywood on NABET business pertaining to organization. I plan to make this trip some time during May and in order to visit other chapters will return by way of San Francisco, Denver, Omaha, Chicago, Detroit and Cleveland. Will contact these chapters further regarding definite plans for this trip.

A. T. Powley, President.

Washington Office Report for the Month of March, 1946

During the month of March, the NLRB certified NABET as the bargaining agent for the engineers of Station WLEE in Richmond, Virginia.

After many days of negotiation, the management at Station WOL in Washington, D. C., finally agreed to NABET contract terms. The settlement was affected in the office of the United States Department of Labor on March 19th, one day before the expiration of a strike notice. The contract, effective March 1, 1946, carries an eight-hour day, two weeks' vacation, six holidays, elimination of call back, union security embodied in a seniority clause, and a union shop and increase of Fifteen ($15.00) Dollars per week, retroactive to the effective date of the contract.

Two trips were made to Philadelphia, in connection with NLRB certification of Stations WPTZ, WFIL and KYW.

A trip was made to Pittsburgh, where the National Representative was successful in having the officials of Westinghouse Radio Stations, Inc., agree to the holding of a consent election instead of carrying the KDKA certification to a costly and long, drawn out hearing before the NLRB. The voting is to take place April 11, 1946.

In addition to the above, the National Representative has been busy with Federal Communications Commission conferences regarding the repeal of Order No. 91-C; the reconstruction of F.C.C. questionnaires, with a view to securing better data on technicians' salaries in the Broadcast Industry; conferences with the NLRB National Office in attempts to speed up the action of the Philadelphia Regional Board in connection with the Philadelphia Stations WPTZ, WFIL and KYW. Mr. Smythe, of the F.C.C., reported that the Committee appointed to investigate order No. 91-C, has unanimously recommended that it be repealed.

During the month the National Representative made four trips

(Continued on Page Eighteen)

National Association of Broadcast Engineers and Technicians

The only Union that is 100% Of, By and For the BROADCAST ENGINEER

Attention Broadcast Engineers!

- NABET is a dignified union *worthy* of your support.
- NABET is an *effective* union, Of, By, and For the Broadcast Engineer *exclusively*, operated upon and dedicated to the principle that every member has a *right* to know what is going on in the union's "front office."
- NABET is controlled by its *members;* they have the right to vote on all matters of union policy. As a NABET member, you would have the *right* to Okay any actions which your President might take.

Contact any of the following officers for further information

A. T. Powley, President
66 Court Street, Room 501
Brooklyn 2, N. Y.

Thor C. La Croix
Vice President
6000 Sunset Boulevard
Hollywood 28, Calif.

C. A. Allen
National Representative
1240 N. Utah
Arlington, Va.

Harry C. Hiller
Nat'l Sec'y-Treasurer
66 Court Street, Room 501
Brooklyn 2, N. Y.

Harry Boone
3804 Penhurst Ave.
Baltimore 15, Md.

Harold V. Brandt
P. O. Box 68
Brecksville, Ohio

A. J. Doran
13254 Pinehurst Ave.
Detroit 4, Mich.

Roy Glanton
5500 Kansas Ave.
Omaha 12, Neb.

Frank Schnepper
3508 W. 97th Street
Evergreen Park, Ill.

Charles Thropp
141-41 72nd Avenue
Flushing, N. Y.

George Anderson
939 S. Gilpin St.
Denver 9, Colo.

Mark Dunnigan
5920 Laird Ave.
Oakland 3, Calif.

Reid R. Davis
18 Squirrel Hill Rd.
Roslyn Heights, N. Y.

J. Willard Dean
217 E. North St.
Raleigh, N. C.

Don Morey, Apt. 26-A
3 Circle Lane
Albany 3, N. Y.

Charles Snyder
106 Pembroke St.
Rochester 7, N. Y.

Dorson A. Ullman
2331 Cathedral Avenue
Washington 8, D. C.

Charles L. Bennis, Apt. DA-2
117-14 Union Tpke
Kew Gardens 15, N. Y.

Lateral Disc Recording

By Beverly F. Fredendall

Formerly Transmission Engineer, NBC—Chicago

(By popular request, this article has been brought up-to-date and reprinted from our September 1941 issue.—Ed.)

PART I — THEORY

SOUND recording began about the year 1877 but, only since the introduction of the instantaneous playback lacquer coated disc, has there been a wide-spread demand for knowledge of the recording process. Although there are two general methods of disc recording (vertical cut and lateral cut) only the latter will be described since it is more widely used. This text outlines briefly the general theory of recording and, more specifically, the steps required to place a system into standard operation or to check the performance of an existing installation.

It is necessary to understand the basic theory of lateral recording before outlining in detail the various steps required to put that theory into practice. Accordingly this text is divided into two parts: I, Theory, and II, Practice. Under Theory the subject is discussed according to the natural classifications of electrical, mechanical, electro-mechanical, and equalization; under Practice a description of the electrical and optical tests used in determining the required recording characteristic is given. Emphasis is placed upon the need for clear differentiation in considering voltage, current, power, mechanical amplitude, and optical width while performing the necessary steps in lining up a recording system.

GENERAL

There are two general methods of lateral recording: namely, embossing and engraving.

In the method of embossing, the inclined recording stylus, or needle, presses with continuous uniform force against the surface of the record, depressing and permanently deforming its surface without puncturing it. The resultant groove is an indentation of the record material which the playback needle must follow. In engraving, the recording needle, set almost at right angles to the record surface, cuts a chip or thread from the soft material, just as a machinist's lathe cuts a chip from the work revolving under the cutting tool.

Record materials vary considerably but fall into three broad classifications, namely, wax, lacquer, and film. Wax is the softest of the three and was originally used for making "processed" records.

The term "lacquer" is used here to designate all those mixtures, applied to a structural base, having about the same degree of density or firmness. Manufacturing formulas are a secret but usually contain cellulose-nitrate as a basic ingredient plus resins, oils, lacquers, glycerine, paint products, and some volitile solvent. The much used term "acetate" is not correct since most of the manufacturers supplying "acetate" records do not use a cellulose-acetate base. The mixture is applied on a supporting base of either aluminum, glass, or cardboard.

Film is frequently used for embossed lateral recording in the form of a continuous belt. A sufficient amount of film may be loaded into a long time recorder so that a 24 hour recording may be placed on one loop of film. So far it is mainly used for such recording service as plane to ground communication, where intelligence rather than quality is of primary importance, but it may be used for quality reproduction by increasing the speed of film travel. The film used in the above process should not be confused with a mechanical-optical film recorder which will be mentioned here for completeness only. It employs a long narrow film coated on one side with a thin layer of opaque material which passes under the cutting needle. When vertical modulation is placed on a "V" shaped needle the latter cuts through the opaque surface revealing the transparent base material and leaving a variable area optical sound track as well as a vertical mechanical sound track. The optical pattern is used in reproduction by passing the film in front of a photo-electric cell.

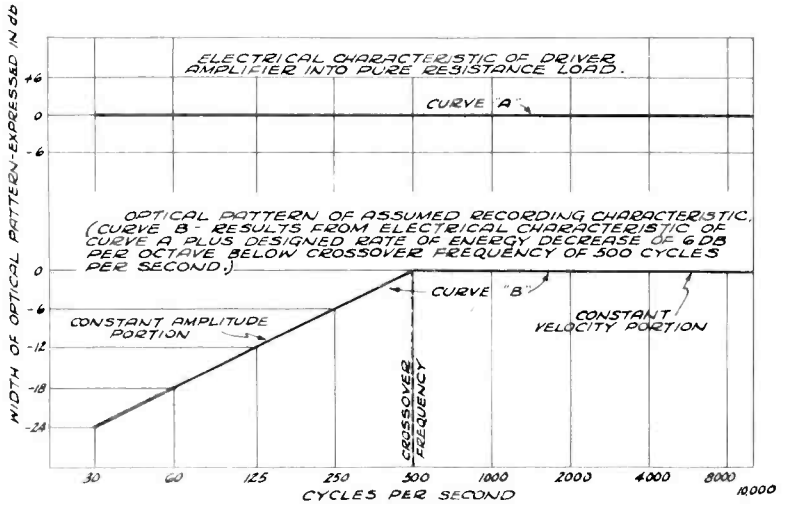


Fig. 1.

ELECTRICAL

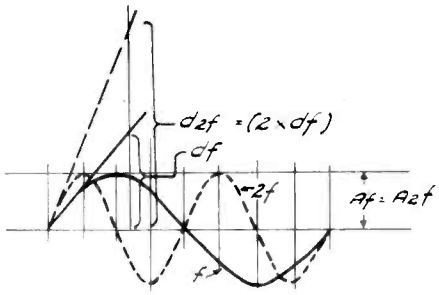
The fidelity of the electrical circuits should be approximately equal to the standards of other broadcast amplifying equipment that is, flat within one db in the frequency band required. In present day recording this may be taken as extending from 30 to 10,000 cycles per second. In taking measurements of the electrical amplifying equipment proper, nominal input and output terminations should be maintained. In the case of the final power amplifier whose output impedance is, for example, 15 ohms, this means that the temporary load for this amplifier should be a 15 ohm pure resistance termination for this part of the electrical test. See Curve A, Fig. 1.

MECHANICAL

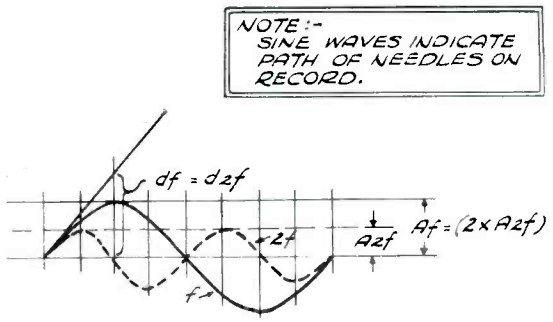
The most interesting and fundamental part of recording—its mechanics—is the part where the greatest confusion exists with regard to standards and to the underlying factors involved in the determination of those standards.

A — Constant Amplitude

An understanding of the terms "constant amplitude" and "constant velocity" as applied to a modulated groove is essential. Fig. 2 shows two frequencies of *constant amplitude* whose frequency



CONSTANT AMPLITUDE
(VARIABLE VELOCITY & SLOPE)
Fig. 2.



CONSTANT VELOCITY
(VARIABLE AMPLITUDE)
Fig. 3.

difference is one octave, i. e., one is twice the frequency of the other. It is important to note that for constant amplitude recording the maximum slope of the wave is proportional to frequency. Thus the distance d2f which is proportional to the slope of the higher frequency, is exactly twice the value of df of the lower frequency. Similarly, for still higher frequencies, the slope is proportionately greater. Lateral velocity of the recording stylus and slope of resultant groove are related—one is the cause and the other the effect. The maximum lateral velocity of a cutting needle is attained as it crosses the center of the groove, i. e., at the zero axis, and at this point the slope is obviously greatest. It is useful to note that a constant amplitude characteristic is essentially that of a crystal type cutter and playback head.

B — Constant Velocity

Fig. 3 shows two frequencies of *constant velocity* or slope whose frequency difference is one octave. In constant velocity recording the slope of the wave at the zero axis is constant for constant power output, i. e., for a "flat" condition, and the amplitude of the wave is inversely proportional to frequency. Thus, the height A2f of the higher frequency is just half the height Af of the lower frequency, but it should be noted especially that the slope at the zero axis is the same. Similarly for higher frequencies, the amplitude is proportionately less for the same power output. It is also useful to note that the constant velocity characteristic is essentially that of the electromagnetic cutter and playback head.

In order to understand some further mechanical considerations, consider a perfectly efficient, magnetic type, electromechanical transducer, otherwise known as a cutterhead, which would engrave all frequencies without loss. Such a "constant velocity" head would oscillate with large amplitude at low frequencies and small amplitude at high frequencies. A 5,000 cps wave would have twice the amplitude of a 10,000 cps wave. In a band from 30 to 10,000 cycles per second there are 8¼ octaves and thus, for a given amplitude at 10,000 cycles, the amplitude at 30 cycles would be $2^{8\frac{1}{4}}$, or 320 times greater. Current practice allows approximately 0.0016 inch amplitude modulation at 500 cycles per second. If the perfectly efficient magnetic cutter were used there would be 0.00008 inch amplitude at 10,000 cps, 0.0016 inch at 500 cps, and 0.025 inch at 30 cycles. Allowing 0.005 inch groove width, as in current practice, and modulation space on either side of the groove equal to expected peak amplitude at 30 cps, there would be 0.005 inch groove plus 2 × 0.025 inch modulation or a total equal to 0.055 inch for center to center spacing of grooves. Note that the modulation space would have to be ten times wider than the groove. A 16 inch diameter disc allows about 4¼ inch usable space before being limited by slow cutting speeds, or 4.25/0.055 = 77 grooves. At 33-1/3 rpm this is only 77/33.3 = 2.3 minutes playing time. The use of this sample cutter head would cause severe limitation of playing time and obviously some modification of said efficient electro-magnetic cutter would be necessary.

Unfortunately, the necessary modifications of the above described efficient "constant velocity" cutting system have not been universally standardized. There are several schools of thought with regard to standards. One school calls for a constant mechanical amplitude on the record for any frequency from the top down to the lowest frequency. Another school of thought calls for a constant velocity system above a given frequency and a constant amplitude below that same frequency. Thus, progressing down the frequency scale, from the highest frequency to a given mid-range frequency the amplitude would linearly increase and below the given frequency the amplitude would be held constant. The point in the frequency scale where the two meet has been called the "cross-over point". See curve B of Fig. 1.

In selecting the cross-over point there are two limitations to consider. If too low a frequency is chosen the amplitude of the low frequencies becomes too great to allow closely spaced grooves for a fifteen minute recording on one disc. If a high frequency cross-over is chosen, the resulting modulated groove at high frequencies contains a wave front so steep that the physical slope of the cutting needle, which has a fixed clearance angle, would have trouble in cutting it. Of secondary importance, the power of the amplifier driving the magnetic cutter would of necessity have to be greater due to the choice of the higher cross-over frequency. This latter reason is more of an economic than a mechanical one but is a consideration in any practical system.

The term "constant amplitude," considering the record itself, should not be confused with the value of the electrical voltage, current or power in the electrical circuits of the recording channel. These may or may not follow—depending upon the type and design of the cutterhead and amplifier driving system.

With the present method of constant rpm disc recording there is an important variable which cannot be overlooked—that of variable cutting speed or groove speed due to variable radius. When recording from outside to inside, for example, any single frequency would have a continuously diminishing wave-length, resulting in a steeper or greater wave slope, and for this frequency there would be a critical cutting radius where the slope of the wave would reach the maximum limit value, i. e., both cutting and reproducing would be practically impossible at a higher level. Progressing to a very small groove radius (resulting

(Continued on Page Twelve)

The 1946 Winter I. R. E. Meeting

Summaries of Technical Papers, Alphabetically by Authors' Names, Continued from Last Month

By Ed Stolzenberger

No papers are available in preprint or reprint form nor is there any assurance that any of them will be published in the Proceedings of the I.R.E. and Waves and Electrons, although it is hoped that many of them will appear in their pages.

39. Reflex Oscillators for Radar Systems.

J. O. McNally and W. G. Shepherd
(Bell Telephone Laboratories, Inc. New York, N. Y.)

As an essential element of a radar receiver, it is necessary to provide a beating oscillator to heterodyne the received signal to intermediate frequency. Military requirements dictated the necessity of compact simple devices for such an oscillator. The reflex oscillator, because of its single-cavity tuning control and vernier tuning provided by the electronic tuning, provides a very satisfactory solution to these problems. In particular, the electronic tuning permits the use of automatic-frequency control systems so that the radar system may be automatically maintained on tune in spite of drift in the transmitter frequency or in the resonator tuning of the beating oscillator.

A number of problems encountered in the design of a series of reflex oscillators for military applications will be discussed. These oscillators divide into several categories differentiated principally by construction of the resonator and the mechanism employed in tuning. A method of thermally tuning the cavity is described.

5. Frequency Allocations.

Paul D. Miles
(Federal Communications Commission, Washington, D. C.)

A brief review of international and domestic frequency allocation regulation is given, followed by a description of the steps taken in the past two years by the United States to prepare for the next international telecommunications conference. Consideration is given to new radio services which must be anticipated, their probable effect upon future allocation tables, and improved techniques which must be exploited to insure the accommodation of these services in the spectrum.

85. Problems Associated with the Standardization of Quartz-Crystal Units for Military Equipment.

Captain Charles J. Miller, Jr.
(Squier Signal Laboratory, Fort Monmouth, Red Bank, N. J.)

Some of the technical problems which must be solved before a series of ultimate standard quartz-crystal units for use in military signal equipment can be established are discussed, and progress to date in the solution of these problems is indicated. The crystal impedance meter, a new instrument for measuring the impedance of a crystal unit, is introduced and described. A brief review of the fundamental electrical properties of crystal units and associated oscillator circuits is included to furnish a technical background upon which to discuss these problems. A review of the three principal applications of crystal units in frequency-control circuits, calibrator circuits, and filter circuits, and a review of the various types of crystal holders and methods of mounting are included.

35. Glass Problems in the Manufacture of Miniature Tubes.

Henry J. Miller
(RCA Victor Division, Harrison, N. J.)

The use of miniature tubes in military equipment made it necessary to develop stem making and stem-to-bulb sealing techniques to provide tubes which would withstand without glass failure severe mechanical and thermal loading and shock as well as vibration. The three factors which govern the mechanical stability of the stem are buffer gas, depth of insertion, and strain. Methods of controlling these factors are described. The stem-to-bulb sealing technique required to obtain a seal of maximum mechanical rigidity is outlined. It is shown that the resulting procedures for the mass production of tubes were successful in withstanding the severe mechanical stress of wartime use without any epidemic glass failure in the field.

63. Noise Spectrum of Crystal Mixers.

P. H. Miller
(University of Pennsylvania, Philadelphia, Pa.)

Studies of the noise spectrum of crystal mixers were made over the frequency range of 50 to 1,000,000 cycles per second. In the audio range a band pass filter employing a three terminal Wien bridge was used to perform the analysis. For analysis at higher frequencies 7 megacycles was added to the noise spectrum and a communications receiver employed. It was found that regardless of the type of power applied to the crystal the noise temperature varies inversely with the frequency. The noise in the audio range is always large, a noise temperature of 10^6 being typical. A mechanism responsible for the observed noise has not yet been suggested.

67. A New System of Radio Telemetering.

David W. Moore, Jr., and Frank G. Willey
(Fairchild Camera and Instrument Corporation, Jamaica, L. I., N. Y.)

The Fairchild system of radio telemetering was designed to transmit indication of aircraft instruments from plane to ground over a conventional aircraft radio transmitting and receiving equipment. Ground indication is made by an indicator which closely simulates the standard aircraft instrument in appearance and modification to the aircraft instrument in the plane in flight. Instrument indication is transferred into electrical phase angle which may be transmitted by radio equipment. This phase angle is then compared with a reference signal in the receiving station and converted to a dial indication. Provision may be made for sending a number of instrument indications over a single carrier, enabling transmission of indications of a flight group of instruments from, for example, a radio-controlled plane or missile to a distant operating point, either on the ground or in another plane.

54. Microwave Power Measurement.

T. Moreno and O. C. Lundstrom
(Sperry Gyroscope Company, Inc., Garden City, L. I., N. Y.)

Possible methods of microwave power measurement are reviewed. The design requirements for bolometric wattmeters are outlined, and examples are given of bolometer elements that have been developed to meet these requirements. A recently developed bolometer element that may be used over an exceedingly wide band of frequencies is included. The results of experiments to determine the accuracy of these wattmeters are summarized; these experiments indicate that errors may be held to within a few per cent.

55. Directional Couplers.

W. W. Mumford
(Bell Telephone Laboratories, Inc., New York, N. Y.)

The Directional Coupler is a device which samples separately the direct and the reflected waves in a transmission line. A simple theory of its operation is derived. Design data and operating characteristics for a typical unit are presented. Several applications which utilize the directional coupler are discussed.

24. Aircraft Automatic Position Plotter.

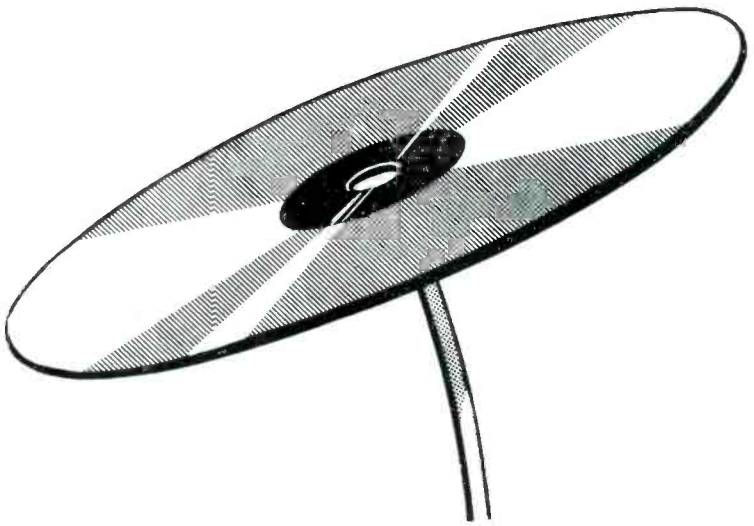
A. C. Omberg and W. L. Webb
(Bendix Radio Division, Baltimore, Md.)

The development of a device for feeding information from two automatic direction finders and a magnetic heading device into a computer, which changes polar co-ordinates into rectangular co-ordinates, is described.

The rectangular co-ordinates gives the position of an aircraft with respect to two ground transmitters automatically controlling a "crab"

(Continued on Page Twelve)

For a finer crop of recordings this season . . .



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. . . PRODUCES A CLEAN GROOVE WHEN CUT!
. . . RETAINS ITS SHAPE!
. . . DOES NOT OXIDIZE OR AGE!
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Judged on ease of cutting, tone quality and length of life, your harvest will take "blue ribbon" honors in any competition.

ADVANCE RECORDING BLANKS

Frequency Converter for the New FM Band

By Ed Stolzenberger

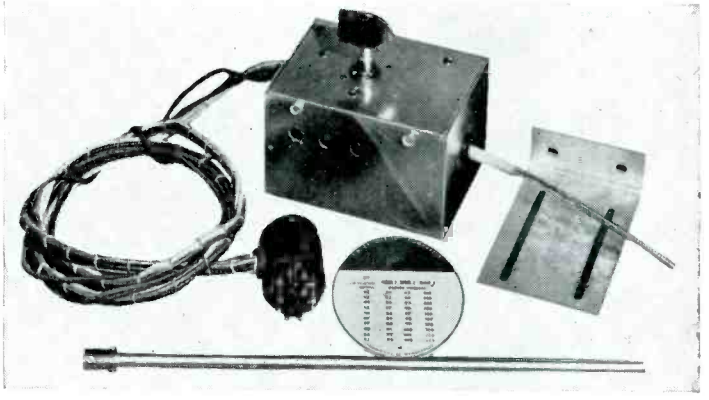
A change in the frequencies assigned for FM broadcasting from their pre-war position between 42 and 50 mc to a new band from 88 to 108 mc makes it necessary to use a converter with pre-war sets in order to tune in stations operating in the new band.

The Hallicrafters Company has developed its Model CN-1 converter for this purpose. It provides the most convenient and inexpensive way to prevent obsolescence of pre-war FM receivers.

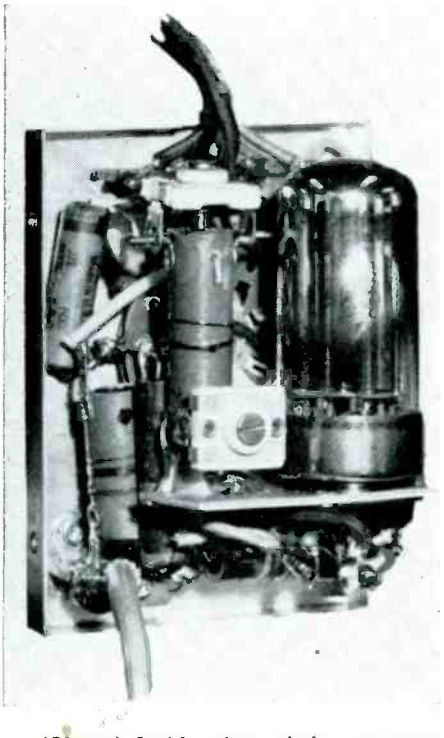
The Model CN-1 FM converter consists of one tube and its associated parts, housed in a metal box. A universal bracket is included for mounting the converter. Its use is demonstrated in one of the photos herewith. Power is supplied to the converter tube through an adapter cable and plug which is inserted in one of the tube sockets of the FM receiver with which the converter is to be used.

A switch is provided on the converter for selecting three frequency ranges; 84 to 93 mc, 93 to 102 mc, 102 to 111 mc, and also for turning off the power to the converter and normalling the receiver for operation on the 42 to 50 mc FM band.

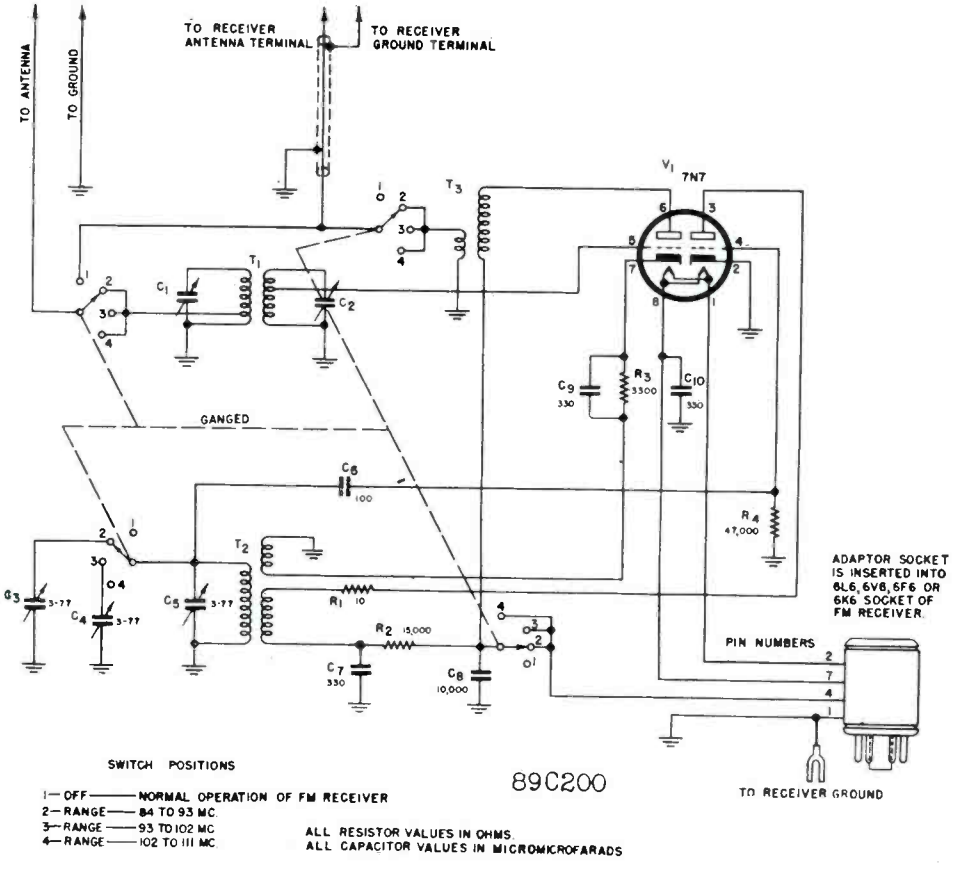
The converter will in no way interfere with the normal operation of the receiver. All tuning is accomplished by the main tuning dial on the receiver; the converter bandswitch is operated to select the various segments of the low and high FM band. When the converter is in use, the high band stations are double-superheterodyned. The



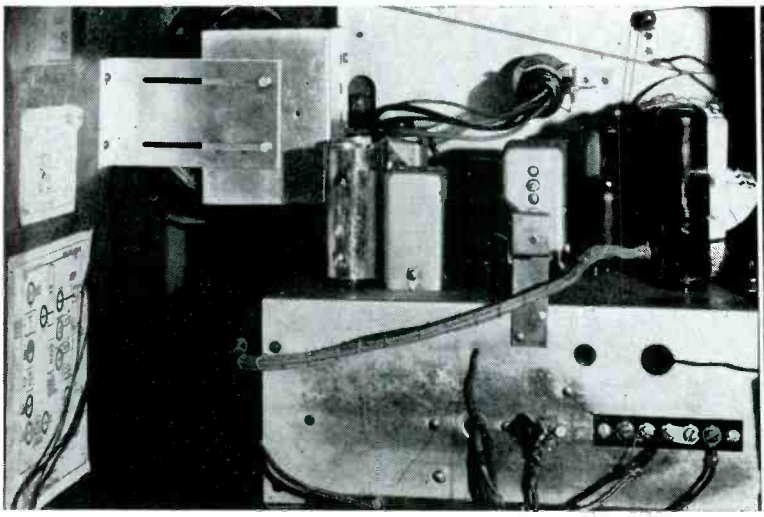
The complete one-tube FM converter

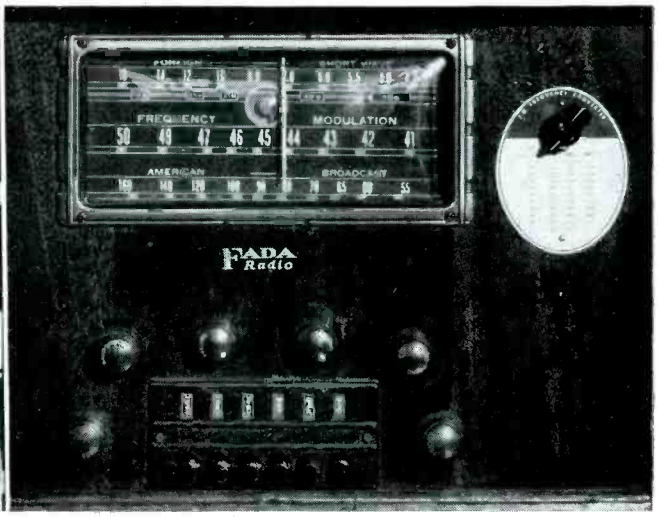


(Above) Inside view of the converter



(Right) Schematic wiring diagram





(Left) View showing one-tube FM converter bracket-mounted from side of cabinet, and cabling and power take-off plug in position. (Right) Partial front view of Fada Radio showing switch on one tube FM converter.

single tube is a 7N7 dual triode which is used as high frequency oscillator and mixer.

The unique feature of this converter is that no soldering, or other mutilation of the original receiver is required.

A very nominal retail price of $15, includes everything, as shown in Figure 3. For the benefit of those of our readers who want to know the "How and Why it Ticks" we have included the schematic wiring diagram.

New Television Channel Assignments

RCA, thru its dealers, has offered to revise its outstanding television receivers, which originally provided for reception of Channels 1 to 5, inclusive. After revision, they will provide reception on Channels 2 to 6, inclusive. A very nominal charge of $30 is being made for the service. Other television set manufacturers are understood to be providing similar service to their set-owners. Under the new FCC channel assignments, Channel 1 will not be assigned to metropolitan areas. The new television allocations are:

Channel 1—44-50 mc.
Channel 2—54-60 mc. (WCBW, CBS-NYC) (WTZR, Zenith-Chi.)
Channel 3—60-66 mc. (WPTZ, Philco-Phila.)
Channel 4—66-72 mc. (WRGB, G.E.-Schenectady/Albany) (WNBT, NBC-NYC) (WBKB, B & K-Chi.)
Channel 5—76-82 mc. (WABD, DuMont-NYC)
Channel 6—82-88 mc.

* * *

DuMont announces two cathode-ray tube catalogues, one dealing with popular types, and the other deals with six oscillographs for precision measurements relating to electricity, mechanics, light, heat, and sound. Write DuMont Laboratories, Passaic, N. J.

* * *

Western Electric Co. announces new broadcast equipment, including a custom built studio control booth console. Provides for 16 microphones, 2 transcription tables, 8 incoming remote lines, and 6 program trunks.

* * *

The Fairchild Camera & Instrument Corp. announces success for its method of removing insulation from synthetic covered wires, in sizes up to No. 55. The Fairchild method first quickly dips the fine wires to be stripped into one chemical solution, then immediately dipping into a final solution. The operator removes the insulation with his fingers. Fairchild claims the process to be non-toxic to the operator and non-harmful to the wire. The Fairchild Corp. has patented the process, which it calls "Dip-n-Strip," and is licensing manufacturers to use it.

* * *

Clarostat Mfg. Co., Inc., 285 N. 6th St., Brooklyn ,N. Y., have just made available catalogue No. 46, listing resistors, controls, etc.

Mobile Radio Telephone Service

The Western Electric Co. has issued a pamphlet describing one type of mobile radio telephone equipment suitable for buses, trucks, trolley cars, boats, etc. It is identified as the 238-A, FM, 152 to 162 mc. Transmitter and receiver each weigh 40 lbs., each unit is quartz crystal controlled, no adjustments or tuning. Service, to and from anyone connected to the general telephone system. Single control—an "On-Off" switch! Operation—"Press to talk" handset. Selective Signalling; bell rings only when your number is called; call indicator lamp lights when your number is called; if away from truck, etc., at time of incoming call, indicator lamp remains lit; when you return, call operator and she advises who called and when, and attempts to complete call. Standby power is 60 watts from 6 or 12 volt battery. Equipment mounted any convenient place, such as underside of chassis, under seat, etc. Service will first be instituted in St. Louis, and thereafter expand to Philadelphia, Pittsburgh, Washington, Baltimore, Boston, New York, and Newark in the East. St. Louis, Chicago, Milwaukee, Cincinnati, Cleveland, Columbus, Detroit, Indianapolis, Oklahoma City, Dayton, and Kansas City in the Central area. Houston, Miami, Memphis, Atlanta, New Orleans, Fort Worth, Birmingham, and Dallas in the South, and San Francisco, Denver, Salt Lake City, and Los Angeles in the West. It is expected that these cities will have service by Sept., 1946. Extension of service to other cities will then follow.

* * *

A.R.R.L. announces that the FCC has resumed issuance of new amateur operator and station licenses. Licenses in effect at the time of Pearl Harbor, although they have passed their legal expiration date, have been temporarily extended by the FCC. Applications for renewals and modifications of pre-Pearl Harbor station licenses probably will be accepted by the FCC after the demand for new station licenses has been met.

* * *

General Electric Co. has made available a 16-page catalogue of its commercial "Marine Electronic Equipment." Also included in the catalogue are GE's FM and AM ship-to-shore, Shipboard PA equipment, Direction Finders, Electronic Depth Finders, and the GE Wire Recorder.

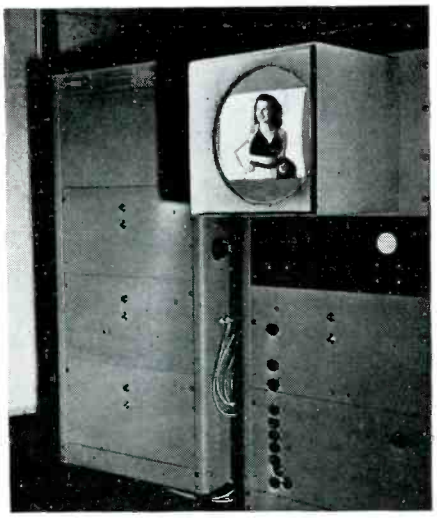
TELEVISION AT WOW — OMAHA

By Bob Rudd

WOW Engineering Department

The most important news around ye radio station this month (this was written in March) has to do with Television. Everyone is talking about it, thinking about and doing something about it.

For the last six months the entire engineering staff has been attending Television classes each Tuesday night. These classes have been prepared and



This is the completed Demonstration Unit built by the WOW Engineering staff. The left hand rack contains the Sync. Gen. and low voltage power supply. The right hand rack contains the 12 inch Kinescope, line amp. and high voltage power supply. Seen on the monitor, this is the way Miss Dundis looks on the screen of the picture tube. Please tell us Television is here to stay!

presented by Chief Engineer W. J. Kotera.

Technical Director Joseph L. Herold and Mr. Kotera felt that in addition to theory, each Engineer should have some good practical experience in actual operation and design of equipment. They worked out a plan whereby each operator was permitted to spend as much time as he cared to on the actual building of a Television Demonstration Unit. Whenever anyone had a bit of spare time to go to the Tel. Lab., he was permitted to do so and Chief Engineer Kotera or Tech. Director Herold was there to assist him in layout, wiring, mounting of components or to continue with whatever progress had been made by the last man that had worked on it.

FRONT COVER PHOTO

Oh. Oh, what's this? It only takes one glance to tell us that the eyeful being Televised is the Omaha NABET Sweetheart Loretta Dundis. That's what makes Television so interesting. Oh yes, the black box on the pedestal contains the Iconoscope and the camera amplifier. WOW Photo.

Parts were rather hard to obtain and the work has not progressed as fast as was desired but the Unit has been completed and each operator has had an opportunity to thoroughly acquaint himself with the workings of the finished product.

At a recent class, a small movie projector was used to flash pictures on the mosaic and then were viewed on the Kinescope. Each operator had a chance to get the "feel" of the thing by adjusting the controls for shading, brilliance or anything else that he felt was necessary to get a perfect picture.

All classes are now spent working with the unit and much is being learned about the art. There have been "bugs," yea, many, but the "bugs" are being worked out and everyone feels that the experience obtained has been well worth all the time spent in training.

Looking down on the inside of the left hand rack. Each control is stencilled to simplify circuit adjustment. WOW Photo.

Crystal Ball Dep't

The Journals addressed to the following are undeliverable by the United States Post Office, for the reasons stated by the Post Office on P. O. Form No. 3547, as follows:

E. L. Parkhurst (San Fran)—no such number on street.

C. T. Stevens (San Fran)—moved (left no address).

Lt. B. L. Dunbar (Omaha)—no record at Norfolk NCS.

Mr. Kennedy (San Fran)—undeliverable due incomplete Staten Island, N. Y. address.

Capt. C. L. Pierce—unknown at Fairfield Spec. Depot. (Chicago).

J. Wallace Downs (Chicago)—not there.

Donald W. Gruitt (W. Va.)—not found.

R. P. Bord (Dixie)—moved.

J. D. Whitmore (Hudson)—moved.

E. A. McCornack (Chicago)—moved.

R. L. Gondek (Rochester)—moved.

K. A. Slobb (Chicago)—moved.

J. F. Gardner (San Fran)—unclaimed.

R. Stirewalt (San Fran)—deceased.

C. Sanders (San Fran)—moved.

A. McDermott (San Fran)—moved.

R. D. Compton (Engrg)—Moved.

A. Gressens (Rochester)—moved.

A. Mitchell (San Fran)—moved.

H. M. Ialberg (Syracuse)—not at.

R. C. Kennedy (Engrg)—moved.

F. H. Sperr (Hudson)—moved.

T. Kruse (New York)—moved.

—*ad infinitum*—ED STOLZENBERGER.

Coax Cable

Available from NABET member Harold V. Flood, Box 215, Massapequa, N. Y., 2,000 feet of RG8U, in 20 and 25 foot lengths. Max. voltage, 4000. Impedance, 52 ohms. Outside diameter, .405 in. Polyethylene dielectric, No. 33 copper braid, covered by black vinylite. Inner conductor, 7 strands No. 21. Cost: 5 cents per foot plus postage.

Actor — Hams

The American Radio Relay League is compiling a list of licensed amateur operators who are well-known in professional fields. Of the better known are Freeman Gosden, Alvino Rey, Andy Sanella, Eddie Green, etc., but there must be many more. Send names directly to A.R.R.L., West Hartford 7, Conn.

RCA airborne television will bring you thrilling news events that could not otherwise be "covered"—while they are happening.

You'll see news in the making—through Television

Imagine! A helicopter is "covering" the story of a man marooned on a burning building. Sitting at your home television receiver, you will get the same eye-witness view as though you were riding along in the nose of the plane!

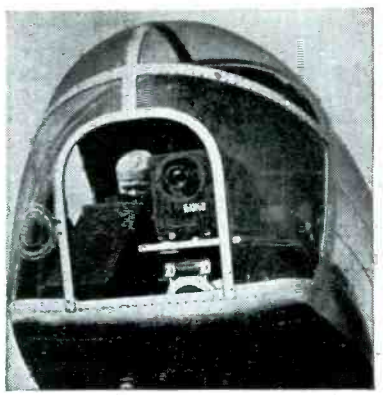
To develop equipment compact enough to fit into a plane was a major problem. But RCA-NBC scientists and engineers in co-operation with the U. S. Navy did it—and airborne television became a wartime reality.

This portable equipment has many peacetime uses—and may lead to development of a "walkie-lookie" with which a radio or news reporter might cover a story by television as readily as a news photographer does now with a camera.

Such progress-making research goes into each and every RCA product—and is your assurance that anything bearing the RCA or RCA Victor emblem is one of the finest instruments of its kind that science has achieved.

• • •

Radio Corporation of America, RCA Building, Radio City, New York 20... Listen to The RCA Victor Show, Sundays, 4:30 P.M., Eastern Standard Time, over the NBC Network.



A television "eye" in the nose of a plane! Besides covering news events by plane, automobile or boat, such revolutionary equipment developed by RCA and NBC, can make accurate geographical surveys from planes flown by remote control. Moreover, similar television equipment can observe hazardous manufacturing processes from a safe distance.

RCA **RADIO CORPORATION of AMERICA**

WHAT'S NEW?

By Jordan McQuay

RECENT announcement of the Azon bomb revealed yet another war use of radio—hitherto unknown to Joe Citizen. Used frequently by the AAF during the closing months of the war, the Azon was a 1,000-pound demolition bomb with radio control. After release of the missile by the bombardier—using a conventional Norden bombsight—a million candle-power flare in the tail of the bomb was automatically ignited by a trip fuze. Then, merely by following the flare with his eye, the bombardier could detect any errors in azimuth—and guide the bomb toward the target by radio control. A receiver in the bomb feathered the fins of the Azon affecting angle of glide—all according to signals transmitted from the bombardier's control box. And errors as small as five or ten feet at an altitude of 15,000 feet could be corrected.

* * *

A further improvement of the Azon bomb was the Roc television bomb. Equipped with a tele pickup tube in the bomb head, a transmitter sent back a photo of the target as the bomb descended. This image was received in the bombing plane, permitting guidance of the bomb in azimuth by means of radio control similar to the Azon bomb. Although considered the ultimate in precision bombing, the Roc television bomb was used only in the closing days of the war.

* * *

Now gadget for juke boxes automatically plays canned "commercials" for Free between musical recordings for Price Five Cents.

* * *

The FCC has established a laboratory division within its engineering department chiefly to study civilian uses of radar—particularly as they affect frequency allocations and the need for licensed operators. Unit is head by RID tech supervisor Charles A. Ellert.

* * *

In their Baltimore plant, Westinghouse has started production of high-definition television pickup units for processing either black-and-white or color pictures—with associated sound for simultaneous transmission on the same radio carrier wave. Sound transmission is effected by frequency modulation. Simultaneous broadcast of both sight and sound on the same carrier is made possible by a system of high-speed pulse transmission—borrowed directly from radar systems technique. Units are designed for use by the Columbia Broadcasting System—but may be made available to independent television operators in the distant future.

* * *

Sylvania's industrial electronics division have announced a modulator glow tube of the crater type for sound-on-film recording, facsimile, and photo-electric counters. Tube provides a modulated, high-intensity point source of light by means of a hollow cathode producing high ionization density which may be viewed in depth.

* * *

KQV in Pittsburgh now claims to be the first radio station to broadcast to the public. Owners point to recently uncovered "logs" proving that recorded music was broadcast in 1919 over a 20-watt transmitter, nearly two years before the station was actually licensed and assigned call letters.

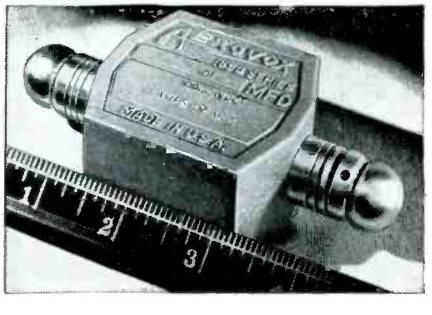
* * *

First intra-store television system to be installed by General Electric will be in the Marshall Field department store in Chicago. First RCA intra-store system will be installed by Gimbels department store in New York. Similar arrangement has been worked out between DuMont and John Wanamaker in New York. Priority arrangements are for non-commercial television systems. None of the equipment is in production.

Ultra-High-Frequency Bakelite-Molded Mica Capacitor

Exceptionally-low-loss operation at ultra-high-frequencies characterizes the new Aerovox Series 1690 molded-in-bakelite mica capacitor developed and now released by Aerovox Corporation, New Bedford, Mass.

As external evidence of exceptionally-low-loss operation, the new capacitor has rounded hardware—round nuts that are tightened by spanner wrench, round washers, spherical lock nuts, thereby eliminating sharp edges and corners that cause corona loss; the use



of fine threads for the terminal studs for maximum contact; silver plating for all conducting members to minimize skin resistance; and the body of XM or yellow low-loss bakelite. Internally, the mica stack of carefully selected mica and foil is designed for a straight-line path for the ultra-high-frequency current.

These Series 1690 units are several times the size of the well-known Series 1650 bakelite-molded transmitting capacitors. Body dimensions are 2⅜ in. wide by 2 3/16 in. deep by 1⅜ in. high, and 4¾ in. overall between rounded terminal tips. Units are available in ratings up to 20,000 volts D.C. Test or 10,000 volts operating, and in capacitance values up to .001 mfd. at the highest voltage rating.

This type capacitor has been developed specifically for lower r.f. resistance and impedance, thereby providing increased KVA ratings in given bulk. Such units can be advantageously applied as blocking capacitors in transmission lines, as tank capacitors for high-frequency oscillators, as by-pass capacitors for ultra-high-frequency energy, and as coupling or by-pass capacitors in induction-heating circuits.

Disc Recording

(Continued from Page Five)

in a slower cutting speed) the given frequency, forced and held to its maximum cutting slope, would result in a gradually lower value of amplitude as the cutting speed decreases, even though the power to the channel is held constant. The limiting process theoretically begins at the highest frequency and passes on to each succeeding lower frequency as the groove speed is reduced. In practice, the sharp cutting needle does not show any appreciable loss in high frequencies, but there is a great loss in playback due to the physically rounded size of the present day needle.

As a result of the two basic considerations, first, that of limiting the maximum amplitude of modulation (at low frequencies) in order to secure closely spaced grooves, thus providing a greater length of recording time, and second, limiting the maximum slope of the wave at high frequencies, present day practice calls for spiral grooves of from 96 to 156 lines per inch at both 33-1/3 and 78 rpm usually in an outside-in direction.

(Continued next month)

IRE

(Continued from Page Six)

which continuously plots the position of the aircraft on a chart. The method of developing the computer and a model of the device is described.

51. Radar Model XAF.

R. M. Page

(Naval Research Laboratory, Washington, D. C.)

This paper gives the story of the technical development of the U. S. Navy's first operational radar equipment, the XAF. Theoretical considerations and design parameters are given for pulse-modulation transmission and reception equipment, and exemplified in the XAF circuits. Of particular interest are the six-tube, high-frequency oscillator and the coupling circuits permitting efficient operation of both transmitter and receiver on the same antenna.

(Continued next month)

from Hollywood

By Norman Dewes

Hay, Hey ! !

Lithe Linda Lounges Loft-wise

— or —

CHOP - CHOP !

Linda Christian, MGM Starlet, comes from Tampico. Linda has graced our pages previously as the "C" girl of the ABC (See page 23, Dec. 1945, and page 71, Jan. 1946 Yearbook).

AROUND 'N ABOUT . . . happened to be reading the Hudson Chapter news in the February issue (we DO read the OTHER columns, TOO . . .) and noticed happily the kind PLAUDITS . . . think Jim Carter is a VERY FINE writer . . . also noticed on p. 14 where the WHAM Control Room fellows up in Rochester want an enlargement of Miss Linda Christian, who appeared jointly on page 23 of the December issue (WE'LL say! Tch, tch!) . . . well, we're glad to REPORT that we're WORKING on the Christian thing, and expect to have a full-sized solo shot of her soon, either this issue or next, if we can PERSUADE Stolzenberger to print it, yank, yank, yank . . . maybe we can handle it as sort of an INSERT, which unfolds to LIFE-SIZE, suitable for hanging on the wall of yer den . . . one of THOSE each issue would REALLY increase circulation, huh . . . were walking past Sound Effects one recent Friday when SUDDENLY there is a loud WHOOM! and the doors fly open and out bursts FX Super DeWolfe, followed CLOSELY by several of his minions and ALL enveloped in a HUGE cloud of dense black SMOKE . . . De runs over to Maintenance and grabs one of the standby gas masks and rushes back in searching for the FIRE, but there is no fire, only billowing clouds of this smudge, which has given 'em all a Jolson complection, with coughing . . . EVERYBODY, including Messrs. Frost and Strotz come running and when asked what-hah—was going on, ANYHOW, all De would say was, "It was just a BOTTLE, that's all . . . just a BOTTLE . . ." We've NEVER found out what was in the bottle, but it must have been powerful STUFF . . . all WE got to say is, De oughta stay out in the HILLS when he is mixing up a batch . . . somebody's liable to get HURT . . . we were riding home the other eve out Ventura Boulevard and there standing beside a car parked off the road is a beautiful SWEATER GIRL, selling balloons . . . she had the BIGGEST and NICEST ones we've seen for some time . . . we stopped, (natch . . .) and offered to blow them UP for her, but she said "NO, thank you . . ." And then there's the skywriter, who is back again over Hollywood making with the smoke-signs, and when he finishes whatever he is spelling out he ALWAYS flys over NBC's Radio City and smokes out "HI" in dots of the code . . . we've never found out who he is, but the NEXT time he comes over, we're going to be ALL SET up on the roof with a fire and a blanket and will give him a "HI" right BACK . . . then maybe we can get up a QSO and arrange to meet LATER for some beer, etc. . . . OR, maybe it will turn out to b e a beautiful GIRL pilot who will givus her phone number . . . ah, SPRING! . . . and speaking of it, it's HERE in Hlyd officially, for the first Good Humor man came around Radio Citee the other day . . . he parked in the Parking Lot and jingled his bells and it was a beautiful warm day and everybody came out and bought a cup or a bar . . . he has some NEW TUNES this year, too . . . and then we were in Studio "G" the other day and the guy was up in the loft tuning up the big pipe organ and we climbed up to watch and there, sitting on one of the banks of pipes was a big can of Clover Leaf TALCUM POWDER . . . after a moment's THOUGHT, we became curious

(Continued on Page Fourteen)

CHICAGO CORN FROM A COB REPORTER

By K. A. Slobb

WILL attempt to make some kind of a column out of this. News doesn't seem to be as easy to get now that ham radio is back. This is the first day that 80 meters has been back on the air, and it is all a mess of QRM as far as my receiver is concerned. And since I am on the subject, will take up ham radio first.

Must relate the sad story of Roger Parker, W9KDI. Roger had a couple of two-section W8JK flattop beams up at his place for ten meters, but when news of eighty meters was released, he decided to put up an eighty meter antenna. He put up one end of this antenna on a stone ornament on the roof of his building, and went over to pull up the other end. He pulled . . . the stone ornament broke in two and half of it went sailing down to land right smack in front of the landlord's window. That's all, brother! The landlord took down all his antennas, and declared the roof off limits. Needless to say, Roger is looking for another place to live, but that is about like asking to work the moon on 160.

Want to be sure and mention that Ed Holm, W9IT, is back on ten meters, and has been working out quite well. Also wish to correct one of the calls in that list of hams published a couple of months ago. Howard Newbouer's call was listed as W9WXY, and it should be W9WXZ. His is on ten also, and puts a pretty good signal in at my place.

There has been some pretty good DX worked around here among the guys. Think top DX honors go to Marvin Eichorst, W9RUK, who has worked Okinawa, Germany, Italy, England, South Africa, Belgian Congo (OQ), Hawaii, etc. Hope you guys won't gripe at me if I didn't include your favorite DX catch. Hugh White, W9LEP, has worked Italy and other stuff; Jim Platz, W9GY, has worked Tinian or Saipan on CW with an inside antenna and Hawaii on phone with the same antenna in the attic. This is by no means a complete list of the stuff worked. Along this line, have yet to hear of a Chicago NABET man working a Hollywood NABET man. Before I forget, add this name to the list of Chicago NABET hams . . . Bud Prather, W8PMC, NBC Maintenance.

There have been quite a few changes in jobs around here. Wish I could chit-chat away about this stuff like Dewes of Hollywood does, but haven't got it in me, so will report the changes factually. Lee Tolleson, a War Replacement, has left NBC for parts unknown. Understand that Les Chase of RCA Recording has transferred to New York. Harold Jackson has been promoted to NBC Assistant Recording Supervisor, and Ralph Brooks to Assistant Maintenance Supervisor. Bill Beeson, another W.R., has left NBC. Ed Bernheim and Dave Kempkes are back at the old stand as studio engineers after being released from the Army. Don Wilson, formerly of NBC studio, has gone out to the WMAQ transmitter. Charley Blanchard and Al Johnson, formerly W.R. NBC studio men, have joined ABC as vacation relief studio men. Carl Cabasin, NBC Field, is going to New York to join Group 12. Harold Royston is now doing MCD vacation relief. 73.

BOOK REVIEW

The Home Mechanic's Handbook, by Di Bernardo, Haines, Adams, Van Tassel, Thompson, Miller, Bailey, and Nowak

Published by D. Van Nostrand Co., New York, 1945. 5½ in. x 8½ in., 790 pages plus 14 page Index. $5.95.

The text is broken down into six general sections, and is profusely illustrated, as follows:

1. Painting. Illustrations, 32. Pages, 100.
2. Woodworking. Illustrations, 178. Pages, 151.
3. Metal Working. Illustrations, 153. Pages, 153.
4. Plumbing. Illustrations, 112. Pages, 105.
5. Masonry. Illustrations, 133. Pages, 139.
6. Electrical. Illustrations, 175. Pages, 142.

Total number of illustrations, 790!

The authors of each section are nationally recognized in their respective fields. Every fact you need to know to do innumerable jobs about the home and in the home workshop is explained in detail, and illustrated—from fixing a broken window or a tight drawer to installing a hot water heater or an electrical circuit—from varnishing a chair to painting a house.

The comprehensiveness of the entire text might be better evaluated by noting the coverage of the Electrical Section, which we are more familiar with: Electrical principles and definitions, Ohm's Law, wire sizes, parallel and series circuits, the various tools required and their proper use in electrical installation, electrical symbols as used in architectural plans, the how-to-do-it of splicing, working with BX cable, snaking through inaccessible places. test lamps and their use, meter reading, replacing connecting plugs (Underwriter's Code is rigidly adhered to throughout the Electrical Section with more-than-necessary illustration thus insuring safety). The signalling section covers push buttons, dry cells, bell transformers, annunciators and chimes, door openers and burglar alarms, house telephone 3-wire system, general trouble shooting. Electrical house wiring with rigid conduit including all the proper fittings. Electrical appliances; brush and motor troubles; electric clocks; heating appliances; lighting fixtures; proper radio antenna installation. Servicing electrical portions of oil burners, refrigerators, pumps, lighting plants, and exhaust fans.—Ed S.

Hollywood

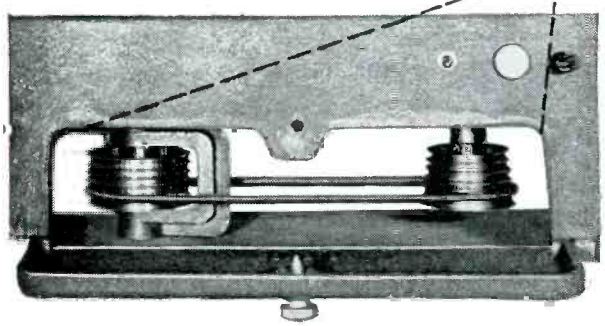
(Continued from Page Thirteen)

and asked the guy about it and he said, "Oh, THAT . . . " Further questing disclosed many OTHER interesting facts about organ chambers, such as that the heat of your body will DE-TUNE some of the little pipes . . . the organ man said that he had to drop by quite OFTEN to check 'em . . . decided that we had better not ask any more questions . . . and then to tag our day, were resting in the booth during a rehearsal lull and noticed a neat, new card tacked up above the phones, listing many of the commonly-called offices and numbers in the Building . . . read it thru and down at the bottom the last number listed was 288 and opposite it was the strange name "Yondala" . . . being still in a curious mood, we picked up the phone and dialed "288," but nothing HAPPENED . . . it just rang . . . since then ,we've tried 288 at all hours of the day and night and have persuaded a dozen or so OTHER people to become interested and THEY dial 288 at ODD MOMENTS, but all it does is ring and ring and ring . . . it's getting to be sort of an OBSESSION around the Building and people stop you in the halls and ask "Have you gotten 288 yet?" . . . wish we hadn't started it, but can't STOP now . . . just a minute . . . nope, it just ring and rings and RINGS . . . the most MADDENING part of the deal is that once in awhile you will get a BUSY signal . . . oh, Yondala won't you PLEASE answer . . . you must, you must, you MUST . . .

Well . . . space is about Up for this month . . . there's LOTS of dirt as yet unspilled, but guess we will have to shovel it over in the corner until it's time to DIG IN for NEXT month . . . had some Ham items 'n some news from CBS and Mutual 'n some Television flashes 'n LOTS of swell personal snatches, but want to save room for Linda, if she arrives in time to make the Column . . . there's a THOUGHT there, but we'd better leave it alone . . . and OYES, Brooke is back, and Saxton's GOT him . . . as soon as Bob stuck his tanned-as-ever puss in the Lounge, we GRABBED him and started our long-awaited pitch about turning the Column back to him, etc., but he sez "No, Norm, No . . . you've been doing a SWELL job, so just KEEP it UP, as I want to rest up and re-convert, etc. . . ." This was quite a SHOCK, but we did get him to say that he might bang out some articles, maybe, about electrons, his experiences, love-life or SOMETHING, so look for his by-line in forthcoming issues . . . bet the stories start out with SUN . . . BCNU.

Not jet propelled . . .

but just as NEW!



The belt on step pulleys slips instantly to any position to set cutting pitch at 96-104-112-120-128 or 136 lines per inch. Other pitches available on special order.

PRESTO'S newest *turntable* . . . for highest quality master or instantaneous recordings. The 8-D features instantaneous change of cutting pitch. An improved cutting head provides higher modulation level, more uniform frequency response and retains its calibration under all normal temperature conditions.

The heavy cast-iron turntable and mounting base insure exceptionally low background noise. Adjustable feet permit accurate leveling on bench or stand at a height to suit the operator.

PRESTO

RECORDING CORPORATION

242 West 55th Street, New York 19, N. Y.

Walter P. Downs, Ltd., in Canada

WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS SOUND RECORDING EQUIPMENT AND DISCS

From BALTIMORE . . . *By William Hoos*

NATIONAL Representative, Clarence Allen, gave Baltimore Chapter the honor of his presence at our April meeting. After a short regular business session, the floor was given over to him for a discussion of contracts and their interpretations, as well as other matters of general interest. Suffice it to say that the session broke up much later than usual, what with all the questions hurled at Clarence.

We've heard all sorts of reasons why transmitters have had dead air, but as yet haven't heard of the reason which almost cost WITH some time off the air—"transmitter engineer taken to jail." We'll tell this on our WITH correspondent, TE Alec Beauchamp, who while on the all night watch at 4 A.M., heard a lot of activity going on around the place with police radio cars running around and such. WITH's shack is a penthouse atop a factory building, and when Alec went out on the roof to find out what was going on, he was promptly taken in custody by the law. Seems that the factory's burglar alarm had been set off and to the cops. Alec looked like the suspect. It took Alec quite a bit of explaining to convince the law that he was supposed to be there, and for a long time he thought he would be on the inside of the bars looking out. It all turned out happily though, he finally convinced the Lieutenant in charge after explaining the marvels of radio and the necessity for a transmitter, and its attendant operator.

This is the first time since we've been writing for the Journal that we've been able to extend congratulations to one of our members on the visit of the stork. Mr. and Mrs. WFBR—SE Ed Stover, were presented with another boy, their third, on March 23. One more to go to catch Crosby, Ed.

A welcome back to the engineering fold at WFBR to Julian Smith who has rejoined us after a two year stretch in the Navy as an RT.

By the time this is in print, Baltimore Chapter as well as the rest of NABET, will have held the annual elections. Nominations were presented at the last meeting, and now the electioneering begins. Whether the incumbents remain in office or new men are elected we offer our best wishes for continued success to those who guide our union destinies.

We'll conclude this part of the Journal with some poetry. Believe it or not, it was written by an Announcer, one Bill Roche by name, who normally sells the sponsor's products on WFBR.

An-ode to the Engineer

At radio he can't be beat.
Two million ergs beneath his seat,
Impel his hand to twist a knob.
That, dear friend, he calls a job.

Master of each situation,
In the field of oscillation.
(Ed. note—also osculation)
He can conquer all Remotes;
Hear ten thousand cycle notes.

Give him just a crystal set.
He'll get China, yes, you bet!
For he's a mighty engineer;
He'll keep us on the air, don't fear!

He works for "spinach" just like us,
Tests his tubes with lots of fuss.
Knows just where to put his jack,
Knows each hole up on the rack.

A mighty, modern man technician,
Who calls his job a skilled position.
He's an engineer, by golly!
The Genius, behind this folly.

—73.

Doings in DENVER *By George Pogue*

AS WE begin with this bit of news from Denver, the large buds, suddenly pushing out in the warmth of an unusually early Spring for Colorado, from dry sticks which seemed to be dead, are developing as if by magic into graceful and green tender boughs. The fruit trees have gradually assumed the bright pink and white lushness which promises masses of rich fruit next August and September. Kenny Raymond and your reporter have their fingers crossed against any frosts that might spoil the promise of the peach trees in their back yards.

As the silent night comes with its balmy Spring breezes, the studio gang finds itself revisiting in dreams the pine scented Colorado peaks and the swift running waters of the trout streams in a pleasant anticipation of the fishing season soon to open. But in the studio itself there has been very little time for any indulgence in Spring fever. There has been a busy hum of installation of applause mikes and amplifier in studio "A." (These mikes are suspended on long booms over the audience and feed into a compression amplifier. The idea is to make 50 people sound like 500. Ain't radio wonderful?) O. B. Hanson visited Denver in February and outlined big plans for future enlargement of the studios, some AC amps at the transmitter, a new vertical radiator, and in the distant future an FM rig at the transmitter.

Up Greeley way at KFKA, two new men have joined NABET. They are Howard Long and Hal Brewster. Both are returned vets. Welcome to the fold, boys! Speaking of Greeley, since the last issue of "Doings in Denver," Kenneth Cooper has left the transmitter at KOA to return to Greeley. Kenney's family still lives there, never having been able to break down the housing shortage in Denver. He will take care of the police radio systems for all the towns in northern Colorado. In the future he plans to have also a freq. measurement lab. for these same stations. Good Luck, Kenney! This has made for a bit of a switch in men. Francis Nelson has returned to work at the transmitter after a leave of absence. Joe Finch from the studio is doing a temporary full time trick at the transmitter, taking care of holiday paybacks, etc., and Kenney Raymond takes weekend trips out there to fill then.

If any of youse guys want any BC equipment, you might be able to talk Carl Nesbitt out of what you want. About six months ago, Carl bought up all the old speech input equipment from KFEL to putz with. It all comes out now. My, what censorship we do have!

Radio does things for us! After years of constant exposure to radio via MCD, Stan Neal has borrowed a book from one of the announcers on "Music Appreciation," plus a note book outline the announcer had made of the course. To date, Stan says he has read the outline, and hasn't the network had some good dance orchestras on lately?

Aubrey Blake has been the busy man these last two weekends, lugging gear out to Fitzsimmons Hospital Post Theatre for a pick up of the Denver Symphony Orchestra broadcast of "Orchestras of the Nation." Denver is pretty proud of its Symphony. As the last program closed, there was a real finale—the voice of the producer yelling in the distance came in faintly on the control circuit to MCD, "Hey, Joe, what time you got?"

Around KOA many of the guys are hamming full blast. There was a good one on Milt Hall. It seems his little girl ran into the house, yelling, "Say, Daddy, the garage is talking." Upon investigation, Milt discovered that there was an arcing on a conduit in his garage every time his rig went on the air! Russ Thompson is getting all set to be on the air real soon. He has his oscillator and buffer all built. He will be working you guys soon. Joe Rohrer went on the air the other night when the eighty meter band opened up with a borrowed coil from Glen Glasscock. But with Joe's super power the coil went Phzz-z-zt! Now both Joe and Glenn aren't on the eighty meter band.

Vacations are in full swing at both studio and transmitter. At the studio Joe Finch is lead-off man for a vacation, and at the transmitter the first one is Joe Turre. Big news is Douglas "Pinkie" Kahle taking his vacation in the middle of the Summer instead of during the deer season. Polly must have won the argument! With the news that Ray Green has left KFEL and is coming back to KOA's transmitter as Summer relief man, we think it's about time to wind up and say we'll see you next month, we hope.

From DIXIE . . . *By D. Gordon McCrary*

SPECIAL event interest has rather shied away from 'PTF recently, however, with a special effort I will recall a few happenings which may border on the "Newsy" side.

On March 15th we aided-and-abetted in the marriage of one Arthur Fredericks (announcer) to Miss Mildred Goodrich (better known as Millie). The church was beautifully decorated with palms and lillies, which made a very picturesque setting. Our good friend Scotty very ably rendered the appropriate organ music, as usual, Scotty's music made good listening. After the ceremony, a reception was held at the home of the bride in Durham, N. C. Refreshments were served and everyone enjoyed it very much.

The Engineering Staff has been notified to oil-up the remote equipment and be prepared to do some "nemo" work. In fact, beginning with Saturday, April 6, a series of baseball games will be broadcast, the first game to be an exhibition between the Philadelphia A's and the Baltimore Orioles at Devereaux Meadow Park, Raleigh, N. C.; as well as, starting a tour of the State of the Carolina Barn Dance, consisting of all the WPTF Hillbilly talent.

In last month's report I gave a little sketch on Dave Smith and his ad lib job on a transcribed spot, which was forced upon him due to his late arrival in the studio with no time to pull the spot from the files and cue same on the turntable. Well, he broke his record. . . . It all began with a conversation in the control room between Smith, Hunter Wall, and myself. . . . Subject: Radio . . .

This trio so enrapt in the possibilities of television in these parts, the time slipped up. . . . At 3:59:30. . . . "This is NBC" . . . Wall (S.E.), "Dave, haven't you a spot here?" . . . Dave, "œ$%*æ$@!" . . . 3:59:35 . . . Bong . . . Bong . . . Bong Dave makes a wild dash out of the control room with 5 seconds to go. . . . A glance at the schedule. . . . 4 seconds to go. . . . transcription snatched from the file . . . 3 seconds to go. . . . Pickup head placed on E.T. and one of the quickest cue-up jobs in radio history (at least as far as I am concerned). . . . With one second to go, Dave motioned for the mike. . . . Gave a station break and E.T. credit and spot was on the air and ran to conclusion, then joined "Back Stage Wife" just in time. Dave, "Whew! Great guns I made it!!" . . . I might add that Hunter Wall, the engineer at the controls, was in a convulsive state trying to keep up with "Cyclone" Smith—but he did it!

Information as furnished by Howard Sugg (T.E.) is that the following T.E.'s: Frank Colvert (recently returned veteran with overseas service, and head man behind the mike of W4DOP, still temporarily limited to the vicinity of Raleigh due to no antenna space), Sam Lyles (T.S.) also a returned veteran with overseas service, Howard Sugg (T.E.), Waldo Rood (T.E.), and Nick Pieler (T.E.), have all given up six week-ends to study the whys-and-wherefors of F.M. Fifteen other engineers from various stations in North Carolina, South Carolina, and Virginia, are also participating in this six week course. I am informed the course will be held at State College, Raleigh, N. C. All this is to be topped by a F.M. demonstration by most of the top F.M. equipment manufacturers—Best of luck, fellows, it sounds very interesting.

Beginning with this month's report, we will run a series of pictures introducing our engineering staff, to be followed by the boys on the engineering staff of other stations in the Dixie Chapter. The picture appearing with this article introduces Robert D. Royal (S.E.) recently returned veteran with overseas service. Since Bob has been back with us, he hasn't found a place to live. He and Mrs. Royal are having to live in the "country," he says, in one room and eat in town at any one of the tray shops where he can manage to squeeze in the line. Let's hope Bob finds a place before too long, or I'm afraid conditions will force him elsewhere.

BOOK REVIEW

Principles of Radio for Operators by Atherton

Published by Macmillan Company, 1945. Five by eight inches. 289 pages, plus 53 pages of Appendix and Index. $3.75.

The text is based on material used in a 16-week Navy training course for radio operators, and uses a very small amount of high school algebra. The book is written in a manner to make radio understandable to persons who have attained at least high school age. This book discusses the nature of electricity, batteries, Ohm's law, magnetism, motors and generators, meters, analogy of sound and electric waves and the microphone and loudspeaker, inductance—capacity—resonance, history and operation of vacuum tubes, radio and communications receivers, transmitters, power supplies, and antennas, Each chapter concludes with one or more Demonstrations (experiments), a Review Test, plus sources of instructional film dealing with the chapter just concluded. For example, one of the Demonstrations requires assembling a superheterodyne receiver, and one of the Review Test questions for this Chapter is: Describe in detail the purpose of each section of the superheterodyne receiver. The Appendix covers symbols, artificial respiration, RMA color codes for resistors—condensers—IF and AF transformers—loud speakers and field coils, trouble-shooting test equipment, Tables of Receiving and Transmitting vacuum tube characteristics with socket connections. The student of radio will find this text beneficial.—EdS.

New C-R Tube Provides Greater Brilliance and Deflection Sensitivity

Greater brilliance and deflection sensitivity characterize the new Du Mont Type 3JP cathode-ray tube just released by Allen B. Du Mont Laboratories, Inc., of Passaic, N. J. This type is the logical successor to the war-time Types 3BP and 3FP, combining the best qualities of each.

The 3JP is designed for oscillographic and other applications requiring a small, short tube with very high light output and deflection sensitivity. It is an excellent tube for equipment which must be operated under extremely strong ambient light conditions. The focusing electrode current under operating conditions is negligible, thereby simplifying bleeder design. The 2 in. neck and diheptal base provide adequate insulation between electrode leads for high-altitude installation.

For applications where deflection voltages are under suitable control, the 3JP is directly interchangeable with the 3FP. Equipment using the 3BP may be readily adapted to use the 3JP by providing for connecting the intensifier electrode of the 3JP either to the second anode potential or to a higher potential than the second anode. Due to the higher deflection sensitivity of the new 3JP, it can be utilized with intensifier potential equal to twice the second anode potential, without reduction in sensitivity as compared with the 3BP operating with the same second anode potential.

Engineering specifications of the Du Mont 3JP (which is on the Joint Army-Navy Preferred List) may be had on request.

Omaha News By Bob Rudd

Things and Stuff

Al Maller (Control) has been working hard to obtain his pilot's license. In order to meet the CAA requirements, he must have 32 hours of solo flying to his credit. On his day off, he usually takes a flight to some nearby town to get those precious needed hours.

Thursday, Jan. 10, Al started on a flight to Shenandoah, Iowa, sixty miles away. His flight was without incident until he was within a few miles of that city, when suddenly his plane developed motor trouble and he was ohliged to make a forced landing in a field.

Al managed to set the plane down, but the ground was rough and uneven and as a result of the landing, he received a badly cut lip and severe bruises. He was able to walk to a nearby farm house where he received aid and was taken to a doctor. The doctor took seven stitches in Al's lip. He was brought hack to Omaha by car.

Lt. B. L. Dunbar is now civilian Bill Dunbar. He received his discharge from the USNR, Jan. 20th. Bill served 4 years in the Navy as a communications officer and made several very important contributions to the art of direction finding and secret transmission of messages. Bill is back on the job at WOW as control and recording engineer. We're delighted to have you back with us, Bill.

Sgt. Richard E. Peck popped up unexpectedly on Jan. 18th. He was dicharged from Ft. Logan, Colorado, and immediately left for Omaha. The writer had no idea that he was anywhere in the country and his 'phone call caught us by surprise. His wife. Katherine. came to Omaha to meet him. Contacting Technical Director Joseph L. Herold, he was told that his job was waiting for him and that he would start to work February 1st.

After a brief visit with friends, two very happy people left for their home town of Kansas City, Mo. Dick will work in the Control room. Welcome back, Dick and "Katy."

Technical Director Joseph L. Herold spent the week of January 19th-26th in New York City, attending the IRE convention. Many important papers on television and kindred arts were presented.

Vital Static

Birthday greetings are in order for Technical Director Joe Herold, G. Flynn, Control Supervisor, and Dick Peck, Control Operator. JL's is Mar. 8. G's is Mar. 22, and Dick's is Mar. 25.

Congratulations to Louis DeBoer as he starts his third year with WOW, March 15th.

Birthday Greetings to Roy Glanton. The day is May 2.

Happy Anniversary to Paul and Rowina McDonald on their 13th wedding anniversary, May 11.

Roy Glanton completes 17 years' service with WOW, May 24. That's a long time, Roy. Richard E. Peck, recently returned veteran, completes 4 years' service with WOW, May 22. Congrats me boy!

Bob Rudd completes 11 years' service with WOW, May 29, and also sings his swan song with the Journal. The Column will be headed by one of the gang here, but nothing definite at this time. Thanks to you all for your cooperation and it's been a lot of fun.

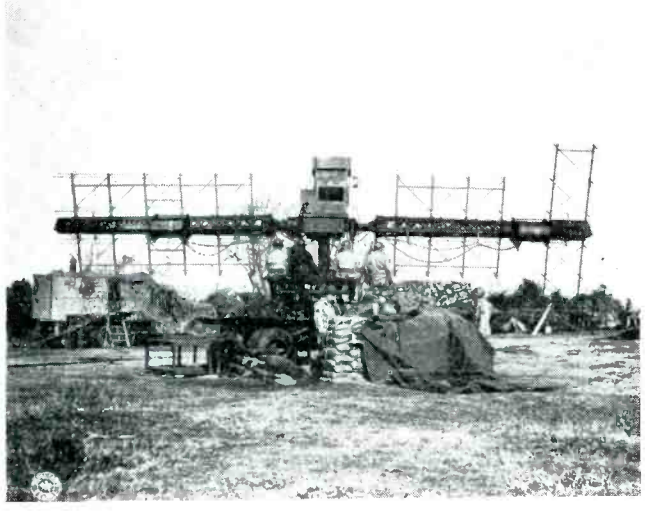
NABET Activity

(Continued from Page Three)

out of town for a total of seven days, completed organization of two stations. negotiated one contract renewal, and one new contract, and settled one contract dispute.

C. A. Allen, National Representative.

Now It Can Be Told—



The SCR-268, shown here in action in the Nettuno area of Italy, was the first radar set developed by the United States. First of its kind, it was in operation overseas as early as 1940. The set is mobile, has a range of 40,000 yards, and determines range, direction, and height of aircraft. Three antennas are mounted so that they turn and tilt together. One is connected to the u-h-f transmitter, the two others are connected to two receivers. Widest receiving antenna determines horizontal direction of airplane. High and narrow antenna measures the airplane's angular elevation. Searchlights controlled by the set will point automatically and continuously in the direction of target planes. When the SCR-268 is connected to a gun director, anti-aircraft artillery will move automatically in the same manner in such a direction that the trajectory of the shell will bring it to a burst in the near-vicinity of the target aircraft.—Jordan McQuay.

The Recording Blank Division of the Gould-Moody Co. of 395 Broadway, New York 13, N. Y., announces expansion of its "Needle Resharpening Service Department." Contact Gould-Moody Co. for details.

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The NBC Television Dep't has produced a humorously-illustrated 55 page booklet (5½ in. x 8 in.) titled, *Television Talk*,—a glossary of television engineering and production terms, designed for ready-reference by television broadcasters.

This Report Comes To You By Way Of San Francisco

By Jack Van Wart

Guy Cassidy has been pulling a little stunt nightly for, as far as I can learn, nearly six years and still it's news cause I don't think anyone has said anything about it yet. It seems that each night when he returns from the Bal Babarin pickup he arrives at the corner of Taylor and O'Farrell just at the time the Cable Car is coming. The gripman tells me that he thinks Cass just waits for him so that he can put the truck in front of the cable car and block the tracks intentionally. I was quite surprised to see this and also to see Cass answer to the name of "Farmer." More Vacation Plans . . . Ernie Jefferson planning the master vacation for this summer. He is going to take his wife and children via the air lines to Detroit, pick up a new car and then tour the Southern States and return to San Fran by way of L. A. . . . J. Alan O'Neil expects to take himself and family by plane to Mexico City for their vacation. . . . These group five spenders. . . . Quotes from the Local Press. . . . 'Arry Bridges, asked to make a transcription for KGO's "City Edition," was in a bit of a hurry to get the thing over with, although the studio wasn't ready. "Couldn't we," he asked newswriter Nick Allen, "just set up the mike ourselves and get going?" "No," answered Allen, "only an engineer is supposed to arrange the mike—strong union, y'know." "Oh," oh'd Mr. B. . . . Earl Sorenson has completed his work for his degree in EE. Congrats to Earl, as he worked the all nite watch in maint and went to school in the day time. . . . Visitors . . . Bob Callen up from Hlyd. Recording. Chief Saxton also visiting from the 'Unterland.' . . . Frank Miller dropped in during a trip here to see his family. Frank was once a relief engineer at KPO and is now with WOR. . . . Clark Sanders made a quick trip to Portland last month, and Bob Woods journeyed in the other direction to L. A. . . . Cliff Rothery and San Melnicoe ran into a little trouble last month or was it visa versa. Anyway they are both waiting for the garage to finish putting their cars back together.

INTRODUCING

By Ken Martin

MEET Otis Hill who came to work at KGO Transmitter the first part of last October. It is a pleasure to know and work with this Southern Gentleman who was born in Columbus, Georgia. Going back quite a way, Otis admits to enlisting in the U. S. Army in San Francisco on August 8th, 1916, thus serving before, during and after World War I. During his Army career, he put in two years on Corregidor Island (Fort Mills), P. I., where he acquired his initial radio training at the radio-electrical school, graduating in 1918 with warrant as a Radio Staff Sgt. He installed the first practical wireless telephone in the Hawaiian Islands in June, 1920. He was

honorably discharged from the Army, August 7th, 1920, at San Francisco.

Otis then first entered the commercial radio field as a radio operator aboard ship, sailing first from West Coast ports and later from East Coast ports, holding down combination purser-wireless operator and radio operator jobs on various ships and at various shore stations from 1920 to 1927. For a time, his ticket adorned the walls of the second oldest BC station in the U. S. A., KDPT in San Diego, California, in 1921, and he was actively engaged in the old URTA (Radio union) SF Office, before and during the strike in 1921.

In 1927, he resigned Chief Operator's berth on the old Matson Flagship, Maui, to accept a position as wireless operator with the Hawaii Telephone System in Hilo, Hawaii. During a long and interesting residence in Hawaii, he organized and was manager of the radio department for the Hawaii Music Company from 1928 until 1931 at Hilo; organized and was President of the Hilo Broadcasting Company, at Hilo, with the first BC license for that island, (KWFV) in 1932 and was appointed Territorial Radio Commissioner for the Island of Hawaii in 1937. His last position before joining ABC was that of Supt. of Communications for the Hawaiian Airlines, Limited, Honolulu, for 8 years. He resigned that position and moved to the mainland to be with his two daughters

while they attended College. Hawaii's loss is California's gain.

Mr. Hill has been very active in fraternal and civic affairs for 18 years in the Hawaiian Islands, belonging to the Masons, Elks and the American Legion. He is Past Secretary of Hilo Lodge No. 759, B. P. O. Elks; and officiated as Senior Vice-Commander, Dept. of Hawaii, American Legion for two years prior to leaving the Territory and is a Charter Member of the Hilo Chapter of the "Toastmasters' International."

Interested in Amateur radio work, he operated K6AJA since 1930, and is a member of ARRL, being ARRL Section Communications Manager for the Hawaiian Islands during 1934 and was 4 years in charge of the Hawaii Island Unit of the USNR Communications Division and is a member of the IRE.

We are proud to welcome Otis Hill to our staff and our organization. He is a real old timer and a steady, dependable watchmate with a rich fund of experience and good stories. Welcome again to KGO Transmitter —we hope this is the beginning of a long association.

BOOK REVIEW

Inside the Vacuum Tube by John F. Rider

Published by John F. Rider, Publisher, Inc., New York, 1945. 5½ in. x 8½ in., 404 pages, plus 3 page Appendix. $4.50.

This text is very well written and presents a solid, elementary concept of the theory and operation of the basic types of vacuum tubes. A very small amount of high school mathematics is used where required.

After a simple explanation of the essential electron theory, comes a discussion which represents a new presentation of text concerning the vacuum tube: a discussion of electrostatic fields. By covering this subject thoroughly, the reader is given an easy to understand picture of why amplification is accomplished within a tube and how the grid and plate are inter-related. Throughout the entire text, which covers diodes, triodes, tetrodes, and pentodes, the aim is to present a clear physical picture of exactly what is happening in a vacuum tube, including the development of characteristic curves of all kinds and associated load lines, the cathode follower, etc.

This text is very well illustrated, and are presented in a way to tell a story, and create a further incentive to continue reading. A pair of viewing spectacles are included with the text for viewing several stereoscopic pictures.

The concluding chapter on miscellaneous tubes covers multi-purpose, variable-mu, acorn, cathode-ray, visual indicator, gas tubes, and photoelectric cells.—*Ed S.*

Television Engineering News

By Jack Irving

Photo by Joe Conn

This Is NBC New York

By G. F. Anderson, Jr.

Ollie Fulton and Tom Lyman spent 12 days of March covering half the north country on a—to pronounce it correctly—sheeing trip. Which reminds us that Pinkie Green is still trying to find the culprit who put rice and wedding candles in her suitcase when she went on a skiing trip with Joyce Fraser of Recording. No, these trips were at different times.

One of the funniest stories we've heard lately is the one Al Protzman tells on himself. Protz was at Banana River on a Navy project and was in the nose of a PBY operating a camera. His Mae West inadvertently became inflated and filled every inch of space. A hole had to be punched in the Mae West to get Al out. The Navy was treated to something never seen in television—a deflated Protzman.

George Mayoral, who worked so hard laying planks in the mud at Philadelphia, is soon to become vice president in charge of engineering for the Supreme Broadcasting Corporation. Who is the S.B.C.? They are a new outfit opening F. M. and television stations throughout the south and Puerto Rico. New Orleans will be the first outlet. It always sounds trite, but what we mean is good luck, chum.

The February edition reporting the expected Waterbury baby was read by Mrs. Waterbury in the hospital after the baby was born. It was a she—6 pounds, 15 ounces—and is named Margaret Mary. Incidentally, it was a good thing Bill didn't go to Washington, Feb. 9, as the baby was born Feb. 10. While we're at it we can report a 6 pound baby at the Bob Long residence. It is either a boy or a girl.

The telequiz girls, Jerry and Alice, who have been doing such a fine job on the kid show have been told so many jokes that they are continually Smileying.

At the last meeting of NABET, the following were taken into membership: Bill Jackson, Stewart James, John Schaller and Henry Albert. Among the returnees are Johnny Knight and Howard Miller, Empire; Russ De Baun, Hank Folkerts, Radio City; Bill Resides, audio facilities; Leroy "Buzz" Moffett, lab; Ralph Kennedy from San Francisco to lab, and Ed Stolzenberger, transferred to N. Y. Chapter. The meeting was enhanced by the presence of Chairman Charlie Benis of the N. Y. Chapter.

March, which at first appeared to be a maintenance month, became an r. f. test month with tests made at Aqueduct, Jamaica, Belmont, Freeport, Jones Beach, Downtown A. C., Roosevelt Raceway, Roosevelt Field, La Guardia Field, Botanical Gardens and the Meadowbrook Club. Aqueduct, Belmont and Jamaica sound like Cort Snell had a hand in the proceedings. Court is an inveterate track enthusiast, interested primarily in the betterment of the breed, but can occasionally be coaxed to collaborate on a $2 bet on the first, second, third, fourth, fifth, sixth, seventh and eighth races.

From here it looks like NBC, Philco, Evening Star Broadcasting Company and Dumont in Washington soon. Cable me if I'm wrong.

Burke Crotty, field producer, and Paul Alley our film expert, spoke recently on special events broadcasting before the American Television Society.

Did you know that pre-Broadway productions on full length plays will be televised by the studio next fall. We hope you didn't, but it was in all the papers. Anyway we have to fill up this column somehow. Richard Rodgers, PDGALA, or President of the Dramatists' Guild of the Authors' League of America, and John Royal announced this program. Under the agreement, NBC will

(Continued on Page Twenty-three)

Suppose that we take a brief trip around NBC today and see who we can see. Well HiYah GB, how's Television Field, this is George Butler, GB is an Ex Field Engineer and now is a Television Chappie. How is Hunter College and the UNO GB. Oh, your not going there today, well too bad, as we could have a nice chat there.

On our way again and let's drop into the Field shop for a brief visit with some of the lads. Hello Jimmie Hackett, Was Florida a nice spot to spend a week in? What! you saw a Painted Necktie that was selling for Fifteen hundred? Fifteen hundred what, dollars or cents?

Greetings, Amigo, and was New Hampshire warm enough? This is Felix Ghirlando, Chi Chi recently came back to New York after an extended trip through the Skiing country and he managed to acquire a knee the size of a football as a result of one ski going to the left and the other to the right.

Over there in the corner is Harry Alexander, he is noted for his banking deposits. Alongside of him and being instructed in the art of saving money is Walter Mullaney. Where's Red Shultis—Oh in Norfolk, Va., well I guess he likes the Country.

So long fellows, gotta keep on the way. Hello Jake; M. Jacobson, Field Supervisor. Let's see now, what the boys in the lounge will have.

Say who is that sleeping over there on the couch? Phil Falcone, oh yes, I wonder if he has found his collar button yet. The gentleman at the table busily engaged in discussing the quality of some photos is Sergei DeSomov and the chap with him, who took them, is Vic Barry, who recently returned to NBC after a few years with the U. S. Navy. Seated over alongside the windows is Harold Flood and he is engaged in trying to sell some COAX cable to Jimmie Coleman, a silent spectator to the deal is Harry Grelck, Harry also recently left the Navy. Tom Gootee is being very quiet, must be mentally counting the income from his writing. Say did you read his article on 'Radar' in the April issue of Radio News?

Who else is in here this AM. Not very many, must be a busy day. Where is Charlie Grey? His day off—well it sure is a nice day to be off, temperature in the seventies and a nice sun shining.

Who is making all that noise. Wouldn't you know—it's Fernando Montilla making a telephone call.

Can't stay any longer as we have some other places to see. What's that, who are the characters in here that aren't talking! Oh, they are the ABC engineers, ever since last Christmas, when they were given their Christmas Bonus, they haven't spoke to we NBCites.

Here is the Construction Shop and Howard Firestone of Recording spends all his time in here constructing some new recording amplifiers and down the hall aways—in a wee room is where Ed Schabbehar hangs his hat while repairing recording heads. (Cutters to you). Practically next door to Eddie is 5C, that is an ABC studio so we won't look in there, but next to it is 5A and—well, well, here is Don Ewart—Hiyah Fella—what gives. Spinning records? Oh, for WEAF FM Keep a watch out for Distortion—So Long Now.

Now as we continue along this corridor we can enter the Nerve Center of Broadcasting—MCD to those who know, nerves. Say, have you listened to the Pagettes describe MCD yet, well to give you a brief idea of what they spiel to the paying guests, here is a small part of their story. When they get in front of MCD

and look into it from the loboy, the Pagette, usually easy to gaze at, begins to describe what all the colored lights are and then tells the assembled tour that the Chappies that are so busy in there must serve an apprenticeship of ten years before they may sit at the Master Control Desk and put their No. 12's on it.

Hello Jerry, like you to meet someone. This is Jerry Sellars, Master Control Supervisor. Jerry, this is a reader of this column (I hope). How are things lately, understand that there has been a report sent in that the MCD looks better lately; ever since that last haircut of yours. But tell me, what is Andy Thomson so happy about? Well, congratulations, Tommy, and you say that he weighs six pounds, ten ounces, and that you and Edna have named him Andrew Russell Thomson. When was he born? Wednesday, March 27th, late in the evening. Well, good, and the best of everything to you and Edna. Now if we could hear from Milt Kitchen. Hey Stolzie, when will we have some news from you! OK OK OK, we'll leave before we're thrown out.

Let's go into Maintenance, this is where Charlie Phelan and Alfred Christopher Maintain the equipment. Gee, nobody here but Fred Frutchey and Bill Irvin and Gordon Windham and Ed Gundrum, and Pat Haynes and Jimmie McCarthy and the rest of the lads are off today.

Now, if we go up this fire escape for two floors we will be in the Recording Department, this is where Neal McCarroll started from last week to make a record of the Chesterfield ensemble, while flying over the country in the Constellation.

The program will be done from the Constellation some time next week and it is rumored that Chi Chi Ghirlando and Claude Clayton will be up in the air. Mind you, now it is only a rumor.

This first room here on the left is where Vic Tervola keeps the recording equipment in operation condition, and then as we walk along a little further, we find nice little booths where the Scullys are installed and presiding over them are several lovely ladies, yes, they are NABET Members, but to keep my hair in, I won't say who is the lovliest.

What time is it. What, 4:12. Bye Now. We have a date in Georgia, who-oh Anderson, Mullaney, and Shultis. Thash All.

Television News

(Continued from Page Twenty-two)

provide a cast and produce the plays which the Guild will write. When in full swing, one play a week should be televised.

It's Adrian Gronberg since Pappy was listed as Elwell's assistant in Variety.

Speaking on T.D.'s reminds us of the N. Y. World Telegram story on television in which Edmund Leamy, writing about Angel Street, says "there are others in the control room besides Colling (the producer); the audio man, who's responsible for the sound effects: the video man who takes care of the lights and the camera focus, and their assistants. Problem: find the T. D.

Engineering Chapter News

Audio-Video Facilities, Radio Facilities, Technical Services, and Development Group

By E. B. Berglund

SPRING has arrived in New York and with it came an invitation for Stewart James to spend a week-end in the country helping friends clear a patch of ground for a vegetable garden. This being an opportunity to get next to nature, Stew gladly accepted and did a fine job of clearing brush, but in doing so, picked up a case of poison ivy, which landed him in the hospital for a couple of weeks. We're glad to see you back, Stew, and hope that the nasty weed will never bother you again.

The Engineering Chapter's Get-Together Dinner which will be held at the Bristol Hotel on May 1st, is the latest news of social importance. It is rumored that President Powley will be among the guests present. If we are lucky, we hope to have some pictures of this affair for publication in the next issue of the Journal.

Elmer Mead of the A-V group, can now quit talking to himself

(Continued on Page Twenty-four)

Engineering News

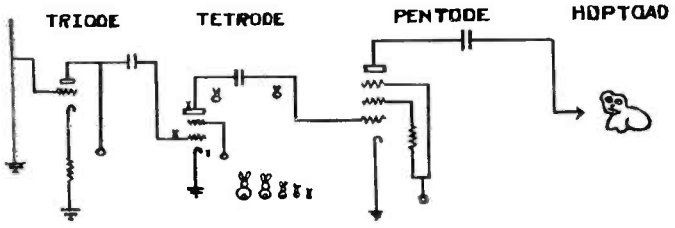
(Continued from Page Twenty-three)

in the Construction Shop. Reason is that Dave Maloney has transferred from the Maintenance Department to Audio-Video Facilities and is presently sharing the same bench with Elmer.

The two "Bills" in the R.F. group were the out-of-town travelers this month. Bill McMillan spent some time at Schenectady with G. E. while Bill Duttera has been boarding trains for Washington, D. C.

Le Roy "Buster" Moffett who recently returned to NBC Development Group from Washington and the Navy is now back in New York after spending several weeks away from the office—yes, you guessed it—he was back again in Washington! While in the Navy, Buster served as Lieutenant Commander at the Bureau of Ships, Aircraft Radio Section. During his 40 months of service, Buster engineered television equipment for guided missiles and reconnaissance television projects. Buster has purchased a home in Tarrytown, New York, and with his wife and daughter, reside at 9 Glenwolde Park.

Second in a Series of Humor-Sketches From the NBC-NY Recording Group:



More On a Schematic

Heard the word going round at the "Factory"?
Nilson-Hornung's becoming passe
Despite die-hards scratching their "Thatchery"
Converts pledge their approval each day.

We agree, they all say, it's confusing
To visualize parts as they are
But on paper—loops—zags with lines fusing
Frustrate wonders—on the soul leave a scar.

The last lesson I'll wager remembered
Not a detail forgotten or missed
Let us carry on then—task be tempered
Bear in mind though—the technical gist.

—R. P. M.

This Is ABC New York

By Gil McDonald

Oscillations From Lodi

SIGNOR ALPHONSE LAMBERTI, building custodian of the WJZ transmitter, extends greetings to the Network. Through his interpreter, he says, Quote, Americano Company she is a good, she is a fine, me coma here a Big Greenhorn, now me all same Engineero's me blow Big Horn, me learn plenty, Woo-Woo. Unquote.

Ham Radio has been going full blast among various members of the Staff since the lifting of the ban. There has been much buying and swapping of equipment, plus a general housecleaning of individual's "Junk."

Nick Hagmann, our Station Chief, is very active on 10 meters and is the proud owner of a new Hammarlund 129-X, Nick has enough spare parts to start a Ham radio store.

Henry Treger, the Assistant, picked up a surplus Ham 120-X but still holds forth on 144 MCs with good results both at home and portable Mobile. He is contemplating firing up his California Kilowatt on 10 meters in the very near future.

FLASH! FLASH!

Prof. Schnozelgrass (alias Fred Moore ABC Engr) is frequently seen in Studio 6-D, says he has his own idea about splitting the atom. He is shown here demonstrating where to start splitting. Who knows, he may even find a solution for feedback elimination through this new discovery.

Photo by A. J. Horwath, NBC.

Willie (Cannonball) Storrs, one of the older men at the station, has dusted off his Rig and is waiting for someone to come around and help him put up an antenna. Due to the beer shortage, Willie is quite pressed for time, replenishing his stock so it does not fall below the minimum requirements. He was quite indignant when informed that his allowance has been cut to six cases a week. Willie moans, "They can't do this to me." When someone mentioned Aurora Borealis, Willie says, send me four cases.

Al "Tiny" Sturhann, our personality man, is in the throes of building a new super De-Luxe Ham-Rig. Al still resides on his farm at Gilhooleys Retreat, famous picnicking grounds in Central Jersey. One of Al's dogs recently won a Blue Ribbon with two Clusters at the Mahawwanatonka Country Club Show.

Ted Cain is also active on 10 meters. He says it is a far cry from the old days when he was in the plumbing business, but the cycle is completing itself with the new type plumbing required in the new Radar Equipment.

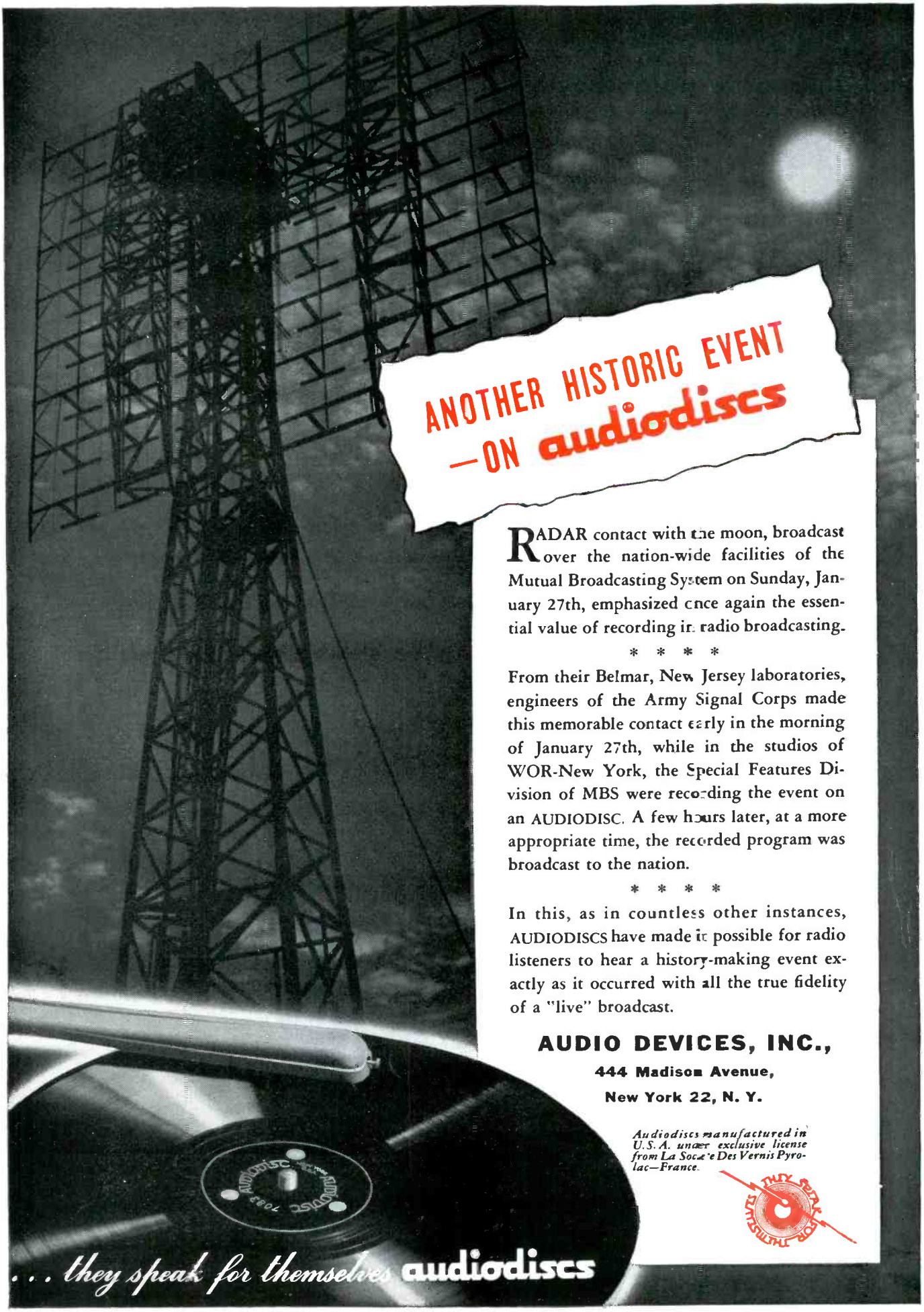
M. Kamke, our DX enthusiast from Pookanook Lake, is knocking them down around this planet with his V Beams. He has just about worked everything except Booga-Booga which he claims must be a dead spot. He is very quiet while on duty but sure spills it on the ham band.

Arthur Griffin, our Bachelor and Beau-Brummel, is also contemplating a little Ham work, his time is taken up at present in search of a fair Maiden to form a Closed Circuit. Art being a Cosmopolite, can often be seen frequenting the Crystal Room of the Hotel Mills in the Big Town across the Hudson.

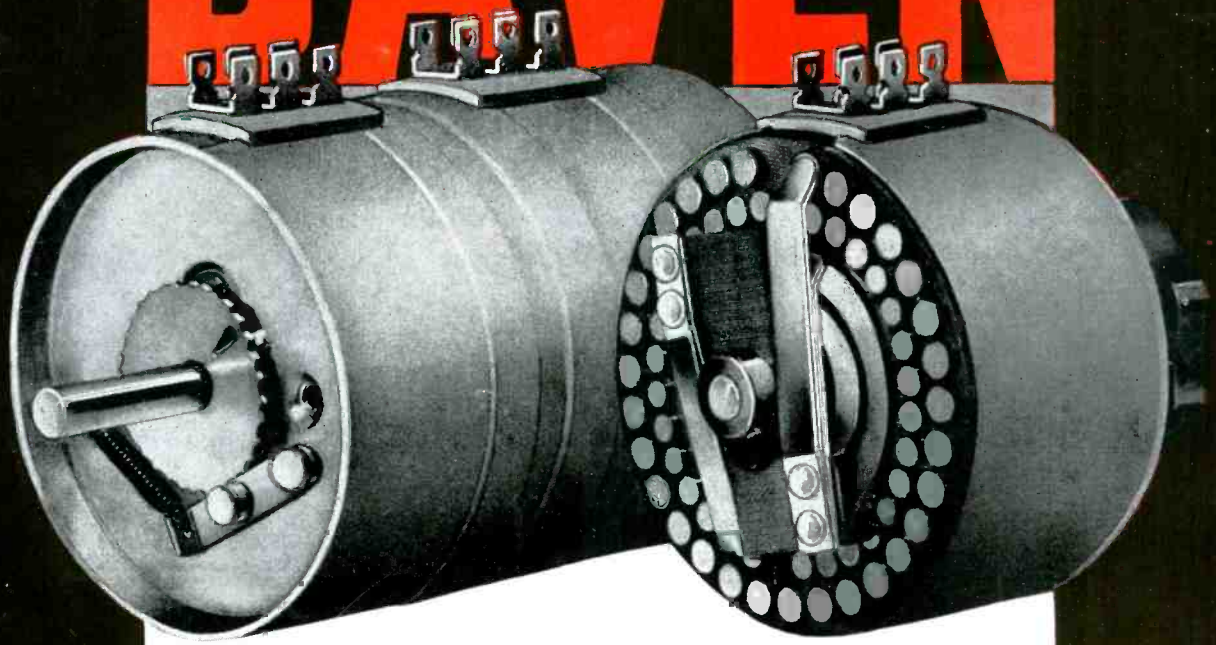
Harry Byers also contemplates some hamming whenever he becomes settled in his own place. At present he is tied up with Real Estate men who have been trying to sell him the idea of a 99 year mortgage. He has his eye on one of Jersey's beautiful old mansions which gained fame as the birthplace of Gootch Goheken, who broke the headlines way back when he was announced as the first legitimate buyer of the Brooklyn Bridge.

"Murph" Mullaney is still living out of a suitcase but expects an apartment in the very near future. He was all set to move in but the OPA held it up on account of a new Ceiling being necessary. Murph is seen frequently around the side entrance with the promise of a good horse tip as bait in trying to hurry things along.

This is all for now from the Nation's Key Station.



DAVEN



PRESENT DELIVERY SCHEDULES
ON DAVEN ATTENUATORS

Despite the current supply situation, we are pleased to announce that our present production schedules assure rapid deliveries of many types of Daven Attenuators. For example, some of our stock items are available for immediate delivery. Reasonably prompt shipments are provided on standard units. Consult us on deliveries of special units. We will do our best to fill your needs as quickly as possible.

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191 CENTRAL AVENUE
NEWARK 4, NEW JERSEY

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DETENT GEAR: Large gear and roller mounted in recessed front end of cover, separate from resistive network, gives accurate indexing.

CERTAIN STOP: Extrusions of detent gear and steel attenuator cover form sturdy stop to rotation, eliminating rotor hub strain of previous method.

IMPROVED SHIELDING: Sturdy, snug-fitting steel cover affords superb electrical and dust shielding and greater all-around ruggedness.

CAPTIVE TERMINAL BOARD: Bakelite board held securely in position, readily released; new, heavy duty solder lugs.

ANTI-FUNGUS TREATED: On request.

SILVER ALLOY CONTACTS: Switch arm contacts and returns made of special silver alloy lowers internal resistance. Other metals optional.

SEPARABLE COUPLINGS: (Feature of dual and multiple unit models) units easily separated for quick access to switch assemblies; simple, durable, foolproof.

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