

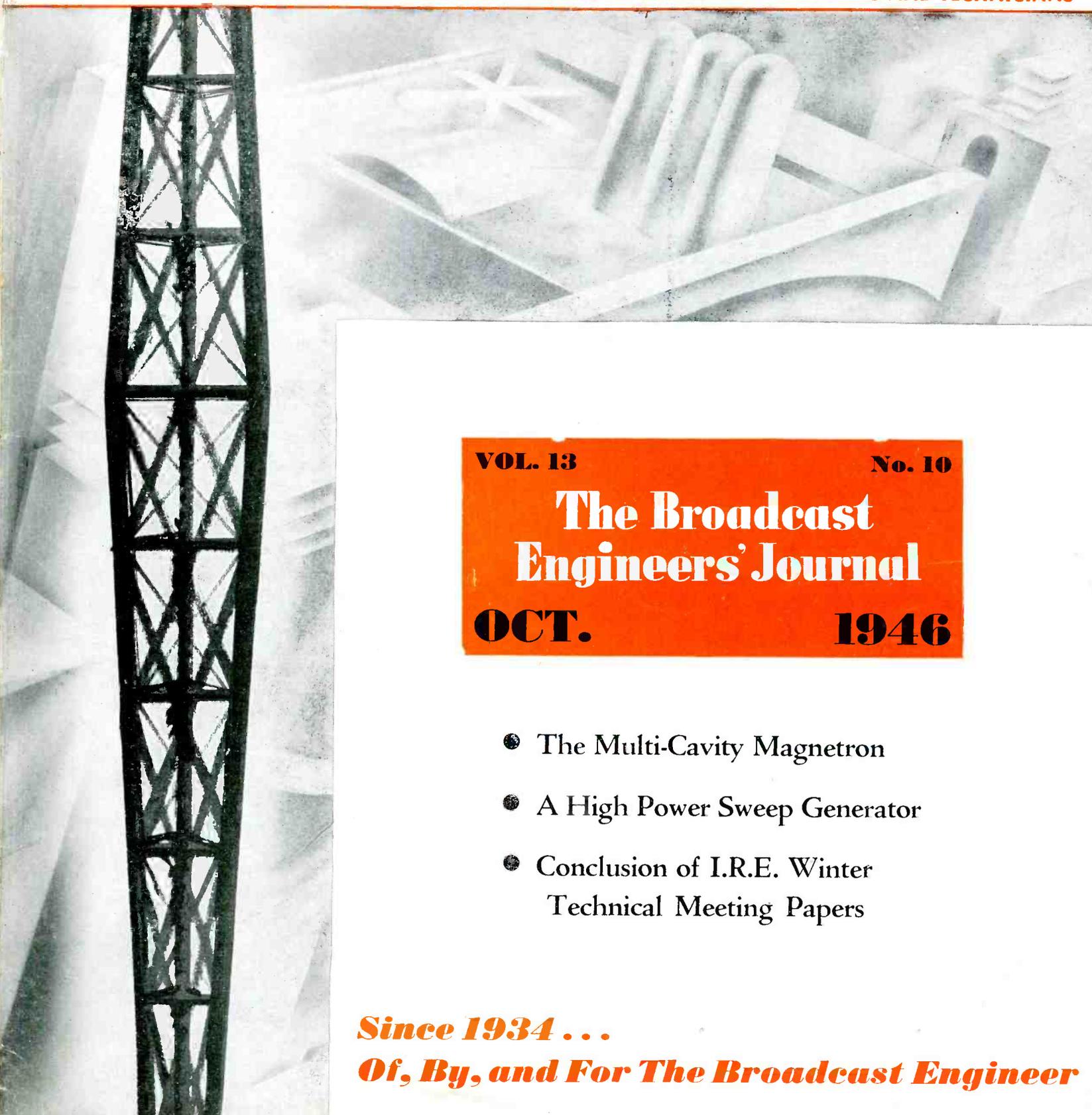
THE BROADCAST ENGINEERS' JOURNAL
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VOL. 13

No. 10

The Broadcast Engineers' Journal

OCT.

1946

- The Multi-Cavity Magnetron
- A High Power Sweep Generator
- Conclusion of I.R.E. Winter
Technical Meeting Papers

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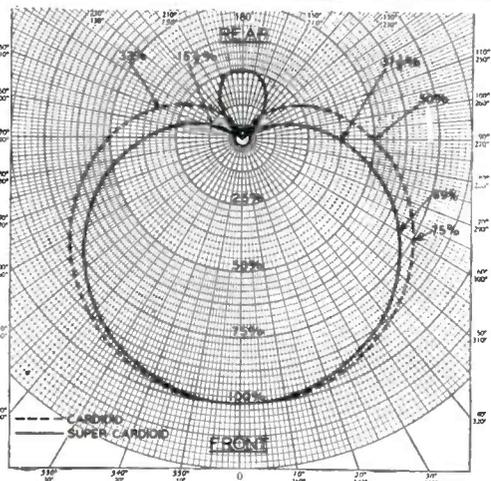
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Hollywood Chapter NABET General Meeting August 16, 1946

Bob Jensen Photo

First row left to right: Smith, Oborn, Vice-President La Croix, President Powley, Hollywood Chairman Brown, Caranchini, Wetteland. Second row: Onofrio, Baxter, Headrick, Otte, Leonard, R. Miller. Third row: DeGrazzio, Callen, Wilhelms, Wilmshurst, Binkey, Grinde, Peterson, Comegys, Adams. Fourth row: Reid, Hockin, Breure, Moloney, Hockin, P. Miller, Fritzingler, Lorenz, Brooke, McDonald. Fifth row: Dewes, Lea, Gage, O'Kelly.

NABET President Powley Visits West Coast

By Norman Dewes

THE Hollywood Chapter of NABET was pleased to welcome NABET President A. T. Powley on his recent visit to the West Coast, the first in five years and also his initial trip out this way since becoming head of the organization. Due to a late plane arrival, the customary California greeting for dignitaries, consisting of girls in bathing suits carrying orange blossoms, girls in Spanish costumes doing fandangoes, girls in grass skirts doing hulas, the U.S.C. Band and Leo Carillo on a horse was lacking, the reception committee having been narrowed down to one man, namely James Brown, Hollywood Chapter Chairman. Mr. Brown met Mr. Powley at the airport at one ayem and escorted him without ceremony to the Hollywood Knickerbocker.

Apparently the flight had been a dry affair, for Mr. Powley's first words on alighting were, "Where can I get a glass of beer". However, due to the lateness of the hour, beer was not readily available, although Brown and Powley spent most of the remainder of the night searching for it.

Time and pressing business did not permit many social events or night club souires during Mr. Powley's visit, at least none that can be reported, but there was that very enjoyable luncheon at the Derby, attended by Mr. Saxton and Mr. Pickett, NBC West Coast engineering heads, Mr. Palmer in like capacity for ABC, Messrs. Blatterman and Mason, chief engineers of KFI, Thor LaCroix, supervisor in charge of KECA and Nabet National Vice President and Jimmy Brown, Hollywood Chapter Chairman. Luckily no pictures of this event are available.

The highlight of Mr. Powley's visit was his attendance at the general meeting of the Hollywood Chapter, held Friday, August 16th, in the Lido Room of the Knickerbocker. After the usual preliminaries, Mr. Powley was introduced and proceeded to give forth with a very interesting and not unhumorous account of his recent journeying around the country on organizing expeditions. The report was interspersed with several exceedingly comical accounts of incidents and experiences at various stations, told in the

dry and laconic Powley fashion. He followed the stories with a discussion of problems in general which perplex the office of the national president, but concluded with the statement that he was exceedingly optimistic regarding the future of NABET and was looking forward enthusiastically to its immediate problems.

During Powley's stay in the land of milk and honeys, California weather behaved in true California fashion, with sunshine and balmy breezes each day, a situation which provoked Al to state that he wished he had a bucket in which to take some of the stuff back to New York with him, where "they could certainly use it".

The accompanying photos, by Hollywood Chapter Official Photog Robert Jensen endeavor to show the assembled conclave of engineers, some of whom are rather cut off, due to Bob's miscalculations regarding where the lighted matches were which the fellows on the outskirts were holding up to identify themselves. Also, Robert had an auto-

(Continued on Page Four)

President Al Powley visits Hollywood Chapter NABET



Left to right: Ross Miller, Hollywood Secretary-Treasurer; Jim Brown, Hollywood Chairman; NABET President Al Powley; NABET Vice-President Thor La Croix.

Bob Jensen Photo

NABET ACTIVITY

PRESIDENT POWLEY announces his reappointment of Mr. Harry Hiller as National Secretary-Treasurer of NABET for the ensuing year, in recognition of Mr. Hiller's splendid performance.

President Powley made a "Get Acquainted" tour and visited the Hollywood Chapter Aug. 13-17, attended Council and General Meetings, discussed general NABET matters and future plans. Similar meetings were attended Aug. 17-20 at the San Francisco Chapter, and Aug. 20-23 at the Denver Chapter. Aug. 23-27 at KOB Albuquerque—the latest addition to NABET's membership, contract negotiations were started. The next planned stop was the Chicago Chapter, but difficulty with negotiations with the Westinghouse group—WBZ—WBZA, KDKA, and KYW, made it necessary for Mr. Powley to return; on Aug. 22nd, NABET served a 30 day strike notice on the Westinghouse stations; Commissioner Douglas Byrd of the New York Conciliation Office has been appointed Commissioner and has set a meeting in Philadelphia for the week of Sept. 9th.

Mr. Hiller has completed negotiations and signed contracts at WWNY, Watertown, N. Y., and WMSA, Masena, N. Y. Mr. Hiller is next going to Detroit to renegotiate the WWJ contract, and to meet with our new NABET members at WXYZ, the American Broadcasting Co. outlet.

Mr. Allen reports negotiations with WFIL in progress, to be resumed Sept. 12th. Mr. Allen and NABET Attorney O'Donoghue visited ABCO officials on Aug. 16th on the WXYZ matter, and advised that NABET will furnish the engineers at WXYZ.

New NABET Chapter Chairmen elected: Mr. John Hogan, Washington, D. C., Chapter; with WRC since 1937; served as Lt. Commander, USNR, during the war. Mr. Clyde M. Reed has been elected Chairman of the Pittsburgh Chapter.

Employment Service—Members seeking employment should immediately contact the NABET National Office.

Deadline Notice—Copy must be placed in the mail in ample time to be delivered in Richmond Hill by the first of the month for the next following issue. Chapter Chairmen are reminded of the necessity of reading and initialing their Chapter Editor's copy before it is submitted for publication.

NABET 13th Annual National Council Meeting will be held as provided by the NABET Constitution during the month of October. The meeting will convene Monday, 9:30 a.m., Oct. 14th thru Friday, Oct. 18th, 1946, at the Brown Palace Hotel, Denver, Colorado.

POWLEY VISITS WEST COAST

(Continued from Page Three)

matic snapper rigged up on the camera but something went wrong with the deal and Bob also was included out. The four-shot of the dignitaries turned out better, but you should have seen the ones who got away.

Powley, who used to visit this coast as a shipboard radio operator years ago, and who was last out this way in 1941 to attend the Nabet National Convention held in San Francisco that year, left by plane Saturday following the Hollywood general meeting. He planned to make stops at San Fran, Denver and Albuquerque on the way home,

and his final statement before boarding the plane was "Where can I find a glass of beer".

We, of Hollywood, cordially invite Prexy Powley to visit us again and at any time he can manage it, and promise next time to steer him around a bit.

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- 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
Harry C. Hiller
Nat'l Sec'y-Treasurer

66 Court Street
Brooklyn 2, N. Y.

Thor E. LaCroix
Vice President
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Hollywood 28, Calif.

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

Charles L. Bennis
Apt. DA-2
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Kew Gardens 15, N. Y.

Harold V. Brandt
P. O. Box 68
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James H. Brown
6000 Sunset Boulevard
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Roger K. Ellis
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John H. Hogan
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William Justin Flanders
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C. Edward Jung
1405 Carswell Street
Baltimore 18, Md.

John R. McDonnell
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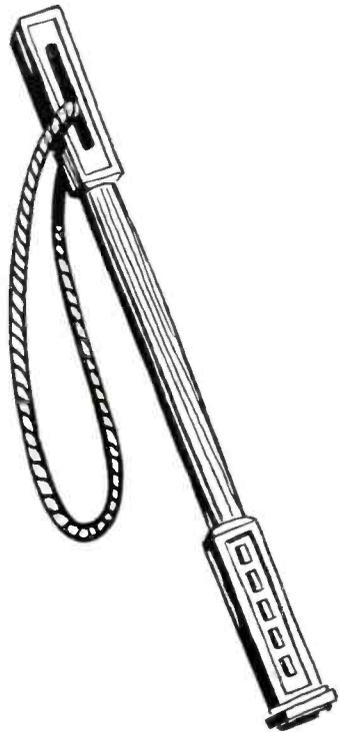
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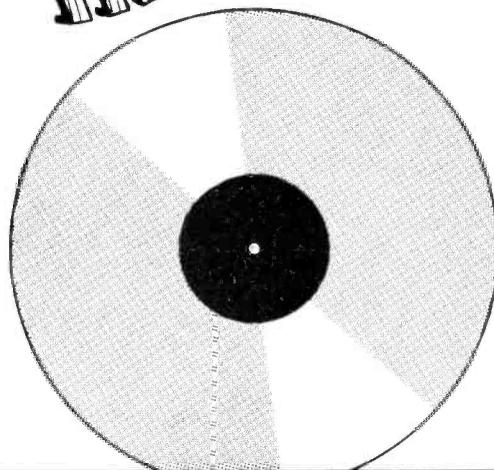
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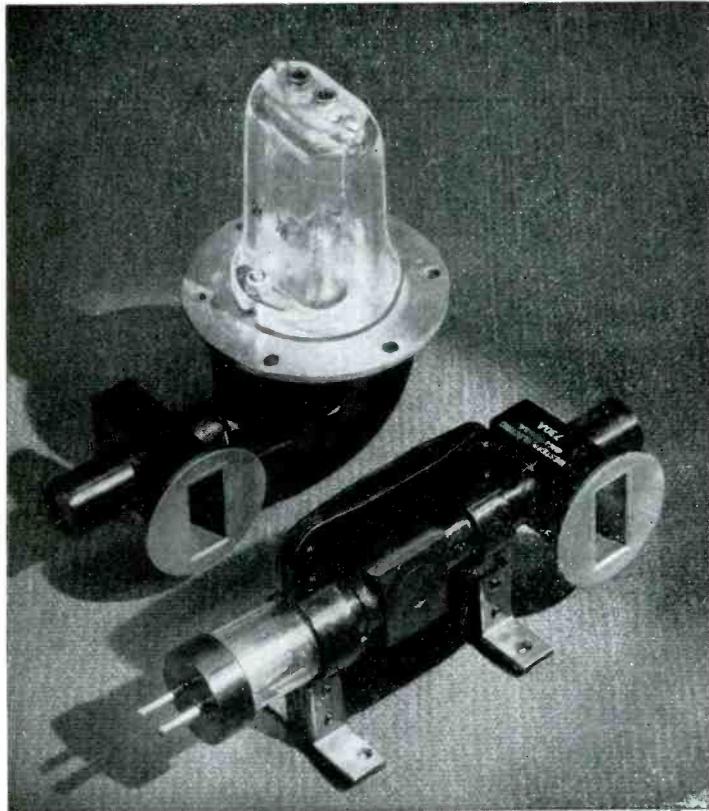
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The Multi-Cavity Magnetron

A High Power Generator for Radar*

THE superiority of United Nations radar was due in large measure to success in outdistancing the enemy in the utilization of wavelengths of less than 50 centimeters—popularly known as “microwaves.” These very short waves provided the narrow beams, accuracy and target discrimination needed in precision fire-control and bombing. Early radars operated on waves more than a meter in length; progress toward shorter waves was severely limited by the absence of means for generating them at the high-power level that is required.

Then came the multi-cavity magnetron which could generate powerful pulses of waves in the centimeter region. It made possible the reduction of operating wavelengths to 10 centimeters and by the end of the war to well under



Western Electric 725A and 730A. Three-centimeter magnetrons using external magnets. The 725A magnetron was used widely in Navy airborne radars and the 730A in Army radars during the bombing of Japan.

3 centimeters. The development and perfection of this type of tube in Britain and the United States was therefore one of the outstanding engineering feats of World War II. In that work the Laboratories played a leading part, particularly in developing the tube to operate at the higher frequencies that were desired and in adapting it to large-scale production.

The multi-cavity magnetron embodies within a single envelope a complete radio transmitter except for power

supply and antenna. The inductance and capacitance which constitute the oscillating circuit are supplied by resonant cavities, as shown in Figure 1. The inductance is centered mainly in the wall of the circular portion of the cavity and the capacitance in the walls of the slot. Each cavity, there-

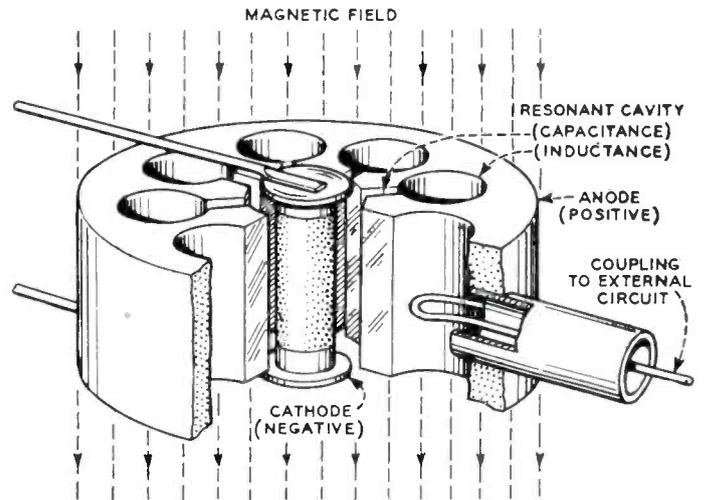


Fig. 1—The magnetron embodies within its envelope a complete transmitter except for power supply and antenna.

fore, behaves like an inductance and a capacitance connected in parallel; the combination oscillates at a frequency which depends on the dimensions of the cavity and is the operating frequency of the tube. When the tube is in operation, electrons from the oxide-coated cathode circulate past the slots in such a way as to induce oscillating currents around the walls of the cavities. Through a coupling device in one of the resonators, the high-frequency energy is conducted into an output circuit and fed to an antenna through either a concentric cable or a wave guide.

The exact process whereby the electron stream interacts with the cavities to set them in oscillation is too complex for full description in this article, but the broad features may be seen from the following considerations. The electrons are pulled toward the anode by the positive potential; they are also swept sideways around the cathode by the magnetic field which acts downwards, see Figure 1. Under the combined action of the electric and magnetic fields, the electrons are driven along curved paths across the front of the slots. Some of the electrons are swept back to bombard the cathode and this results in the emission of more electrons, a factor which contributes greatly to the very large currents which are drawn from the cathode. Other electrons strike the anode and so pass out into the plate circuit.

For each resonating cavity, one wall of the slot (plate of the resonating capacitance) is always electrically positive when the other is negative. Also the potential between the walls of a particular slot is at any instant the reverse of that for the adjacent slot. As the electrons approach a region of negative potential, they are repelled and slowed down while those behind approaching a positive potential are attracted and speeded up so as to close in on those in

* Reprinted by permission from the Bell Lab Record, June, 1946.

front. Thus the electrons do not proceed as a uniform stream, but collect into clouds so as to produce a pattern like the spokes of a revolving wheel in which the spokes represent maximum concentrations of electric charge as shown in Figure 2. Each revolving cloud constitutes a surge of current which induces a corresponding surge of current around the walls of a cavity as it passes by. Phase relationships between the electron clouds and the resonating cavities are such that there is a net transfer of energy to the cavities.

In magnetrons used to produce radar pulses, the voltage is applied and the tube oscillates for only a few microseconds at a time, during which the cathode delivers many times the current level normal in other uses. Between pulses the tube remains idle for several hundred microseconds, during which heat is conducted away by the metal enclosure. It is therefore able to generate for short periods enormous amounts of power relative to its size. One high-power L band magnetron delivered 6 microsecond pulses of 1,000 kw with a current of 60 amperes and a plate potential of 30,000 volts.

Why a magnetron is a more favorable device for generating high-power energy at higher frequencies than the conventional vacuum tube appears from the following considerations. As is well known, the higher the frequency of operation of a circuit, the smaller the circuit elements become. This is also true of vacuum tubes. By the time that a conventional tube has been made small enough to operate in the centimeter wave region, it is too small to have any power-generating ability. Another consideration is that the

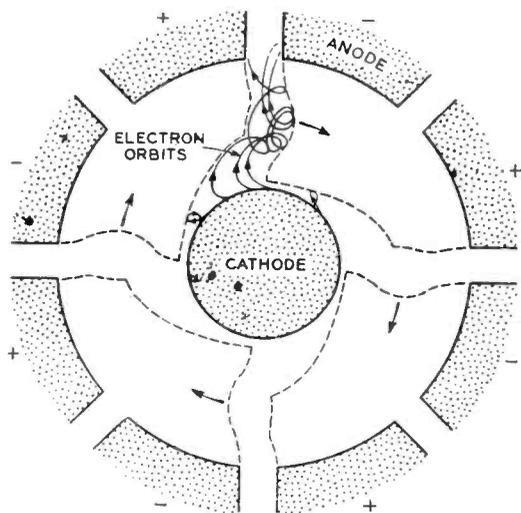


Fig. 2—Calculated configuration of space charge clouds in a magnetron. Curved lines represent electron paths as viewed by an observer travelling with the cloud. Based on the British Committee on Valve Development CVD Report, No. 41.

time of travel of the electrons from the cathode to the plate needs to be reduced as the frequency of oscillation rises. Transit time can be decreased by employing smaller distances and higher voltages. But in a triode the combination of higher voltages and the smaller spacings becomes impractical at centimeter-wave frequencies.

In a multi-cavity magnetron the frequency-determining elements are provided by the electrodes inside the vacuum envelope. Moreover, the transit time of the electrons does not limit the operation of the magnetron in the same manner as in a triode. Using the magnetron principle, it is, therefore, physically possible to have structures of sizes which are able to oscillate in the centimeter wave region and also able to generate considerable power.

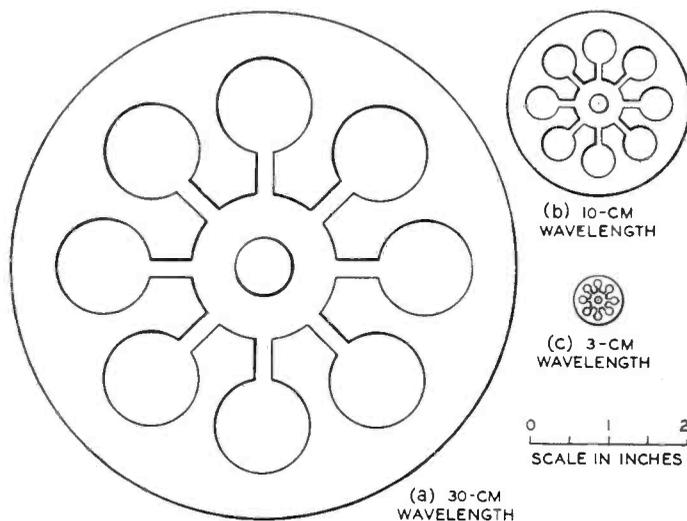
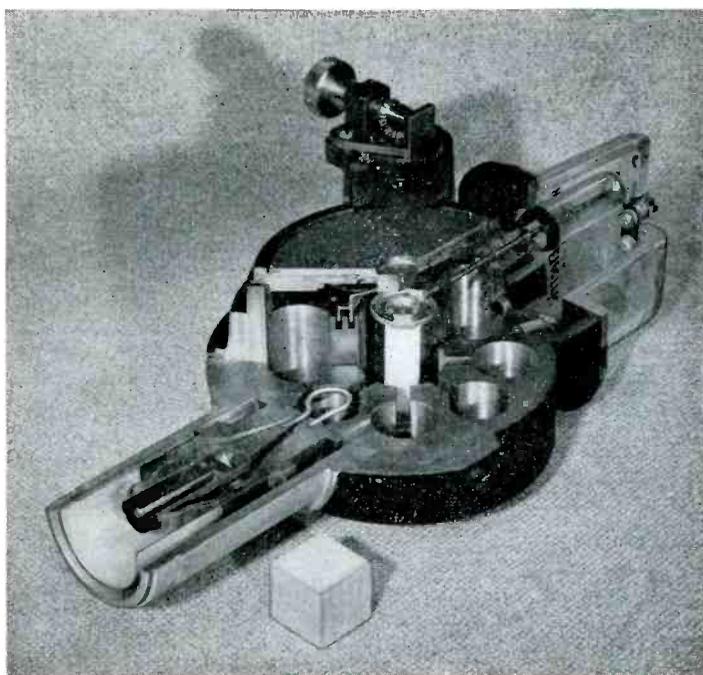


Fig. 3—Relative size of electrode systems in 30-, 10- and 3-centimeter magnetrons.

Even so, the magnetron is itself no exception to the rule of decreasing size with increasing frequency of operation, as may be seen from Figure 3, which illustrates the relative sizes of the cathodes, anodes and cavities for wavelengths of 30 cm, 10 cm and 3 cm. Thus for the magnetron as for the triode there is an upper limit on the frequency of operation beyond which it is no longer a practical device. The magnetron, however, has the advantage of taking off from a higher frequency base than the triode. There is no inherent reason why a magnetron should not be used at low frequencies, except that the resonant cavities would be of unwieldy size. In practice triodes are advantageous down to approximately 45 cm and magnetrons for shorter wavelengths.

A limitation on multi-cavity magnetrons that should be noted is that they are essentially fixed-frequency devices and are not adaptable to tuning over as wide a band of

(Continued on Page Nine)

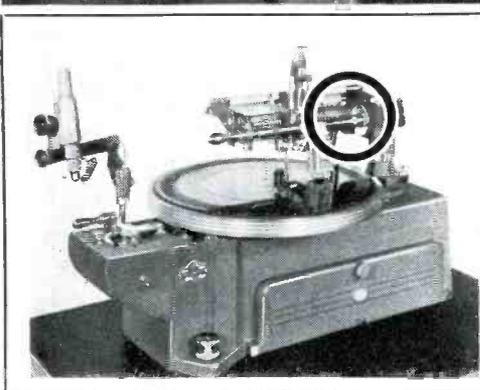
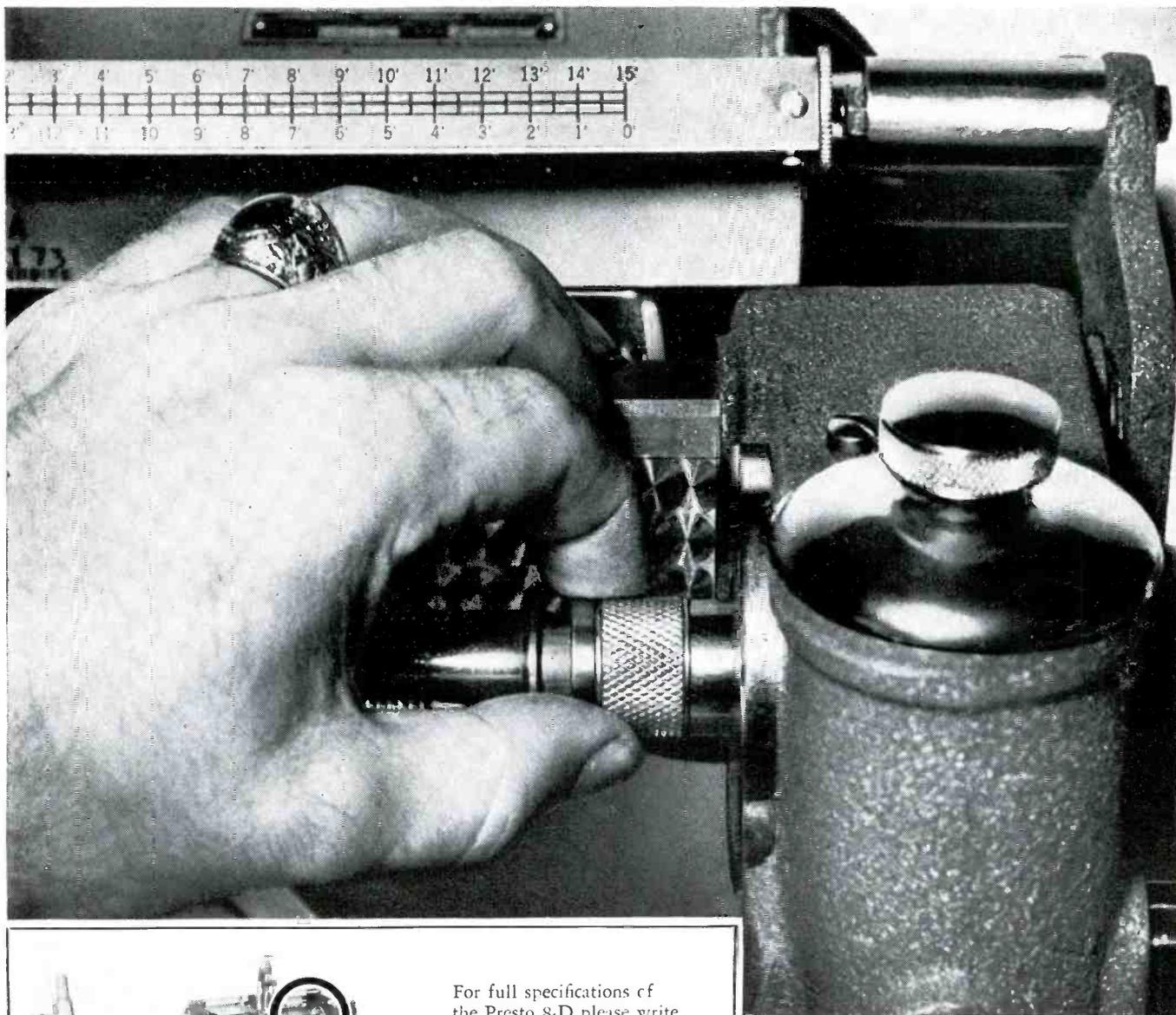


Cut-away model of the Western Electric 4J51 showing complicated internal structure.

change pitch and direction almost
instantaneously with the improved
Presto 8-D Recorder

The Improved Presto 8-D Recorder is equipped with a reversing device for the feed screw. Result: Six feed pitches, inside-out *and* outside-in, using only one feed screw. This feed screw need never be removed from the recorder. Thus, changes in pitch and direction are accomplished within a matter of seconds.

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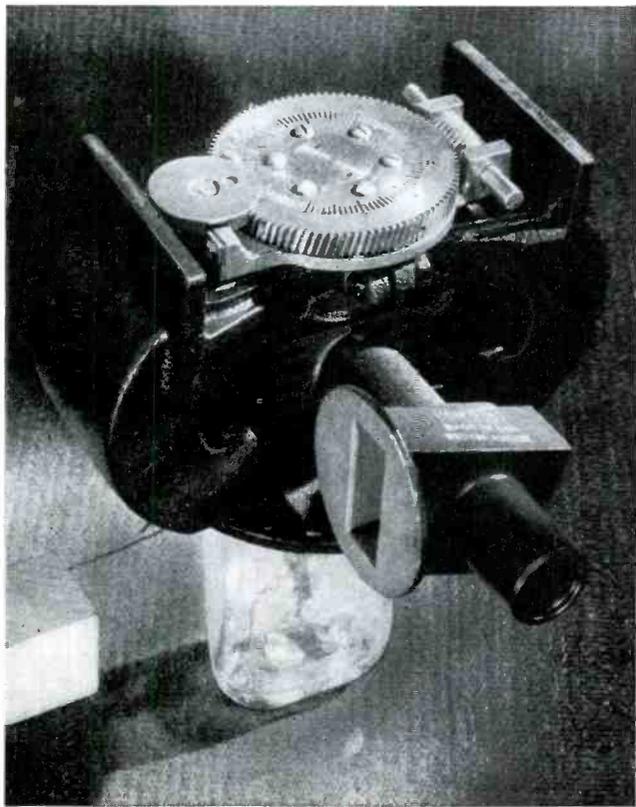
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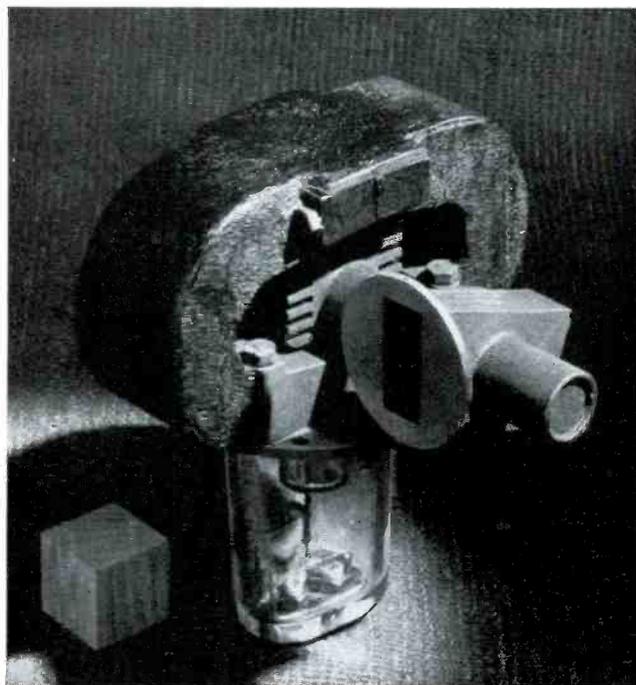
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A three-centimeter magnetron (Western Electric 2J51) with integral magnet and tuning gear (shown at the top)



(To indicate relative sizes, a one-inch cube block is shown with these magnetrons)



A three-centimeter wavelength magnetron (Western Electric 2J55) with integral magnet and wave-guide output connection.

The properties of magnetrons and resonant cavities were known long before the war. In Great Britain the multi-cavity magnetron underwent intensive development for radar. A model was brought to the United States in October, 1940, and was duplicated at Bell Telephone Laboratories in about one week. A tribute to the wide knowledge and experience in the electronic field of telephone scientists and the facilities of their laboratories. Almost immediately additional models were made available to the Laboratories' engineers, who were working on radar for the Army and Navy, and to the Radiation Laboratory of the National Defense Research Committee which was then getting under way.

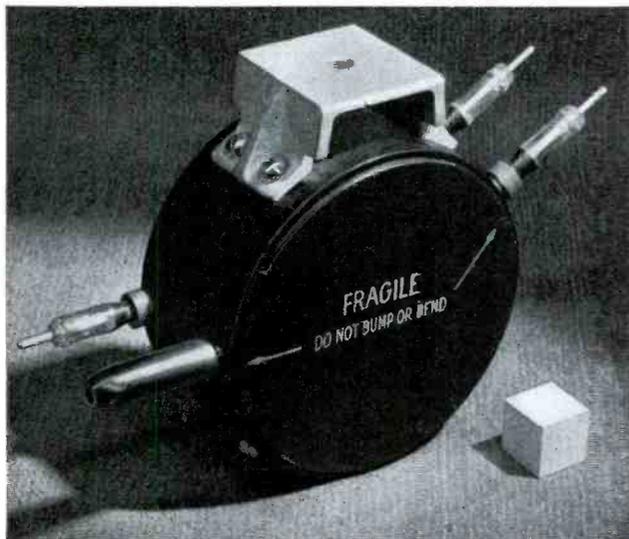
A sizable development group of physicists, electrical engineers, mechanical engineers and chemists was organized to

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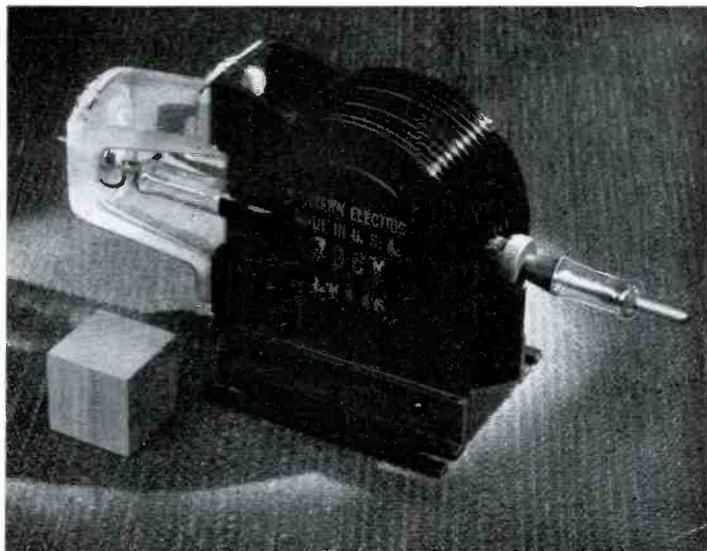
MAGNETRONS

(Continued from Page Seven)

frequencies as triodes. This comes about because the frequency-determining elements are inside the vacuum envelope and it is difficult to make extensive changes in the capacitances or inductances. However, limited tuning adjustment through vacuum seals has been incorporated in several magnetron designs.



The first magnetron produced by the Western Electric Company. This is the 700A operating at 45 centimeters.



A ten-centimeter low-power magnetron (Western Electric 706Y)

A HIGH POWER SWEEP GENERATOR

By Ed Rigby
Music Hall, Detroit, Mich.

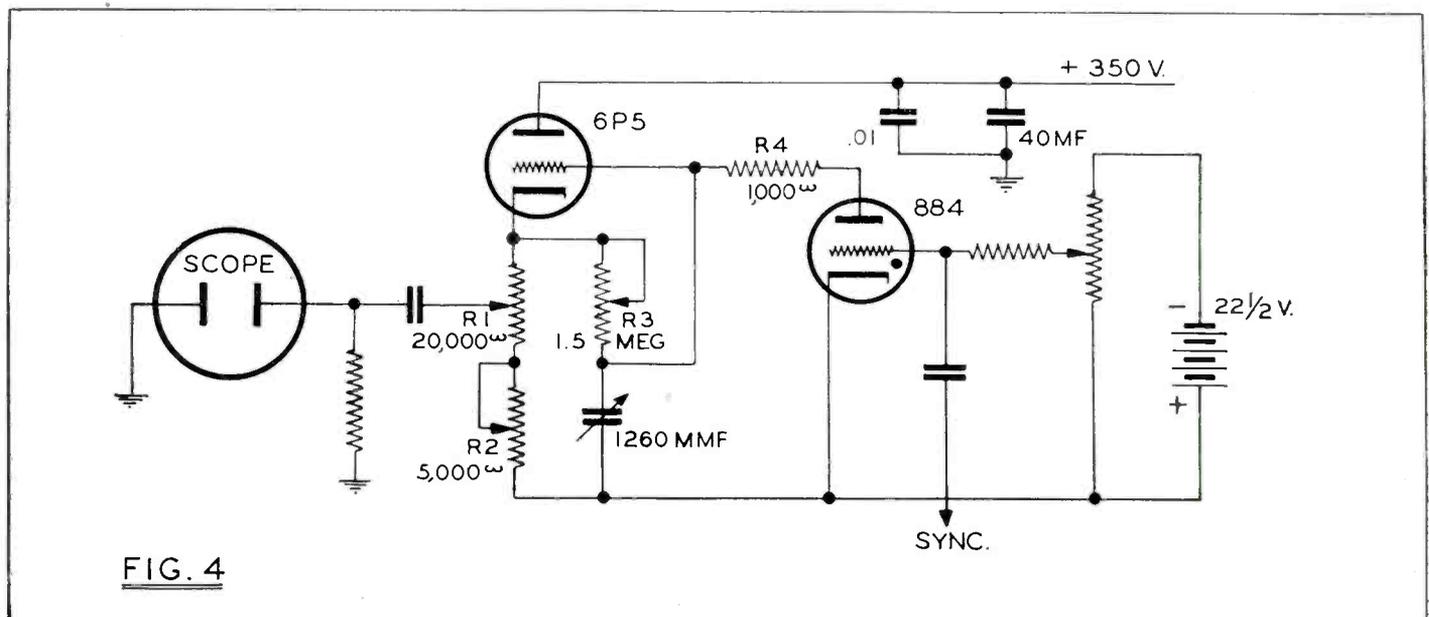
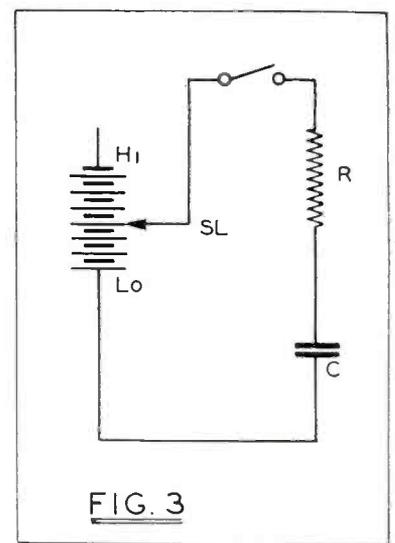
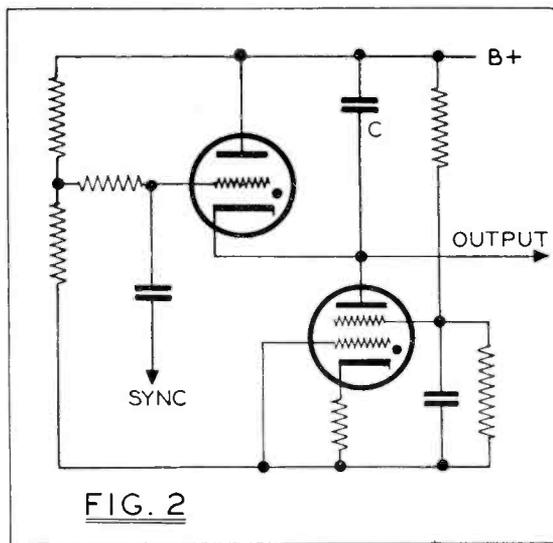
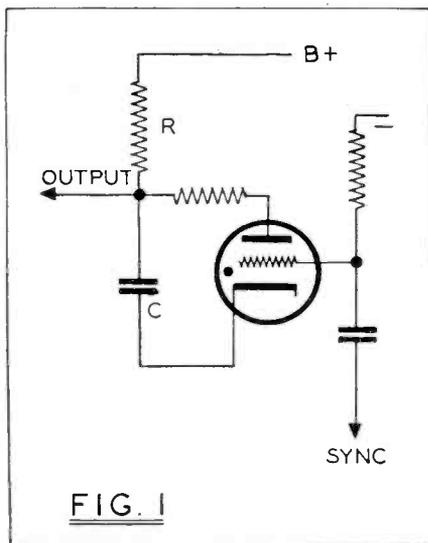
WHILE engaged in the task of rebuilding a radar indicator unit into a general purpose oscilloscope the writer became involved in the problem of trying to improve the sweep generator circuit. Variations of the two usual types of circuit were tried such as in figures 1 and 2. Figure 2 using a constant current element instead of a resistor gave fairly good results but both of these methods generate low output sweeps and require a bank of condensers to operate throughout the required frequency range. Abandoning these setups and groping around for something new the idea of charging an RC circuit from a gradually increasing voltage source seemed intriguing. Referring to Fig. 3, if the slider SL is moved from lo to hi while C charges it is seen that C will be charged at a linear

rate and also the RC time constant of the circuit will be increased enormously. SL would have to be advanced at a rate faster than C's charging rate.

Many wild schemes were dreamed up and a few of them tried in an effort to put this idea to work. Finally the circuit in Fig. 4 evolved. The battery of Fig. 3 is now replaced by the IR drop across R1, R2, of Fig. 4. R and C of Fig. 3 becomes R3 and C of Fig. 4.

The voltage changing action of slider SL in Fig. 3 is now the grid control property of the 6P5 triode.

Forgetting the 884 gas triode for the moment:—if we were to place a short across C of Fig. 4 and turn on the plate voltage the current through R1, R2 would rest at a value determined by the characteristics of the tube 6P5



and the total grid bias would be equal to the IR drop of R1, R2. In the case shown the current would be approximately 1 MA and the grid bias -25 volts. Our cathode drop is now 25 volts. We now remove the short across C and allow it to charge through R3 starting at a 25 volt rate. As C charges, the grid of 6P5 rises with it in a positive bias direction until finally the tube will reach a condition of zero bias with maximum current determined by the resistance R1, R2, in this case about 11 MA and a 275 volt drop across R1, R2. From the above it is seen that we have a range of about 250 volts. We now connect the 884 gas triode in the circuit and adjust the bias to fire on a plate voltage somewhat less than 275 volts. Assuming the extinction voltage of the 884 to be 15 volts we find that the condenser C will charge up during the cycle from a minimum value of 15 to a maximum of somewhat less than 275 volts.

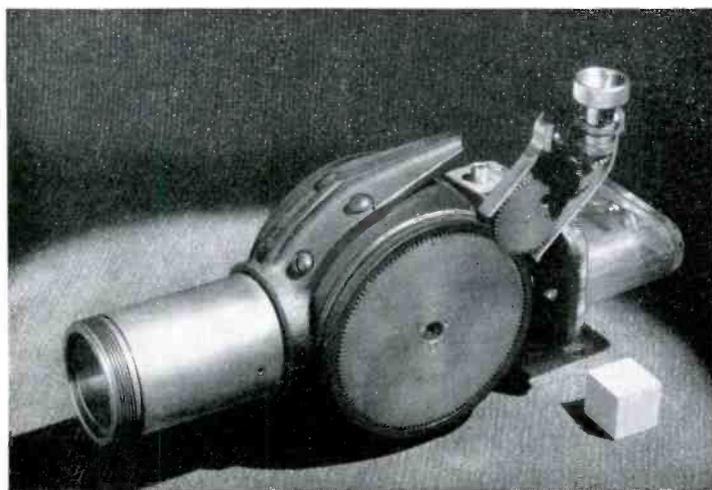
The circuit in Fig. 4 was built up on a breadboard and used to sweep a 3 inch scope as shown. The 6P5 was the lowest Mu triode available and better success might be achieved by another choice of tube in this position, possibly a 6AE5.

Very husky pots for R1 and R2 are necessary as considerable power is present in the cathode circuit. Do not use inductively wound pots in either R1, 2 or 3 positions. The value of R4 is determined by the safe maximum and average current limitations of the 884. Increasing its value will result in longer back-sweep time. The condenser C is an

ordinary 3 gang broadcast receiver type variable and the one used in Fig. 4 measured 1260 mmf on a bridge. C and R3 may be ganged together. With the values shown for R3 and C a frequency range from 60 cycle to 100 Kc was obtained. Adjustment of R2 or the 884 bias voltage will affect frequency and amplitude. These may be screwdriver controls. Sweep amplitude is adjusted by the slider of R1 and has no effect on the circuit. No change in amplitude is noticeable in a complete excursion of the frequency range and the sweep will lock-in solidly from point to point with no other adjustments than R3 and C. Sufficient sweep was obtained to wrap all around a 3 inch scope. An unregulated power supply was used for B voltage and strangely enough no trouble was encountered in locking in ratios as high as 100 to 1. A 100 Kc sine wave could be made to look like a fine tooth comb. A 40 mf electrolytic in addition to a .01 mica was used to shunt the 6P5 plate. Sync voltage is not critical. As can be predicted from the characteristics of a triode there will be a departure from linearity at both ends of the sweep. This proves to be the case in actual practice. The ends of the sweep can be shaped by adjustment of R2 and changing the bias of the 884. The bias in this setup was in the neighborhood of 18 volts. The results outlined above were obtained from a breadboard layout. Watch out for interference from the heavy impact excitation of the 884 discharge circuit. If a very old variable condenser is used in this circuit the plates should be cleaned off thoroughly to avoid low power factor.

MAGNETRONS

(Continued from Page Nine)

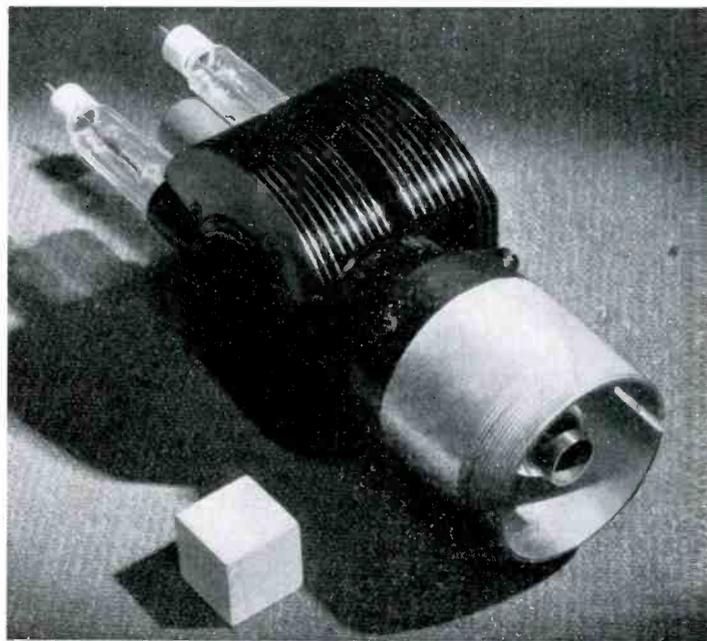


A thirty-centimeter high-power tunable magnetron (Western Electric 4J51)

study the tube and exploit its possibilities. Throughout, the Laboratories worked in close cooperation with the Western Electric, whose long experience, not only in tube manufacture, but also in the mass production of precision parts, paid a rich dividend. There had to be means of brazing vacuum-tight joints in the metal enclosures without introducing damaging impurities. There had to be large-scale production methods for machining the electrodes to meet the critical tolerances on the frequency-controlling dimensions of the resonant cavities, especially with the tiny cavities required for the shorter wavelengths. (See Figure 3.)

* Bell Lab. Record, May, 1946, page 201.

The first magnetron to be used in a centimeter-wave radar system by our Navy for fire-control was the Western Electric 700A, which was employed in the famous night engagement of the cruiser Boise and several other ships off Savo Island when six Japanese warships were sent to the bottom.* In all, seventy-five Western Electric coded designs were developed, ranging from 45 cm to less than 3 cm, and from 10 kw to more than 1,000 kw.



A ten-centimeter high-power magnetron (Western Electric 720A) with concentric line output connection.

Television Activity

The following experimental television stations were granted renewal of licenses for the period ending Feb. 1, 1947: W2XVT, Allen B. DuMont Labs., Inc.; W10XAD, W10XAE, W10XAF, Philco Products, Inc.; W2XJT, Jamaica Radio Television Co.

WBAF, Metropolitan Television (New York) and W2XMT: ownership transferred from Abraham & Straus, Inc., and Bloomingdale Bros., Inc., to Hirschmann Broadcasting Corp., for \$106,000.

Crosley Corp., Dayton, Ohio. CP for commercial television on Channel 5, 76-82 Mc.

Crosley Corp., Columbus, Ohio. CP for commercial television on Channel 3, 60-66 Mc.

Crosley Corp., Cincinnati, Ohio. CP for commercial television on Channel 4, 66-72 Mc.

American Broadcasting Co., San Francisco. Commercial television CP amended to Channel 5, 76-82 Mc.

Wm. Penn Broadcasting Co., Philadelphia. CP for commercial television on Channel 6, 82-88 Mc.

Westinghouse Radio Stations, Inc., Boston. CP for commercial television on Channel 4, 66-72 Mc.

Albuquerque Broadcasting Co., Albuquerque, N. M. Granted request for call letters "KOB-TV"—KOB being their standard broadcast call letters.

Bendix Aviation Corp., Radio Div., Towson, Md. CP for experimental television 600-620 Mc., 100 watts peak.

Balaban & Katz, WBKB, Chicago. CP to change frequency from channel 2 to 4, 66-72 Mc.

CBS—New York, WCBW, Modification of license to specify channel 2, 54-60 Mc.

St. Louis University, St. Louis, Mo. CP for experimental television in the 480 to 920 Mc band, 1 kw peak.

Minnesota Broadcasting Corp., Minneapolis, Minn. CP for commercial television on channel 4, 66-72 Mc.

WBEN, Buffalo, N. Y. CP for television on channel 4, 66-72 Mc. 14.4kw video peak power.

FM to Date

FCC Public Notice 97432: The Commission en banc today amended Subpart B of Part 3 of its Rules, so as to add subsection (c) to Section 3.204 to incorporate the policy stated in Commission Order of July 17, 1946, withholding from assignment one out of every five Class B FM channels tentatively indicated as available to an area, for the period ending June 30, 1947.

Subsection (c) to Section 3.204, Part 3, Subpart (b), reads: "(c) For the period ending June 30, 1947, one out of every 5 Class B channels tentatively indicated as available to an area shall be withheld from assignment: Provided, however, that the withholding shall apply only to those areas to

which at least 5 Class B channels have been so assigned."

The FM Box Score as of August 1, 1946:

Stations Licensed	48
Construction Permits	191
Conditional Grants	487
Applications in Hearing	158
Applications Pending	208

Trade News

The Massachusetts Steamship Lines have installed a G.E. "magic pilot" radar on their excursion steamer operating on the 100 mile round trip run between Provincetown and Boston.

Ralph C. Powell, formerly General Sales and Advertising Manager of the Presto Recording Corporation, has resigned to engage in business under the name of R. C. Powell & Co., Inc. The company will handle national distribution of a number of electronic devices.

The Presto Recording Corp. announced the appointment of Mr. Thomas B. Aldrich as General Sales and Advertising Manager to succeed Mr. R. C. Powell. Mr. Aldrich has been with the company for the past ten years as factory sales engineer, spent two years in the Army as Captain, and attended Cornell University.

Halicrafters' home receiver Model EC-112 features a rubber mounted chassis installed through the bottom so that the cabinet is completely enclosed and attractive from front, rear, and sides; may be placed anywhere in the room.

Allied Radio Corporation announces the release of their new RMA-JAN Color Code Guide for radio and electronic type resistors. Very simple in operation. Three rotary discs are provided for setting the code colors and corresponding resistance values which are brought into alignment automatically. Code colors may be set to show corresponding resistance values, or resistance values may be set to show corresponding code colors. In-



cludes data covering resistance tolerance and complete listing of RMA-JAN 10% resistor stock values. Saves time and prevents error. For students, experimenters, servicemen, amateurs, maintenance men, engineers, etc. Available at a price of ten cents (10c) from Allied Radio Corp., 833 West Jackson Blvd., Chicago 7, Illinois.

Subject to FCC approval, Globe Wireless and International Business Machines Corp. have transferred to the G. E. Co. permits to construct and operate experimentally three stations in a Schnecktady to New York microwave radio relay network, intended as a carrier for television, FM, facsimile, and business machine circuits.

The first GE postwar FM transmitter to be delivered on the West Coast has been placed in operation on Mt. Wilson for KFI-Earle C. Anthony, Inc. Rated at 250 watts, it will serve as the exciter unit for the final installation, to be rated at 3 kw.

Alaska has suffered poor telephone service due to lack of telephone lines. FCC has licensed Alaska Radio, Inc., to provide radio-telephone service to link Juneau, McGrath, Fairbanks, Kodiak, Homer, and Cordova at first; other locations will follow until all of Alaska is provided with communications. Jefferson-Travis equipment.

Terminal Radio Corp. of 85 Cortlandt St., N. Y. C., has received a shipment of sixteen inch dual speed recorders and portable phonographs which were flown into New York by air freight; they arrived in good condition.

GE Co. has made available "Transmitting & Industrial Tube Quick Selection Booklet, ETX-10" containing characteristics, ratings, prices; available from GE tube distributors or on request from Tube Division, Electronics Dept., G. E. Co., Schenectady.

The Daven Company of 191 Central Avenue, Newark, N. J., announces the appointment of Llewellyn Bates Keim as Field Electronics Engineer. Mr. Keim, a New Yorker, and a Harvard graduate in the physical sciences and communications engineering in particular, brings to his new job wide and varied experience in the radio and electronics field. He has held positions as engineering consultant, doing special apparatus design and construction, broadcast station design, layout and installation and he was for more than a year chief engineer and operating head of the Muzak Radio Broadcasting Station, WGYN (W47NY), one of New York's early FM broadcasters. For the past several years Mr. Keim has been associated with such companies as Thordarson Electric Manufacturing Company and the Kyle Corporation in the capacities of sales engineer and sales manager in the electronics and audio frequency fields. He is a member of the Radio Club of America and a former Secretary and member of the Institute of Radio Engineers. He is also well known among the radio "ham" fraternity as operator of amateur station W2IKV.

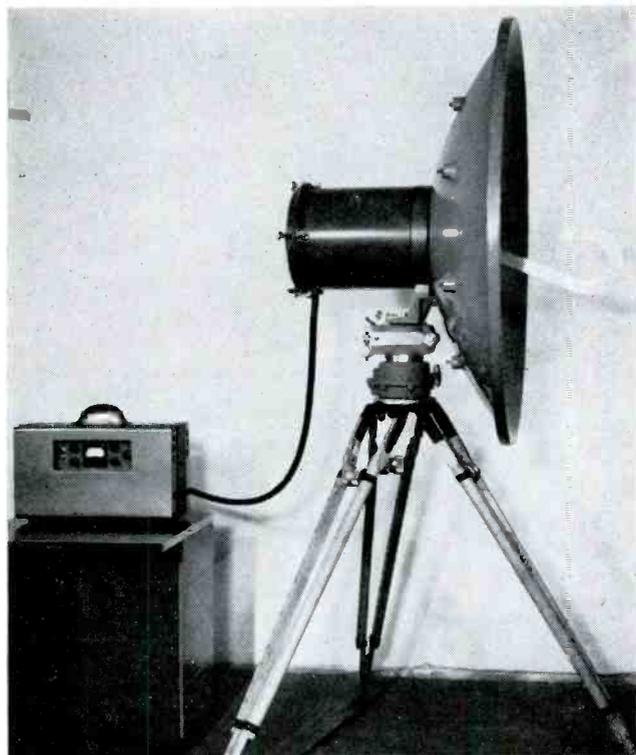
—Ed. S.

Latest Microwave Television Relay Link Equipment

THE new portable RCA microwave link equipment (Transmitter Model TTR-1A and Receiver Model TRR-1A) is designed for highly directional, wideband relaying of television pictures from a remote pickup location to the studio, or from the studio to the station transmitter, by means of high-frequency radio instead of special wire or coaxial lines.

Under normal conditions, this relay equipment has sufficient power for line-of-sight transmission over a distance of 10 to 15 miles with a high signal-to-noise ratio.

This new radio relay equipment produces a frequency-modulated signal with approximately 100 milliwatts of power for the picture carrier. The band width permits reproduction of the finest detail in the camera picture. It



Transmission of television programs from a remote location to the studio or from the studio to the station transmitter by means of a highly-directional, wideband radio link is made possible by this new RCA microwave equipment. Weather-proofed cylindrical unit at back of parabolic reflector houses either link transmitter or receiver, which is monitored by suitcase-type control unit at left. The hook-shaped wave guide "pours" the video signal into the center of the reflector, amplifying the output 9000 times. The receiver unit, closely resembling the transmitter unit, reverses this process, again multiplying the signal strength 9000 times as the signal is fed from reflector to wave guide. The overall amplification is 81,000,000 times.

operates at any selected frequency in the 6,500 to 7,050-megacycle band.

The use of a highly directional parabolic transmitting antenna provides a signal gain of about 5,000 times, with a 4-foot reflector, or 11,500 times with a 6-foot reflector, thereby providing an equivalent power of 500 or 1,150 watts, depending on reflector size, in the direction of the receiving antenna. To obtain this high gain, a hook-shaped wave guide literally pours power into the focal point of the saucer-like reflector, much as the filament in an automobile headlight sends its light to a concave reflector for intensification. The same principle is employed at the receiver unit, where the parabolic reflector receives the signal and concentrates the beam into a wave guide to add another gain of 5,000 or 11,500 times. The total effective signal gain from the transmitter wave-guide to the receiver wave-guide is therefore approximately 25,000,000 times with the smaller reflector or 132,250,000 times with the larger one.

The parabolic reflectors are attached to tripods with rotatable mountings which have calibrated scales, permitting adjustment over wide vertical and horizontal angles. Proper alignment of the reflectors is made by scanning for maximum signal strength and then locking the units in position. All mountings must be high enough to provide a direct line-of-sight path from the transmitter antenna to the receiver antenna.

The transmitter and receiver components are enclosed in a weatherproof cylindrical housing which is attached to the rear of the parabolic reflector. The transmitter housing contains a klystron-type oscillator, a modulator, the d-c insertion circuits, a wavemeter, and a crystal monitor. The receiver unit contains the preamplifier circuits, made up of a heterodyne oscillator, a crystal detector, and the first four IF stages. Additional amplification takes place in a separate control unit, which receives the preamplified signal through a connecting coaxial cable.

The control unit of the microwave receiver, which is usually located at some distance from the antenna, is mounted in a small carrying case containing the remainder of the receiver stages, the video unit, an automatic frequency-control amplifier, and a master meter, as well as other adjustment controls. The transmitter control unit is also built into a carrying case. It contains all the necessary operating and monitoring controls, plus a regulated power supply for transmission. Either of these control units can be removed from its carrying case and mounted in a rack for permanent installations.

The control unit plugs into the transmitter or receiver component by a single cable which is identical to that used with the field camera. This cable contains three coaxial lines and 21 other wires providing for all signal, control, power, and communication circuits. This cable makes it possible to place the parabola at remote positions as far as 1,000 feet from the monitoring control units.

All the units are compact and relatively light in weight, and can be disassembled into easily portable items. To set up the equipment for field use, it is only necessary to connect the various units by means of the single plug-in type cable and make necessary antenna adjustments.

FROM DIXIE

By D. Gordon
McCrary

WELL! Here we are after another month's absence. So Solly Yours Truly slipped up and missed last month, but I was uh, that is uh . . . Well, I was going to, but uh . . . Well, you see, ok, ok, so I sat around and let the new deadline catch up with me, or, should I say get ahead of me . . . Sumthin' like that. Nevertheless, here we are even though we have nothing to say. About the only thing I can think of right off is on myself, and I don't dare put it in this journal, my wife reads it too, in fact, she reads it before I do. She has been after me to take her application for membership on an inactive status and is especially interested in the monthly article headed "NABET Activity," then she turns to the "Dixie" news to see if Ed Stolzenberger is publishing this stuff as I write it. (There seems to be some doubt in her mind as to whether I can write . . . Wonder what originated such an idea???)

In mentioning the Article "NABET Activity" brings to mind an incident which happened to me recently . . . Since the August issue to be exact . . . An IBEW friend of mine (Frank Howell) who is a first-class electrician, came in and picked up the journal and proceeded to read "NABET Activity". After reading this article he proceeded to rake me over the coals . . . The argument is still going strong, therefore I can't claim any victory yet. He seems to think there is a mistake somewhere, his contention is that no good electrician is going to try to support activities of that nature. Well, you read the article which is self-explanatory. To go on with the story . . . I approached this friend to wire my garage for me in order to start construction on my ham rig. While asking this favor I noticed he was all smiles, and then he really proceeded to rake me down . . . His final analysis was that "no IBEW snake" would become entangled with any job on which a NABET man was working, I could get some of my "NABET Brethren" to do any wiring I might wish to have done . . . Will some of you guys lend a hand?

Just a few words into the doings at the transmitter (WPTF) . . . Information picked up on a recent visit there is that Nick Pieler spent his vacation papering a house (I have a room which needs papering Nick, when do you have another long week-end off?). Lovelace Evans, Yes I said L-O-V-E-L-A-C-E (Sam's right-hand man) planted corn, but not of this variety, nor Chicago corn by a cob reporter. Sam Liles' trip was featured by fast horses and Sloe Gin. W. H. Franklin (Sam's left-hand man) spends all of his off-time trying to keep his wrinkled-fendered Chevrolet running, every time he takes it on the hiway some cop hops him and sends him to the garage (He says it's the garage). Franklin is beginning to think the whole thing is a joke, except no one is laughing. Frank Higgins took a fishing trip to Lake Lontonia (if anyone knows where that is), after fishing several hours one day without a single nibble, Frank jammed the end of his rod into the bank and proceeded to peel off his clothes for a swim. After wearing himself down he returned to find a bass as long as . . . Wearing himself out on the end of the line. A recent copy of the Signal (a publication for WPTF employees) reminds me of a job Waldo Rood performed recently, after scouring this part of the country for a man who could wind a certain type of relay coil, Rood, former mechanic, school teacher, insurance salesman, trucker, car painter, and car salesman, decided to tackle the job himself knowing it would probably take months to obtain this coil from the manufacturer. He turned out a perfectly wound coil that looks like a factory job and works as slick as an eel. In fact, we have a bunch of quite talented guys at 'PTF . . . Among them are photographers, hams, draftsmen, machinist, an editor (???), aviators, grocery men, yes, radio engineers, all that Waldo Rood is, and a few diplomats . . . If I've left anyone out will they please stand.

Sam Liles took time out from his fast horses and Sloe Gin to drop in at Westinghouse in Baltimore to visit a former WPTF engineer, Felton Williams. According to Sam, he has promoted himself to a new car complete with wooden bumpers. Felton, one of the world's outstanding backsliders, finds himself quartered in the house of a preacher, has cut his blasphemy in half . . . He now

only curses every third word . . . Lest he be cast out with the other devils.

Another former 'PTF engineer, Johnny Boykin, Sam says, works on the theory that a clean desk indicates no work being done. Besides blue-prints and office memos, his desk has a collection of beer bottle caps (the bottles must be in the lower left-hand drawer) shoe laces, bobby-pins, and what looked like last year's watermelon rinds, however, among the debris Sam says Johnny has dreamed up an FM transmitter that does everything automatically except making the midnight coffee, and we wouldn't be surprised to see a spigot sticking out one end when ours is delivered.

Bringing things up-to-date in the control room . . . Remember in one article I mentioned that we were going to lose one Bob Royal unless he found some place to live. I can't say that I am happy to make this statement, but Bob has another room about ten miles on the other side of town. Perhaps that's putting it a little drastic Bob, but at least you are on the bus line. Bob spent his vacation with his people in Greensboro, N. C. I think I remember hearing Bob say he was going to try to get in a few days at the beach before the Summer was out. Pres Pearson is our groceryman now. He is opening his place of business October 1st, and is going to take orders by telephone and have a delivery service, so start phoning in your orders boys. Pres spent his vacation at Myrtle Beach, S. C. He hasn't had much to say about his activities there except that he had a good time. Howard Sugg (T.E.), and I (S.E.), spent our vacation at Wrightsville Beach, N. C. Doing a little fishing, and speedboating with our very good friends the Kings and the Freemans. I'm not going into any detail as to how many fish we caught, or how large, or how fast the speedboat would run, because it would be questioned anyhow, but we did have a swell time. All vacations haven't been reported on, and some are yet to be taken, therefore, we will try and mention those remaining in our next article . . . So, howz about doing something exciting boys! Oh! by-the-way, Chief Engineer Henry Hulich spent his vacation at home nursing the kids for the wife, who was sick. He tells me he is now chief cook and bottle washer and talking to him today, he said he was going fishing this week-end . . . Don't come back empty-handed and we're not falling for any fish stories skipper. Alton Tripp is now at Atlantic Beach with his family probably enjoying some good fishing, being supervisor of the control room doesn't make your tall tales authentic either, Tripp.

"That's What the Man Said . . . !"

"Every man owes some of his time to the upbuilding of the profession to which he belongs."—Theodore Roosevelt.

"In modern times, it is only by the power of association that men of any calling exercise their due influence in the community."—Elihu Root.

"Every man is a debtor to his profession; from the which, as men, of course, do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto."—Lord Bacon.

"The reserve potential strength of a profession like ours can be summoned to effective exercise only through an association, national in its scope, and wielding the consolidated strength of a united and thoroughly patriotic membership."—Hampton L. Carson.

"All your strength is in your union,
All your danger is in discord.
Therefore be at peace henceforward,
And as brothers live together."

—Henry Wadsworth Longfellow.

The picture appearing with this month's article is that of the one and only Hunter Wall (SE). Hunter has been with WPTF since April 28th, 1943, and is still going strong. He just got back from the beach off his vacation and his fish stories were kinda big too. What makes these guys tell such fish stories?



HUNTER WALL

Picture by Gus Youngsteadt of the WPTF Staff.

He says his hobby is taking it easy whenever he can and fishing whenever he finds time while taking it easy. His wife gets him in the garden to do a little hoeing once in awhile, but as soon as he catches her back turned, he runs out the back lot and comes to town and tries to see who he can find to sell a good used car to. (I hope that makes sense.) Yes, Hunter catches a few of these guys a little hard up for a little quick cash and buys their car. He takes them and works them over and re-sells them for a little profit. Right now I think business is a little slow, I've seen him driving the same one for two or three weeks. Maybe he can't find a sucker or he found a good one and is keeping it for himself. He is going to sell new ones as soon as he can get them. I am in the market for a good car but he don't seem to be able to find one good enough for me, I wonder why! Could it be that he don't want to stick one of his co-workers or he really has my interest at heart. I think Hunter will do me right though. Maybe he is waiting for the new ones to fix me up proper.

Did I say I didn't have anything to say? Well, I didn't have anything last month so I had to try to think up enough to make up for both months. I think this is about enough, so I will see you next month. 73'S.—Ham News Next Month.

A. F. Gain Along the Mohawk

By Joe Gagne

HOW! Ugh! Mohawk Chapter of NABET send Injun greeting to pale faces of heap big-um tribe. Listen! Mohawk hold-um pow-wow on white man's magic callum WGY Schenectady.

Yup gates—with a little Mohawk Valley atmosphere here is the ins and outs of the wild Indians up this here way. Indian summer will soon be here so pale faces are having vacations, babies, new cars, and what not. This is all in the line of an introduction to the news and info on the gang here at Schenectady.

From the transmitters at South Schenectady (located on the other side of the tracks) we hear that Fred Vert just got back from a jaunt on his vacation to Armour, South Dakota to see his kinfolks. Stanley Godell, the junior gestapo (note how junior it is without capital letters!) is back too from a vacation spent at Schenectady, New York. Must be quite a town with that name, eh kids? Stan bought a new camera—Eastman Kodak Medalist—not a plug either. All set for the Fall shots, eh Stan?

The Ralph boys—Baker and Sayre came back to their operations on. of all days, Labor Day. Have nothing on their activities but the boys behaved themselves with fishing and taking life easy.

Stand by for the latest—My informant at South (and it ain't that wheel Wheeler either) informs me that Harold Bergman is to be a grandfather! Harold goes on vacation soon and he ain't a-talkin' till its over. Friend Cummings (wish I knew his first name) goes on vacation too—Lord knows what he is a-cooking up on the side while he's gone.

Sideline on indicating devices—what is the zero setting on a meter? For any kind of an answer see the gang at South—they have set plenty the past month—yes? And here we duck the pliers and screwdrivers thrown at us and beat it down the Mohawk

River to the studios of WGY and WGFM—let's see what has been transpiring here—

Dave Farrel subing for relief operator during the summer, returns to school at Union College this month to pursue his studies in EE. Best of luck to you, Dave.

We'll look what is hanging around—yes, gang, none other than James F. Cornell (Cornell as in Cornell University). Jim is now hanging out in the Motion Picture Section as Sound Engineer. (No plug for the University but Jim complains that there has been a miss in getting the last name over—OK Hornell?)

Roy Stigberg back from visiting all the beer joints in New England from Cape Cod to guess where?—and here's where I really duck—Bar Harbor!

Since our last edition we now have a full house in car owners. Bob Vadney, Herb Kohl, and Marce Reeds all finagled, purchased (?), negotiated, or call it whatever you like, cars. Not brand new ones, of course, but recent years. You should see the fun when Vadney, Stigberg, and Kohl all leave at once in a hurry to beat the Works traffic—all have the same make, color, and style of cars! Since I own a Ford (plug) we better not mention they are Chevrolets.

We welcome to the staff a swell guy who was with the staff a short while ago 'till a forced leave of absence—Gus Coopersmith. Gus is back in grand style and sure is enjoying the work. Good luck and a hearty welcome back, old timer.

Ralph DeGraff (without the "e" on the end) is the proud father of a bouncing baby girl born Sunday, August 25th. Congratulations Ralph, and best wishes from the gang to the missus.

In the line of special features, WGY and WGFM carried the presentation of the ship's bell from the USS Saratoga to the City of Saratoga. Some twenty years ago, when the aircraft carrier was commissioned and launched, WGY carried the ceremonies. Quite a fitting end one might pause to meditate on.

On vacation at present are Ruthie Wallgren who is down on the Cape, and Frank Boudreau somewhere up around Montreal. Have fun, youse lucky people.

Paused here and grubbed a cigarette from Marce Reeds holding down FM sign off. Marce stated he was rebuilding gear "scaunched" from the other side. Youse ex-gis' should recognize the vocabulary!

Eddie Hoffman, our other erstwhile female operation, says she likes working week-ends and having her days off during the week. Spend more do-rae-me, eh Edith?

Well, to close the studio gain of gab here, we paid a visit to our "brothers" at WEAH down at Port Washington, L. I. Nice outfit, fellers. "Jake" Flynn (?) Barber, "Mac," and Joe (?), were on and we sure enjoyed the verbal QSO with all of you. Please excuse the question marks as we did not jot down the names. And don't forget to drop up and see us Indians whenever youse guys are in the neighborhood.

A quick flip to the Helderbergs found Josh Billings holding down the FM transmitter sign-on, while Art Reardon was found "high on a windy tower" installing some vhf stuff and like. Art sure has gone a way up in this world of ours!

Dick Putman supposedly with the studio staff, has been coming and a-going between the tele transmitter and FM transmitter too, and the tele studio. Last seen—heading up State Street to a well known emporium for 3.2! Next month—Television News—73.

This Report Comes to You By Way of San Francisco

By Jack Van Wart

THE fellows in San Francisco are certainly taking advantage of the post-war availability of gasoline and travel to enjoy their vacations to the utmost. Outstanding among the trips was the one taken by Oscar Berg, maintenance supervisor. I stated in a previous article that he was going to Alaska to visit his son who was stationed there with the Marine Corps. Part of this was in error. This is what happened. The Berg family had been planning a trip to Alaska in 1941 when the war broke out

and the plans had to be postponed. Soon after the war was over they again began making the necessary arrangements for passage to Alaska and only a couple of days before his vacation was to start, were they sure that they could go, and then after all plans had been completed for Oscar and his wife their son Jack was sent home on terminal leave but could not leave the United States continental limits so he was unable to accompany his folks.

They went by plane from San Francisco to Seattle and then by boat to Vancouver by way of Victoria and transferred to the Canadian Pacific steamer Princess Elizabeth. Their destination was Skagway and they made stops along the way at Alert Bay, Juneau and Prince Rupert. From Skagway they took the train to White Horse. When they arrived at the hotel there was a sight-seeing taxi waiting for them and wasting no time they started to see the sights. Through acquaintances they were able to see at close hand all the projects around White Horse such as the famous Canol Project and the Air Field, and parts of the Alkan Highway. They returned to Seattle 10 days later and spent almost a week there. Oscar will tell you, if you keep at him, about his Shuffle Board games with the Secretary of Labor Schwellanbach who was also enjoying a vacation on the same steamer.

Russ Butler and his wife Jan are two very proud people these days, telling how their 9 mo. old boxer is walking away with all the honors at the dog shows. Jan has been handling the dog in all the shows and has done very well considering the dog has taken three ribbons at two shows. At Monterey she took a Red ribbon. At Vallejo she took first in her class and second in the show. Not bad, we'd say.

Bob Salle of the recording staff finally solved his housing problem by purchasing the house where he was renting over in San Anselmo. Right away he summoned all his ambition and started to clear the trees off his property. There was one about 60 feet high which presented a bit of a problem so enlisting the help of a neighbor they started sawing the higher limbs and carefully lowering them earthward. Having stripped the trunk, they started sawing and chopping in such a fashion so that the tree would fall, they thought, where it would do no damage. Well to make a long saw short they calculated incorrectly and the tree started for the house. However after Bob borrowed some heavy tackle they managed to guide the big tree safely.

Tom Watson is now an honorary member of the Aptos Chamber of Commerce. This high position was bestowed upon him and Announcer Webb Witmer when they were doing a broadcast of the Woman's Magazine of the Air from that city.

George Dewing was telling about his vacation recently. He and his wife, Helen, decided that this year they would make no plans at all, they would just start going and when they saw some place they thought would be a nice place to stop they stopped. When they returned home they had seen quite a lot of the near-by country. They went to Nevada and proved that the slot machines are not there for you to win on. They went to Carson City, the capital city of Nevada, and then to Virginia City, historic gold mining town, and saw some of the old structures still there. They returned to California and headed toward the Monterey-Carmel section and visited the country where Mrs. Dewing was raised. Sounds like a real way to spend a vacation, no plans, no dissapointments.

Red Sanders turned in about three thousand miles travel last month when he did the Sammy Kaye show through the Northwest. Everyone says that Stevens returned to his old Alma Mater August 4 for the National Hour broadcast from Alcatraz Prison in San Francisco Bay. Bob Woods, our little man with the big smile, just got a little Collie puppie which he brought to the studio a while back. When he was getting ready to leave he didn't get started fast enough and the third floor lobby carpet suffered. Everyone says that when the dog is full grown he is liable to weigh as much as his master.

Jefferson of master control spent his three weeks' vacation in the highest of styles. He and his family were originally planning to fly east to get a new car but availability of cars made them change their plans so instead they spent all their time on a beautiful 65 foot power cruiser (or yacht) cruising the water around southern California. They really must have had a wonderful time.

PITTSBURGH By Frank E. Henry

PITTSBURGH again is confronted with the prospects of another power shut down on September 1st. unless the Independent Union and the Duquesne Light Co. come to a last minute agreement. At the time of this writing no visual preparations have been made throughout the city. The general feeling here seems to be "It can't happen here twice."

Since the last writing, the studios, shops, and offices of WCAE have been redecorated and painted. Which means that if any of the visiting engineers are down Pittsburgh way, we will be proud to show you around, to quote our continuity department, "To the Sky High Studios of WCAE located in the palatial penthouse of the Hotel Wm. Penn in the Heart of Downtown Pittsburgh, overlooking the Billion Dollar Golden Triangle".

Engineering Staff Notes: Two Engineers added to staff—Ed DeForest and Charles Ross, both Ex-Navy . . . Clarence Fabin—raising Pheasants . . . Clint Prewitt—putting the finishing touches on his 75 meter lone rig . . . Jim Greenwood—on vacation . . . Jim Doll—leaving Saturday for the Cleveland Air Races . . . E. E. MacCosbe, Howard McClelland, Frank Waltermar and Jim Doll—preparing for a fight to the finish for the Golf Crown of the WCAE Engineers . . . Hodie Gray—still trying to make a 35 Packard look like the 46 model!

News From Baltimore

By Alex Beauchamp

AT THE last council meeting of the Baltimore Chapter of NABET, it was decided unanimously, to form an Educational Committee. This committee, to direct all educational programs of this Chapter. Appointing qualified Engineers to give lectures on applied theory and practise, to secure data and information from various radio equipment manufacturers on new developments in the broadcast field.

The prime factor for the Educational Committee, will be aiding members who do not have a first class Radiotelephone License, to get a first class ticket. Anyone who is working as a technician in broadcast, and intends to stay, should have a first class ticket. For it is my belief, before very long, you will be required to have a license, by action of the FCC. There was some talk of this action, before the war, that all Engineers, working in RF and AFF, "including the AT&T men" would require a license.

I know there is going to be some reluctance to this program, but before you squawk too loudly—lets consider a few facts. Why should we study at all? We have our jobs—what more is necessary? To begin with, the broadcast engineer's work is not just another job, where he counts the number of buttons he pushes—ducking out-of-sight of the boss, or just hanging around—waiting for the time to pass, so you can get out of the darn place and visit your favorite bar, or some other habitat. If that is your conception of broadcast engineering, you had better stop where you are. You are not doing the type of work suited to you. Broadcast engineering is a profession, on the same plane as medicine and law. You serve no apprenticeship where you become a grease monkey or a printer's devil, and learn your trade by looking and watching the master mechanic perform the operation, while you pass the tools. In broadcast engineering, you work with tools, but of a different type. The tools of the engineer are mathematics and physics—without them, your hands are tied.

It is not necessary for me to enumerate the many steps needed to acquire the mathematical education, because you know you need the equivalent of a college degree, before you can master radio theory and practice. To become proficient in radio engineering, there are endless hours of study, reviewing many subjects, to accomplish what others have failed to discover. The Radio Engineer does not drop his studies, once he has acquired a position, but continues his studies, so he can devote his knowledge to the career he has chosen.

Therefore, it is our prerogative to know just what happens,

step by step, when a button is pushed, and a program is on its way to the listeners. To know, in detail, what circuits aid, and those that attenuate the progress of program being broadcast. We need not only the fundamental principles, but, also the advance theories and practical experience to be proficient in our vocation. We want to prove that NABET members are bona-fide Radio Broadcast Engineers, capable of any problem thrust upon us.

This is a little late in reporting, but a-way back in August, our Chapter Chairman, Ed Jung, made the head-lines by reporting the freak tornado that struck at the southeast part of the City. Ed said, "On August 26th at 4:28 P. M. he was standing in the door-way of the WFBR transmitter, getting a bit of fresh air. A peculiar dark cloud was slowly drifting from the northwest to southeast. Then suddenly without warning, it seemed like an arm of a giant, reaching from the sky, lifting up a roof here and there, peeking to see what was inside. Twisting trees up by the roots, and finally reaching the Coast Guard Depot and lifting a lone jeep, dumping it's contents upside down." No one was injured by the freak marvels, which was last seen dissipating over the Chesapeake Bay.

Miss Fisher of the program dep't was married on September 15, 1946. Bob Briele does not mention the groom—I suppose there was a groom. Well, any way, we wish all their trouble will be of the little variety.

Hudson Eddy Currents

By Pat Miller

RONNIE BUNNY HARPER Sound crashes the columns again. A boy named Dean Richard arrived at the Floral Park Sanatorium August 9th. We all hope the poor child resembles it's mother.

Anthony Patti of Carteret came up with a baby girl. Mac Mac-Alister of Carteret done went and got hitched. Ray O'Niel has returned to the transmitter after five years of service as a "three striper" in Uncle Sam's navy.

Ye Ed (W2AIS) picked up his post-War WAC by means of an RST 579 from W5HHO/J2 in Tokyo. 'Twas an appropriate date to do it too, September second, the first anniversary of V-J day. Keep your eye peeled on forthcoming issues of "CQ". The Displaced Bachelor's "Special" will appear. 'Tis Ye ed's transmitter made with his own lily white (?) hands.

Next month's profiles: Bert Harkins of Management and Harold Hadden of Master Control.

Omaha News

By Cy Hagrman

THERE has been an increasingly greater number of out-of-town broadcasts around the ol' WOW diggins this month. Seems as if some of the gang are always gone to Podunk or Plough Center to pick up a show for WOW. The writer and Ray Clark traveled to historic Fort Randall in South Dakota for the ground breaking ceremony of the new dam and reservoir to be constructed at that point across the Missouri River. Al Maller lugged the wire recorder to Des Moines on August 23-24 for the Iowa State Fair in company with the aforementioned Clark. Louie De Boer and Bill Dunbar are scheduled to take care of the Nebraska State fair beginning September 1. These nemos were in addition to almost daily trips to some part of Iowa or Nebraska with Mal Hanson, WOW farm reporter. Someone also was at the Columbus, Nebraska 90th birthday celebration and on numerous trips for the three times a week Hinky Dinky program.

Dick Peck, Control Engineer, is vacationing at this writing, and from the grapevine we learn that he is heading for Kansas City, Independence, Kansas, and Excelsior Springs, Missouri.

Louie De Boer has recently acquired a power lawn mower. According to the boys in the control room he is rapidly approaching normalcy and he no longer rolls the record from the bin to the turntable while groaning "Oh, my aching back".

Roy Glanton, Transmitter Super, has recently returned from

a vacation trip which included Boulder Dam, Grand Canyon, Estes Park, and other places of interest in the West. He reports that all of those places are still there and that a visit to them makes a very interesting trip.

Glenn Flynn, Chief Control Operator, reports working a VK on August 26 and getting a R6 signal report from the station down under in Australia. Nice going, G.

Nothing startling to reveal from either Bobb Rudd or Mark McGowan this month. Loosen up, you fellows, and let us have all the dirt in time for next month.

VITAL STATIC

G. Flynn takes the honors this month for the only entry in this department. He begins his twelfth year at WOW on October 1st.

About Rochester

By
George W. Wilson

IT SEEMS Don Anderson, who writes this column with me, has been sent to Washington by his employer, WHAM, to plot curves and stuff—and will be there for an indefinite period of time. So, at the last minute he called me up and said, "Carry on, old boy, carry on". Hence, as the dead line for this column is just hours away, and as it would take quite some time to gather enough news from WHAM to keep the boys happy, I'll simply toss the WHEC news in the basket, and omit the personal items.

This, of course, is being written in the middle of the vacation season, with everyone coming from places and going to places. It's the season of the year when we cross our fingers and hope all the equipment will operate smoothly, with a minimum of maintenance. So far the weather has been exceptionally good for this neck of the woods, and from all reports each and everyone of us is making the time count to the best advantage.

Rochester is within easy distance to a number of different good vacation spots. A little more than a hundred miles to the east we have the Adirondack Mountains, a section of the state dotted with lakes and rivers of all sizes. Then to the south there is the famous Finger Lakes region offering outdoor sports of every description. Any one of the five Finger Lakes is less than two hours driving time by car, and the fishing is really excellent. This city touches the shore of Lake Ontario, the most eastern of the Great Lakes. So from the Port of Rochester it is but a few hours sail across the lake to Canada, or to the St. Lawrence River and the Thousand Islands. Almost any spot on the Atlantic Ocean from Delaware to Maine is but a day's drive from here, or a mere two hours by plane. To the west of us is Lake Erie, Buffalo and Niagara Falls, again less than two hours' driving time. From the city of Buffalo a number of cruises start going west and north to Lake Huron, Michigan, and Superior. Yes, Rochester isn't a bad place to live and work, and when we take time out from our daily gripes to size things up, we realize we're not as bad off as we think we are. At least we don't have to go very far to get away from it all, and that advantage alone, we feel, is a mighty big point.

All this, in short, is a picture of the city in which we work and the country around us, and the places into which our signals reach. The weather quite naturally is something else again, ranging from big snow storms and sub-zero temperatures in the winter to hot sultry summer days in the high nineties. We all have severe colds in the dampness of the spring and fall, and grow ulcers from tangling with program directors and would-be production people—plus musicians, who—oh, well, let's not mess with the music department.

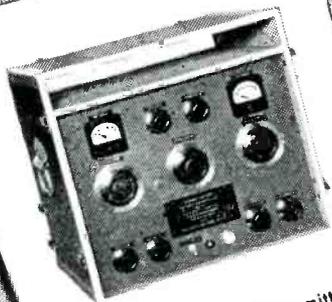
Have written the above just to be different, and because I said I'd keep everybody happy by not mentioning personalities in this edition. Next month we'll really have something to talk about. There is plenty of activity with WHEC's new 5,000 watt transmitter fast nearing completion and WHAM's new studios which, when finished, will be called Rochester's "Radio City". That's all for now, and I promise that the next edition will carry news about every member of the Rochester Chapter, and if there's any scandal, the whole country will read about it.

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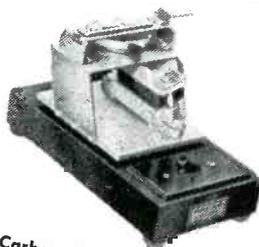


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Profiles . . .

By Pat Miller

THE profiles this month cover the careers of two non-college men who have worked their way up through the ranks and now hold key positions at WOR.

In management's corner we find Charley "Nobody loves me" Singer, and Ralph "Vinegarpuss" Schlegel represents the men.

It took me two weeks to trap this Schlegel guy and get him to talk. Every time I went to the recording department to find him I would be greeted with such remarks as "Ralph? Oh, I think he is over at Harveys picking up some parts for a new recorder." "Oh, he was here awhile ago but I don't know where he went." That gets pretty



RALPH SCHLEGEL

irritating after awhile especially with a deadline staring you in the face.

His title is a fancy one and probably accounts for his perigrinations. He's (get this) Assistant Supervisor in charge of maintenance, development and construction. With a string like that he ought to be walking around wearing buckle shoes, knee britches, a red sash, and have a mace in his hand.

Well, you have to hand it to him; he has worked his way up the ladder the hard way. His radio know how came from "how to do it books". As a ham he taught himself the code. When he was eight years old he and another neighborhood lad set up a sounder system between their houses. A few years later he got on the air with a Ford spark coil and started working neighboring hams in Minneapolis. His first call was 9CSJ. Since then he has owned W9HR, W2AIK and now holds W2ICX.

Printers ink gave radio a bit of competition for awhile. Actually he earned his first dollars running a newspaper route in the town of his birth, Watertown, Wisconsin. He was only seven at the time. Seven years later he was working as a printer's devil in a Minneapolis print shop. However, radio won out.

Lots of lads at the age of eighteen feel the call of the sea and Ralph was no exception. 1925 found him ensnared and off to the Coast Guard he went as an RM1c. Three years of this and then a bad time of it for

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a year after he left the service. He had such hard luck by the time he hit WOR's doorstep that he little dreamt then that he would be holding a top job with them in 1946.

The 1928-29 rough period saw him working twice on temporary jobs for WMCA, acting as a sparks on a Mississippi steamboat running between Dubuque, Ia., and St. Louis and what looked like a splendid job with the Universal Wireless Communications Corp. of Chicago folded when the company went bankrupt. However when he arrived at WOR he found what he wanted, a job and a chance to advance on his own merits.

His first assignment with us was in the field department. He did his share of hotels and night spots and when in 1930 he was offered a post in Master Control he took it. He did right well at button pushing and in no time at all was an assistant supervisor. However six years of this made him decide that the avenue of opportunity was too narrow there for his ambition and when a chance arose to help Ray Lyon in the founding of WOR's recording department he jumped at it.

This turned out to be a wise move. 1941 found him a Junior assistant supervisor in a department that had grown with remarkable rapidity. 1943 found his present niche carved out and he has been happy ever since. Yessiree, hats off to Ralph! He has come up the hard way. Few boys in the recording game can beat Ralph when it comes to "savvy" in the groove making business.

Yep, he's married and happily. Ham radio as a hobby lies dormant due to too much past enthusiasm. Stamp collecting has a moderate grip on him and a 9 by 12 plate camera takes care of his shutter bugging. He's made the camera pay by doing illustration work for magazines.

When I asked him what he was doing now for diversion he turned coy and I knew that I had to call upon my old faithful gestapo to tell me what cooked. Sure enough I got the goods. His reply to my query was "Oh, I'm just sitting back and listening to my arteries harden." But the facts state that he is pouring his hard earned gelt into Arthur Murrays coffers in return for being taught how to trip the light fantastic. "Listening to his arteries harden." Hmphh! A likely tale.

POOOR Charley Singer! Nobody loves Charley. But who ever heard of anyone loving an Assistant Chief Engineer?

A small but very vocal minority says that he should have sunk along with the Comanche instead of jumping off. Now fellows isn't that going a bit too far?

What of this Singer character? Yes, he was born. Bayonne was the place and 1903 the year. As a matter of fact he has done right well by himself since then. Space limitation forces me to only touch on the highlights of his career. He like Ralph has carved a niche for himself with only a high school education and a course at RCA Institute to set him on his way.

Except for a spell of BC work at WRNY,
(Continued on Page Twenty)

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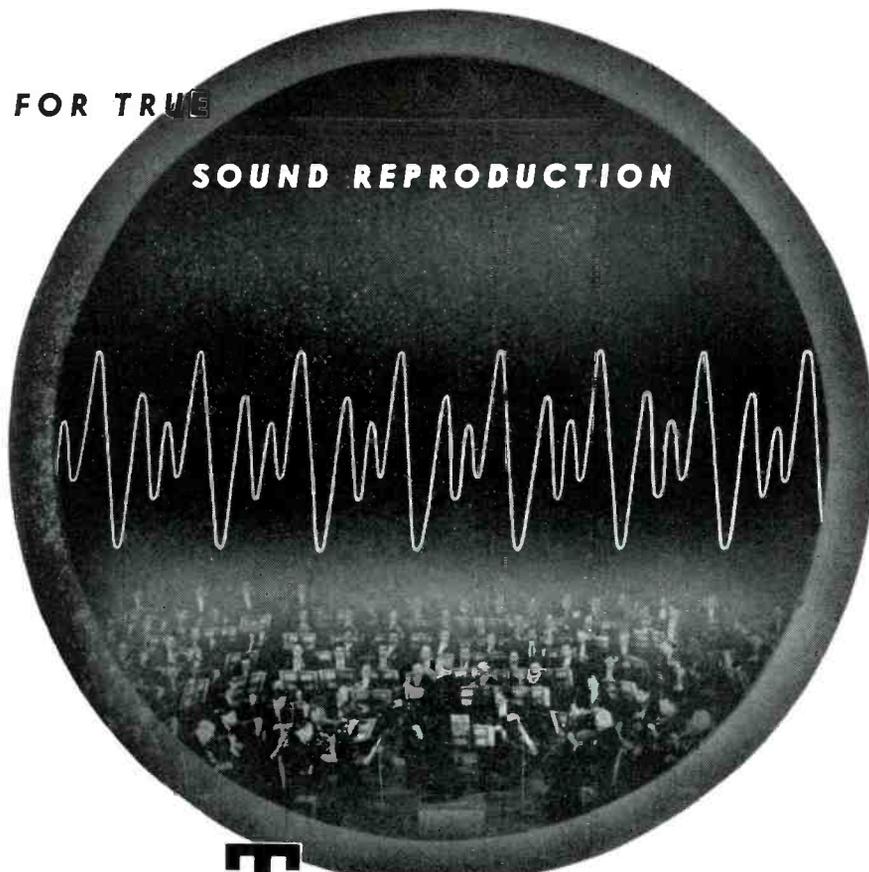
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PROFILES

(Continued from
Page Nineteen)

his first seven years after RCA were spent on the high seas as a sparks. He held all sorts of radio posts including the lush job of operator on William Randolph Hearst's yacht.

While acting as chief on the SS Comanche the ship caught fire off the east Florida coast. The flames spread rapidly and the skipper ordered an SOS to be sent. His assistant operator was out on his first trip and Charley saw to it that he was sent off in one of the lifeboats. Charley remained to carry on directing rescue ships to the scene. He left when the deck under him caught fire and made the transmitter inoperative.

At this point all the lifeboats were in the water and it being the dark of night he had no choice but to jump and swim for it. A half hour later a rescuing vessel's spotlight picked him up and a badly frightened and bedraggled Charley was hauled aboard.

The V.W.O.A. a few years later gave him a meritorious award for his aid in saving the lives of more than 200 passengers. 1927 was the year he came to WOR as a transmitter engineer. He advanced himself rapidly and became Chief Supervisor in 1932. He held this post until 1942 when he was called upon by the Signal Corps to act as assistant director of the operational Research Staff in charge of Maintenance.

During his reign at the transmitter he designed and built the intermediate and high frequency transmitters that WOR uses for relay work. He also found time to write fifteen articles for publication and built and installed our FM transmitters.

After doing a bang-up job for the Signal Corps during the war Charley returned to WOR and was offered the job of being Assistant Chief. By accepting this tough as-



CHARLES SINGER
Assistant Chief Engineer WOR

signment he has taken a big bite of responsibility. He is finding that he has to coordinate his philosophy of operation and even modify it to meet the many new demands that beset him. Only time will tell how well he will chew the big bite he has taken. To aid him in his efforts I asked him if he had any message to pass on to the gang and he said:

(Continued on Page Twenty-one)

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The 1946 Winter I. R. E. Meeting

Summaries of Technical Papers, Alphabetically by Authors' Names

(Concluded from the September Issue)

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.

11. Stagger - Tuned Wide - Band Amplifiers.

H. Wallman

(Radiation Laboratory, Massachusetts Institute of Technology, Cambridge, Mass.)

In radar and television receivers, the simplicity of single-tuned circuits strongly commends itself to the designer of wide-band, band-pass amplifiers. Unfortunately, with present tubes, one cannot make a high-gain amplifier wider than about 4 megacycles; the principal reason is the rapidity with which bandwidth decreases as identical single-tuned stages are cascaded. This paper describes the scheme of stagger-tuning the individual single-tuned circuits, which essentially eliminates the shrinking of over-all bandwidth and thus makes possible very simple 10- and 15-megacycle-wide amplifiers. Stagger-tuning appears to be much less well known than it deserves. Graphs are presented condensing the whole basic design of a wide-band amplifier into the work of a few minutes; actual examples of amplifiers are shown.

57. Metallized-Glass Attenuators for R-F Applications.

E. Weber

(Polytechnic Institute of Brooklyn, Brooklyn, N. Y.)

Based on special techniques of precision metallizing of glass plates and tubes, power-absorbing elements have been developed suitable for use in calibrated attenuators in coaxial as well as wave-guide R-F power transmission systems of moderate power level. Particular attention had to be given to proper matching of the attenuating sections to the practically lossless transmission lines by means of impedance transformers which themselves are part of the metallized-glass elements. Several models with precision measuring drives were developed for use as reference standards.

65. The New "Speedomax" Power-Level Recorder.

A. J. Williams, Jr., and W. R. Clark
(Leeds and Northrup Company, Philadelphia, Pa.)

The new "Speedomax" power-level recorder is an instrument that faithfully records rapid or slow variations in power level with time, and is independent of variations in frequency within its frequency range (25 to 150,000 cycles). The recorder scale is linear in decibels. A 20-decibel change in power

input can be recorded in about one second. The new circuits used in this new recorder are described in detail, and its performance characteristics are given.

25. A Pulse Altimeter of High Accuracy at High Altitudes.

Irving Wolff, W. D. Hershberger,
G. W. Leck, and R. R. Welsh

(RCA Laboratories, Princeton, N. J.)

87. Hermetically Sealed Metal Holders for Crystal Units.

A. W. Zeigler

(Bell Telephone Laboratories, Inc., Murray Hill, N. Y.)

— END —

BOOK REVIEW

Radar — What It Is

By John F. Rider and G. C. Baxter Rowe

Published by John F. Rider Publisher, Inc., New York. 8½ in. x 11 in., paper cover, 72 pages, \$1.00.

The best review of this work is to quote from the authors' foreword, "... While no attempt has been made in this book to describe anything more than the essential parts that every radar installation must have, it was felt that a complete non-technical explanation of these details would give the reader a basic understanding of what radar is and make it possible for him to appreciate the utility of the system when any of its applications becomes a subject of conversation. At the same time, some emphasis has been placed on the various ways the Armed Forces employed this electronic marvel ..."

The text is well illustrated, and well worth a dollar.—Ed. S.

PROFILES

(Continued from Page Twenty)

"Yes, Pat, tell the boys that I regard each and everyone of them as an integral part of management. They are in fact the front men who are in constant contact with our clients. I am anxious that they never underestimate their importance in this particular facet of their manifold duties. I urge each and everyone of the men to come to me with any suggestion or idea that they think will improve the operation. I in my new post need your help in order to do my job well. Above all, may I urge any man on the staff who is offered a managerial post to accept it. We, of management, do not make

such choices unless we feel such a man will most surely succeed."

When Charley had such a thing as spare time he used to ham it under W2BU. He helped open forty back in the early twenties. Now his few spare moments are spent with his son twelve and daughter eighteen. Yes, nobody loves Charley. Every other week either Chairman Payne or one of the councilmen is throwing the contract at him. But, Believe it or not! Charley was the first president of WOR's ATE. My, my, how times change.

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:

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 - J. M. Keane (Hudson)—moved.
 - C. A. Cabasin (Engineering)—moved.
 - R. J. Callen (Hollywood)—unknown.
 - L. E. Fritzing (Hollywood)—moved.
 - C. H. Lorenz (Hollywood)—not at.
 - W. T. Pooler (New York)—moved.
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 - T. G. Bombough (Chicago)—moved.
 - E. A. Tavers (Hollywood)—moved.
 - W. C. Nesbit (Denver)—moved.
 - G. S. Dutton (Denver)—moved.
 - F. J. Kern (Springfield)—not found.
- Ed Stolzenberger.

The Philadelphia Story

By E. T. Darlington

B EING one of, if not the newest addition to the growing NABET Family, the Philly Chapter, composed presently of the crews at KYW (Westinghouse, NBC) and WFIL (The Inquirer, ABC), is happy to make its debut in the pages of this worthy journal.

Doubtless, introductions should be the first order of business. Charles H. Colman (WFIL-MCR), ably functions as Chairman; aided and abetted by Elmer J. Cummings (KYW-FM), in the role of Sec. Treas.

The balance of the local Council consists of Roy Nuss, William Johnson, and Carroll Roder, representing KYW, with John Schantz, Richard Seitz, and Edgar Darlington, for WFIL. The Technical Staff at KYW comprises 18 member-Engineers; those at WFIL number 22.

Both stations are currently in the throes of contract negotiations, under the capable guidance of Clarence Allen, Nat'l Rep. While quite union-conscious, and organized for nigh on to 9 years, this will be the first NABET contract for each group. To say that Mr. Allen's own enthusiasm is being matched by 100 per cent militancy on each member's part, is pure understatement.

With the exception of two Lt.-Cmdrs. still serving in the Navy, and one man on extended sick leave, the WFIL staff is back to normal; with the addition of 10 Engineers above it's pre-war size. At KYW, all have returned from military leave; "Si" Carter having since transferred to another Westinghouse division. We hope space will permit, in subsequent months, to elaborate upon the contributions that our individual men made to the war effort.

It seems as though the never-ending topic of conversation, around FIL's Engr.'s "lounge," is Ham activities. You can't get a word in edgewise on other subjects. "Woody" Dionne, W3FTR, on 10 mtrs., been working Johannesburg, South Africa (ZC6IG) and Rangoon, Burma (XZ2AB). Irv. Mitchell, W2LHA, active on 10; Jack Schantz's W3FYD is getting out via CW; even "Tony" Wheeler, W31TA, an Announcer holding Amateur and B/C tickets, has bought him a nice new NC240-D, and is loosening up the old vocal cords on 75 mtrs., as well as on 560 kc. Frank Kern, 3KJ, Ralph Ward, 3DYS, and Charlie Colman, 3QT, are believed to be in the process of dusting off or revamping their rigs. To say that your correspondent's 3AUB is "inactive," would be putting it mildly.

From the KYW precinct, comes word that Paul LeVan is on with W3MB, as is his wife (W3GM-?). Other Transmitter-men and their respective calls are: Les Chumann, W3BRP, on 80 cw.; Bill Johnson, W3LAZ; and Perry Huffman, W3HKC, 10; Perry, incidentally, is taking a leave of absence from the Plant. While their activities couldn't be learned in time for this issue, the calls of some KYW Studio-men are: "Pete" Cummings, 3CIL; Ed Stenzel, 3BQI; Carroll Roder, 3GLK; Walt Wilson, 3HTZ, and Emil Taube, 3JIK, on 10 mtr. fone.

On the Social Front, we note that Elaine Gerhart, of KY's Program Dept., was runner-up in the Beauty Contest for choosing Miss Greater Philadelphia; the winner of which vied with the nation's prettiest, at Atlantic City, for the Miss America crown.

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The marriage of FM Supervisor, Alice Hunt, to KYW Announcer Wilson Daily, took place on August 25th.

Hope our Editor credits the local C. of C. for our photo-heading. (Among things we didn't know until days later:—Bill Neill's sister-in-law, Ruth Little, handles all such matters at the C. of C.; and FIL's prexy, Roger Clipp, is a member of their Board of Directors!)

Ray Rodgers, with the arrival of daughter Victoria Lynn, has nosed out Ralph Ward (with new son Richard Paul) from the title of "most recent Papa".

Irving Mitchell and Johnny Irvine continue as 'FIL vacation reliefs for another month or more; with the prospect of permanent berths, should the CAA and zoning authorities approve the new site for which the FCC has granted a construction permit. Ed Parks, back from OWI, is shuttling between the Race Tracks for WFIL. Joe Durante, formerly of WSAY, resigned last week, leaving with the best wishes of everyone.

Listeners to "Breakfast in Hollywood" were forced to miss part of that popular feature, and instead got an hour's unscheduled dose of songs from yesteryear (transcribed); when an oil company's bulldozer (road-scraper, to you) plowed through FIL's phone cable, and the Transmitter became a temporary Studio. At least one authentic instance when the title wasn't "West of Denver!"

On September 6th, management is throwing it's annual 'FIL Staff Frolic, at the Manufacturer's Golf and Country Club, above Glenside. The KYW staff had their's some time ago at Forrest Park; plus a more recent "Meet the Talent" picnic at Willow Grove Park, which attracted 30,000 public attendees.

Maybe this belongs in the Man Bites Dog Dept.! Anyhow, a fund of over two hundred dollars was donated to the WIP (MBS) staff, to ease the burden visited on their families by virtue of their loss of pay during the 2-week strike. There being no NABET members at WIP, it was a pure demonstration of fellow-feeling, and an acknowledgement that their fight is our fight; which led each Chapter member to contribute, voluntarily, 10 per cent of his salary. The upwards of \$200 would have been donated weekly, had the strike continued.

Another runner-up for the Man-bites-dog title, concerns the hanging of a photo of 'Fil's owner, Walter Annenberg, and Pres. Clipp, at the AM transmitter plant. At some stations, they

prefer to just hang the owner, period. What is this, a "we love our teacher" contest!

Walt Burger and Bill Neill continue to fill a busy day, assisting Tech. Supvr. Dick Seitz in new construction, special installations, and work associated with WFIL's expanding activities in new fields of endeavor, such as television, etcetera. Jim Stewart and Dick Marshall cover all transmitter relief shifts, while Geo Schisselbauer and Charlie Wrigley hop an occasional swing shift to the sticks; Sam Caplan and Ed Darlington being the transmitter "regulars". The FM regulars turn out to be Ray Rodgers, Elwood Dionne and Pat Lynch. Ralph Ward, cartoonist extraordinary (with no offense intended to Frank Kern and Ed Stenzel), together with Bill Lorainy (ex-WARM-er), sign the station off each night; only to have the faders opened again next morning by Ben Sidman. That about accounts for the entire 'FIL roster.

Chapter Chairman Colman believes it might be of general interest, that a resolution, recently adopted by the Phila Chapter of NABET, prohibits members from engaging in program exchanges, or any other operations which can be construed as strike-breaking activities—between the Phila NABET stations and any other which may be on strike in the Phila area.

That this policy would extend to any NABET station involved in such a situation, is a foregone conclusion.

It is obvious, he feels, that a policy of this nature is conducive to good organization; and it is hoped that insomuch as NABET has assumed national stature, the establishment of such a policy will be removed from the province of Chapter Resolutions, and become accepted as national NABET policy—applying to any man, any station, or any group of stations, meriting the support of the continental power of NABET.

It is hoped some of our members made reply—personally, and via "Broadcasting's" pages—to that owner of WMVA, whose letter on page 32 of the 8/26 Broadcasting, protested the "unfairness" of having more than one First Class License-holder at a 250-watt station. He prefers a Restricted licensee, who can "turn the equipment on, leave it on, and not try to find out what makes it tick". We think the burden of providing uninterrupted public service, in return for a profitable slice of the public's spectrum, must rest very lightly on his shoulders; we'd say on his conscience, but we're not sure he has one. Incidentally, he would like to invoke the Lea Bill! Philadelphia has a 250-watt station employing 7 First Class Operators, and a 100-watter with 3 First Class men, and both outlets are coining money! Up and at 'im, men—with both barrels!

KYW's Paul Foody has scrapped his bicycle, and bought one of those flashy new Studebaker contraptions. Now, his only problem is to find out which way he's headed! And while at White-marsh, let's report on the nice tomato and corn crop, from that one-half acre. That "duration" fence has been taken down, and the plant is again open to the public.

A company-sponsored Television School is about to begin at WFIL, with instructors from RCA's Camden Labs. First semester, on reception technique, which staff-members are free to attend, is aimed primarily at Receiver Repairmen; later classes will be slanted more directly at their own Engineers, and the technique of pick-ups, studios, fixed and mobile transmitters, etc., will be given detailed treatment.

Well, though we practically inherited this job overnight, and haven't really begun to contact our many prolific word-slingers, key-holders, cartoonists, and minicam fiends; perhaps Philly hasn't made too poor a showing in it's maiden effort. We herewith solicit the local gang's most enthusiastic coepration. And it was nice meeting the rest of you! 73.

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The Chicago Story

By D. R. Fitch

ART HJORTH did one swell job of writing for the Chicago column for August for which the entire chapter thanks him very much, after yours truly's last effort. I think I would do well to hire him as ghost writer every month. I noticed only one error in Mr. Hjorth's writing effort and that was his reference to my home town as being Goliad, Texas, when it really is Lampasas. Lampasas to you may sound like a very odd name for a town but this fair little city of five thousand souls received its name in a most romantic manner. It seems that many, many years ago when the first intrepid explorers and settlers of our great southwest rode onto the site of this future metropolis they made note of the great abundance of insects. These insects were a very large species of elongated, soft bodied beetle (family lampyridae) or fire-fly. These great men noted how the fire-flies flitted about over the beautiful spring fed streams which were covered with magnificent, giant water lilies and flashed their little neon equipped extremities. Therefore, being men of vision, they planted the flag and proclaimed all land thereabout would hereafter be called by the name Lampasas.

The American Broadcasting Co. has just completed the selection of their number one beauty. This contest proved to be of great interest to the local Wolf and Lamb Club. I was not informed of this contest and it was pure luck that NABET had any coverage there at all. I had just finished an organ themes assignment in studio T for "Ma" and as I sauntered into the lobby I quickly noted the absence of any males. This means one of three things, a new draft call, poker game, or women. The latter proved to be the case and by stealthy stalking I found them full fifty strong sitting in studio D in silent appreciation. This club, Wolf and Lamb, does not condone the use of the low musical note formed by pursing up the lips and expelling air through them at a variable rate as do their west coast brothers. Thirteen beauties in all were presented, the winner and beauty of them all was declared by the judges to be Miss Mina Kolb. Miss Kolb is a twenty-year-old brown eyed brunette, 5 ft. 4 in. tall, weighs 110 pounds and has 36 in. hips, waist 26 in. and bust 36 in. Miss Kolb later placed second in the contest for Miss Chicago. Judges were Russ Tolg, radio director of Batten, Barton, Durstine and Osborn Agency; Ken Craig, radio director of McCann, Erickson, and George Clements, account exec. for Chicago Car Advertising Co. I did not see Art Hjorth at this meeting so was unable to get the type picture of this contest he is famous for, however, am sending the regular press picture of the winner which was released for publication.

And now a little story for the kiddies, so listen children if you care to, and we will find out where the Horstman bear went. Mr. E. C. Horstman, engineering manager of ABC, somehow procured a little black bear



MISS WENR

HOWARD C. LUTTGENS

MAJOR CUMPSTON

In selecting these photos for publication, we noticed that very strangely, and in a manner not readily explained with the aid of a slide rule, the photo of the Master Control Room took on an added glow—as in the approach of a heavenly body—each time we placed the photo of Miss WENR close to the Master Control photo. With the aid of a pair of scissors and a pot of glue, we let our readers observe the magic effects of a Heavenly Body on a Master Control Room!—Ed. S.

cub while on vacation in the north woods this month (no, children, that wasn't his picture in Life Mag.) and being very proud of said bear cub he took it to the WENR transmitter and requested the fellows take care of it temporarily until he could provide better housing. I'm sure Mr. Horstman thought one more little bearing to look after wouldn't cause too much extra work for Rawson. Never-the-less that little bearing blew out of there in a great hurry sometime that night and at this writing has the run of Chicago's suburbs, we think. My only fear is that cool weather so near he is hibernating somewhere behind the power rack and next spring when the boys speak of getting bit they won't mean by Ben Franklin's kite stuff.

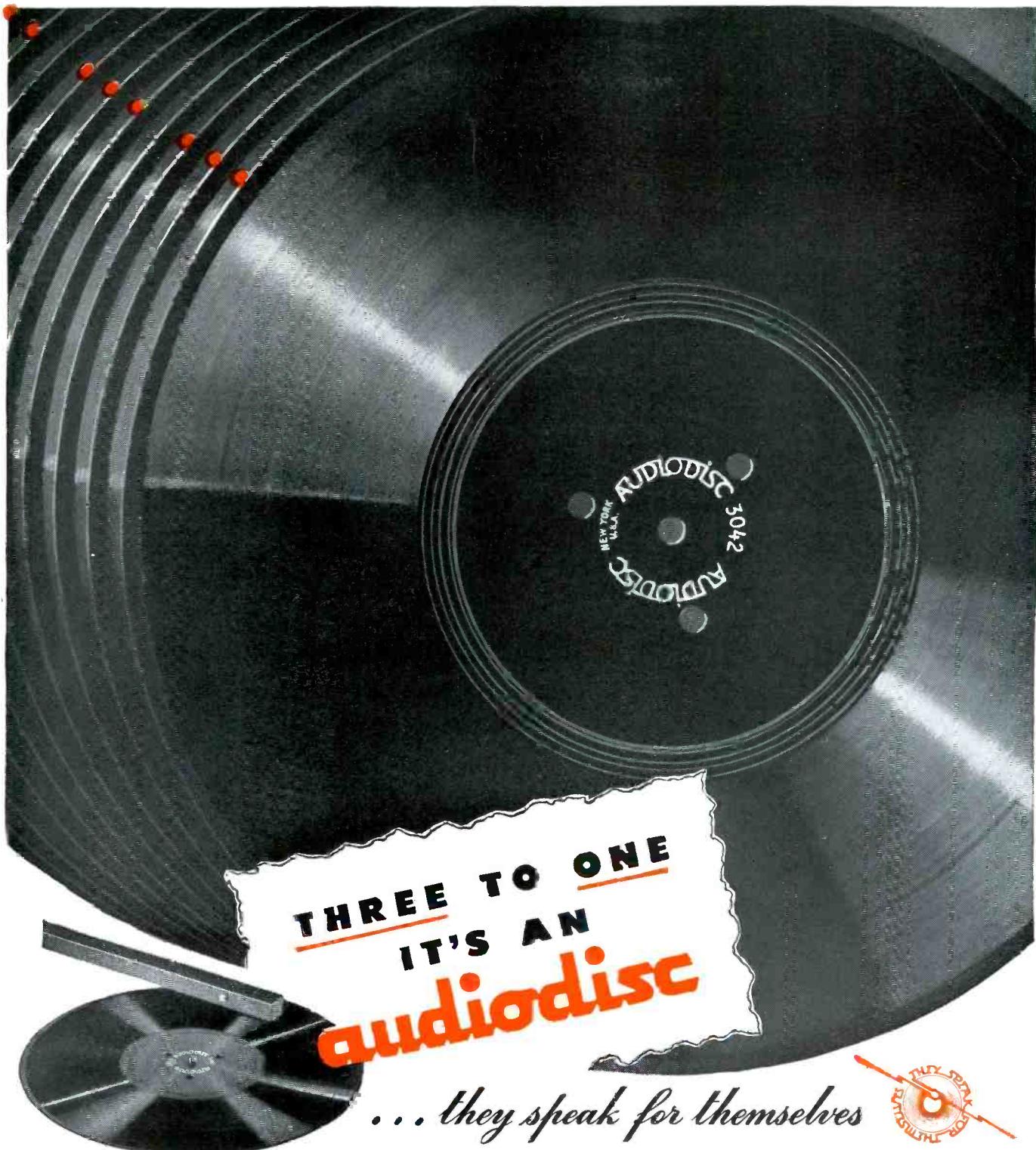
Al Scarlett is in the market for a pair of skates. "Dave" Davis reports two new Scully chip throwers have been installed in NBC recording, giving them ten channels in all. Al Scarlett is the only man in the world who can start two and stops, two Scullys at the same time.

I note that some ten members of local AFRA were visitors in Hollywood this month attending the annual AFRA convention. It was reported to be a great success,

more like old home week I guess as there are so many Chicago people in Hollywood now due to the exodus of the "Mills" shows.

Major L. W. Cumpston of the Australian Corp of Signal was a Chicago visitor this month. Major Cumpston formerly was an engineer with the MacQuarrie Network of Australia.

The ham news here is very slim this month. Bill Cole W9BU reports his new 20 meter beam works swell on 10 also, that is, with a 10 reflect and direct added but using the 20 meter center element as two halves in phase. He reports R9 in south Africa with it. W. T. Anderson of WENR transmitter reports that he is active again on twenty. I hear Dick Werheim W9GG giving every-one fqc. reports, he owns a 211 army job that is on the nose. The new gag the boys are using to grab off the DX is to call up the girl friend or folks of the GI that they are talking to and let him talk to them VIA ham radio. This is a swell stunt and if the phone company tries to stop it as they surely will, the GIs should raise the devil. Well, I'm sure there is much more that should be told this month but as I just received a phone call to play golf, so long, and 73s.



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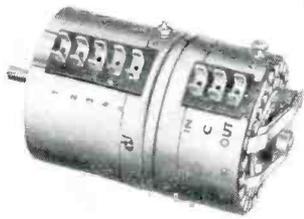
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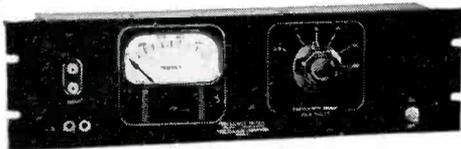
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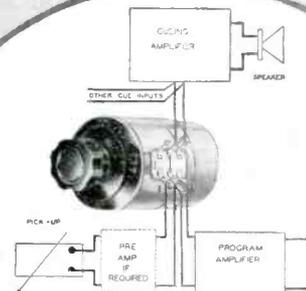
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