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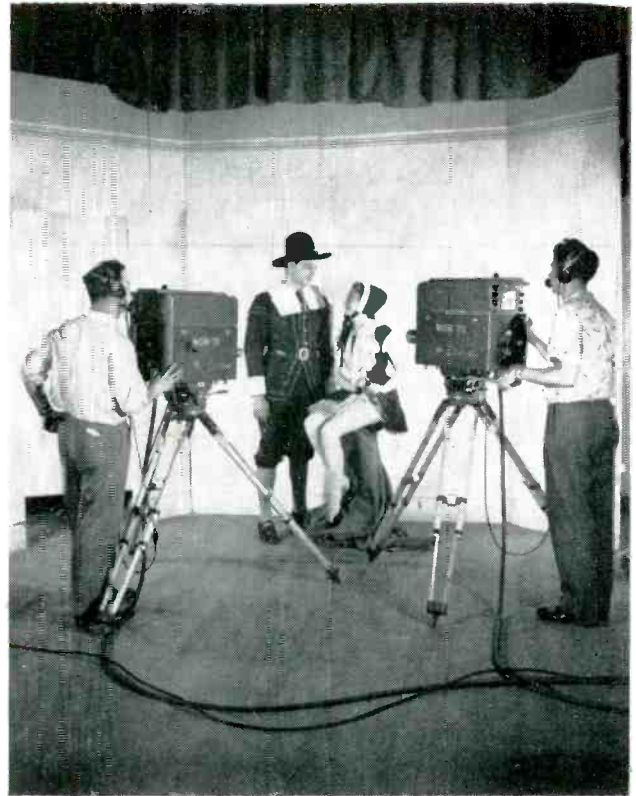
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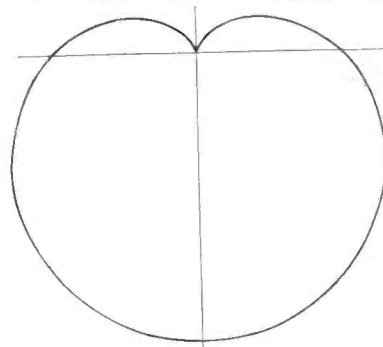
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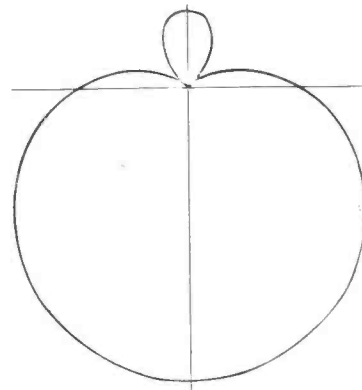
.. This is Cardioid

"Cardioid" means heart-shaped. It describes the pickup pattern of a microphone as illustrated in this diagram. Unwanted sounds approaching from the rear are cancelled out and the pickup of random noise energy is reduced by 66%. The actual front to back ratio of reproduction of random sound energy is 7 to 1.



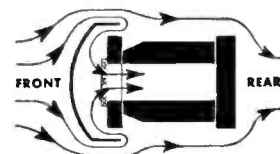
.. This is Super-Cardioid

"Super-Cardioid" also describes a pickup pattern and is a further improvement in directional microphones. The Super-Cardioid has a wide front-side pickup angle with greater exclusion of sounds arriving from the sides and the rear. The front to back random sound ratio is 14 to 1 which makes it twice as unidirectional as the "Cardioid." A 73% decrease in the pickup of random noise energy is accomplished.

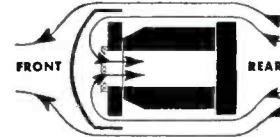


.. This is Uniphase

"Uniphase" describes the principle by which directional pickup is accomplished in a single Microphone unit. This is a patented Shure development and makes possible a single unit "Super-Cardioid" Directional Microphone eliminating the necessity of employing two microphone units in one case—it gives greater uniformity in production, greater ruggedness, lower cost for comparable quality and more uniform vertical pickup pattern.



Sounds entering from front.



Sounds entering from rear.

.. This is the result

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THE BROADCAST ENGINEERS' JOURNAL

Ed. Stolzenberger

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Business Mgr.**

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THE BROADCAST ENGINEERS' JOURNAL

OFFICIAL PUBLICATION OF THE N. A. B. E. T.

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FIFTEENTH ANNUAL MEETING OF THE NABET NATIONAL COUNCIL—DETROIT—OCT. 1948

The fifteenth annual meeting of the Nabet National Council met in Detroit, October 4 thru Oct. 8th.

Present were Nabet Chapter Chairmen Messrs. Royce Heintz of Baltimore; Arthur Hjorth of Chicago, also vice president; Harold Brandt of Cleveland; Koger Ellis of Detroit; Willard Dean of Dixie; Carl Cabasin of Engineering; Ben Doty of Hollywood; Donald Hale of Hudson; Donald Morey of Mohawk; Clarence Westover of New York; Bob Rudd of Omaha; R. J. Wilke of Philadelphia; E. M. Sollie of Pittsburgh; Edward Lynch of Rochester; George Pogue of Rocky Mountain; Richard Parks of San Francisco; David Lane of St. Lawrence; Donald Muir of Syracuse; John Hogan of Washington.

The meeting was presided over by Nabet President John R. McDonnell. In addition to the Chapter Chairmen, the following were also present: Executive Secretary and National Secretary-Treasurer Harry Hiller; National Representatives Clifford Gorsuch and George Maher; retiring Executive Board Member Eugene Clark; Journal Editor Ed. Stolzenberger.

The National Council heard the reports of the President, Vice President, Executive Board, Executive Secretary,



Nabet full-time officers George Maher, Harry Hiller, and Clifford Gorsuch.

National Secretary-Treasurer, National Representatives, and the Journal. In addition, extensive reports were heard from the Constitutional and By-Law Committee, the Budget Committee, and discussions by network Chairmen pertinent to upcoming network negotiations.

The Council heard in addition, the exploratory findings relative to effecting one New York City Nabet Chapter; they also

heard of large defects in some management-sponsored pension and retirement plans, and their legal status in terms of recognition of the plans by the Bureau of Internal Revenue.

The true role of a labor union was compared to that of an insurance company. Our national representatives and other officers were, by this analogy, "job insurance salesmen."



The National Council in session. Center, at head of both tables, President McDonnell. Clockwise around left table: Messrs. Parks, San Francisco; Lane, St. Lawrence; Muir, Syracuse; Hogan, Washington; Ntl. Rep. Gorsuch; Exec. Secretary-Treasurer Hiller; Rudd, Omaha; Wilke, Philadelphia; Sollie, Pittsburgh; Lynch, Rochester; Pogue, Rocky Mountain. Clockwise around table at right, Messrs. Cabasin, Engineering; Hale, Hudson; Morey, Mohawk; Westover, New York; Stolzenberger, Journal Editor; Ntl. Rep. Maher; Heintz, Baltimore; Vice President Hjorth, Chicago; Brandt, Cleveland; Ellis, Detroit; Dean, Dixie.



John Hogan, Chairman Washington Chapter, and member of the NABET Executive Board.

Public relations and press relations discussions brought out the fact that many universities were operating labor-management "clinics." The Taft-Hartley sickness was shown to have benefitted no one but the lawyers. The public relations discussion brought out the need to counteract the notion that everybody working in broadcasting enjoyed fabulous incomes, whereas actually, it is only the "Kate Smiths" and other headliners, and the station owners who are making any money out of broadcasting in the public interest. The technicians specifically are underpaid, have been consistently underpaid. The NAB—a union of employers—which operates outside "union regulations" has made a number of attempts toward diluting the proper place and prestige of the broadcast technician. They have engaged in this campaign, not to improve the public service, but to further



Seated, NABET President John R. McDonnell, member of the Executive Board; Vice-President Arthur W. Hjorth, Chairman Chicago Chapter and member of the Executive Board. Standing, Dick Parks, Chairman San Francisco Chapter and member of the Executive Board; Edward Lynch, Chairman Rochester Chapter and member of the Executive Board; Clarence Westover, Executive Secretary-elect.

increase the profits of the broadcasters. Broadcasters have been encouraged by the NAB to "promote" as many of their technicians as possible to titles outside

the union contracts. These "promoted" technicians of course are expected to appear as a corps of potential strike breakers—and thus silently serve to dampen and



National Council at banquet tendered in their honor by the Detroit Nabet Chapter. (Seated) Messrs. Ellis, Detroit; National Rep. Gorsuch; Exec. Secretary-Treasurer Hiller; President McDonnell; Vice President Hjorth, Chicago; National Rep. Maher; Hogan, Washington; (Standing) Brandt, Cleveland; Dean, Dixie; Pogue, Rocky Mountain; Sollie, Pittsburgh; Hale, Hudson; Cabasin, Engineering; Parks, San Francisco; Westover, New York; Lynch, Rochester; Rudd, Omaha; Morey, Mohawk; Muir, Syracuse; Lane, St. Lawrence; Heintz, Baltimore; Wilke, Philadelphia.



A Message to the Members of NABET

from

JOHN R. McDONNELL
President, NABET

We are constantly reminded that the strength of any union is ultimately determined by the scope, activity, intelligence, and determination of its members. The development of these attributes is the responsibility of both the members and the officers of the union.

Unions are faced with a period of potential strife—both externally and internally. It behooves us to prepare for all eventualities. The National Council has taken steps to strengthen and expand the coverage of NABET's full time officers. The membership in their turn, should familiarize themselves with the affairs of the union, its officers, and policies.

Let us all work toward our ultimate goal of one union for Radio and TV men—a union of, by, and for the broadcast-television engineer.

Sincerely,

(Signed) J. R. McDONNELL, *President.*

Read well the plight of the IBEW radiomen, in this issue. Militant activity can keep NABET strong!

DO WE HAVE YOUR ZONE NUMBER?

DEADLINE is 2nd OF EVERY MONTH. EXAMPLE: COPY RECEIVED MARCH 2nd APPEARS IN THE APRIL ISSUE, IN THE MAIL APRIL 1st.

Heading Cuts for Chapter news columns. Chapters without regular heading cuts and desiring same, should send in photo, cartoon, or drawing of subject matter that they wish used to identify and distinguish their column.

NABET EMPLOYMENT SERVICE

Due to the day-to-day changes in status and availability of unemployed NABET members, it has not been deemed practical to publish such a list of names in each issue of the Journal. Instead, each available member should immediately notify the National Office, with copies to his Chapter Chairman, of availability together with brief resume of experience, etc., and notify them immediately of any change in status or availability. The Chapter Chairman for the area, and the National Office, each of whom are called upon to fill vacancies, will thus be kept up-to-date to the mutual advantage of all concerned.

National Association of Broadcast Engineers and Technicians

NABET is your democratic union, because
NABET rank-and-file members control
their union.

NABET means good trade-union practice.

NABET is the progressive union in the
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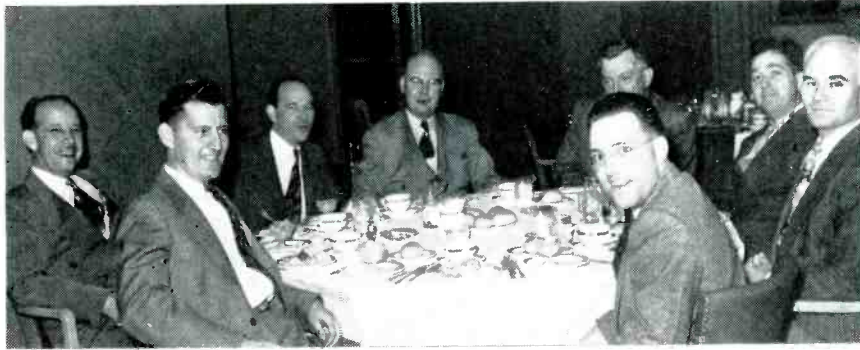
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Typical dinner table at the banquet. National Councilmen Doty of Hollywood, Hogan of Washington, Pogue of Rocky Mountain, Heintz of Baltimore, Rudd of Omaha, seated with members of the Detroit Nabet Chapter.



WOW televises the time-honored story of John Alden speaking for Miles Standish. The television-type Priscilla is Donna, age 18—and obviously a television “find.”

NABET television engineers A. H. Maller (left camera) and Larry Sibilia (right camera) produce the electronic pictures.

In the photo, John Alden is played by Merrill Workhoven, WOW chief announcer, and Priscilla is played by Donna Newton, WOW night hostess.

At same time as these photos were taken, a promotional and educational movie was made, which will demonstrate the television story at WOW—Omaha.

nullify the efforts of the unionized technicians at subsequent negotiations.

A thorough discussion followed relative to television job mechanics and job definition, and their relation to the overall TV operation. Nabet's good work in behalf of all TV technicians was emphasized in the disclosure of a recent New York City inter-union meeting of TV technicians, which resulted in clarification of several modes of operation. Technicians of all the unions represented indicated great enthusiasm, and requested that follow-up meetings be arranged. These meetings will lead to uniformity of practice, and will help to uphold the position of the technicians.

The place of ABUG—the Ass'n of Broadcast Unions & Guilds—was brought out. Its function is to act as a clearing house for mutual problems and ideas. It was obviously important that all Nabet officials take an active part in these inter-union meetings. For the information of all, ABUG was stated to exist for the purpose of providing for the informal exchange of information between participating unions. No commitments by any party. Clearing house for handling mutual problems. In the matter of the FCC Mayflower case, ABUG demonstrated the effectiveness of unified action and showed that when a unified presentation is made, our position takes on greater stature; the FCC was noticeably impressed by the ABUG presentation. The respective Chairmen spoke of ABUG activity and cooperation in New York, Chicago, Hollywood, and Pittsburgh. The National Council recommends the active participation in ABUG by all local Nabet Chapters.

Announcement was made of the proposed move of the Nabet National Office from Brooklyn to Manhattan, which will take place mid-November.

It was pointed out that Arbitration clauses are legal in only 18 out of the 48 States.

The network contracts were recognized to be of prime importance, because they become the patterns and set the pace for subsequent independent station negotiations.

Differences of opinion were forcefully voiced preceding the final resolution of elections of officers and the National Council ratification of Presidential appointments.

John R. McDonnell and Arthur Hjorth were retained as President and Vice-President, respectively. C. Westover was ratified as Executive Secretary. Harry Hiller was ratified as National Secretary-Treasurer. National Representatives Clifford Gorsuch and George Maher were ratified. The following members of the National Council were elected to the Executive Board: President McDonnell, and Messrs. Hjorth, Lynch, Parks, and Hogan. The need for a West Coast representative was agreed upon, and was provided for in the budget. Announcement of the appointment and ratification thereof is expected soon.

President McDonnell suggested that in behalf of the three Chairmen of the New York Chapters, he would invite the sixteenth meeting of the Nabet National Council to convene in New York City.

The National Council adopted an official organization chart, for the information of its full-time officers, as understood by the membership and endorsed by the National Council.

The fifteenth annual meeting of the Nabet National Council adjourned in an atmosphere of unity and with a feeling of security in its ability to handle and cope with all of the problems of the coming year.

NABET

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BROADCAST ENGINEER

Glass-Sealed Switches and Relays *

By C. G. McCORMICK

Bell Telephone Laboratories Switching Apparatus Development

In connection with various projects undertaken by the Laboratories for the Armed Services during the late war, relay circuits were required for performing a number of essential high-speed switching operations. Because of the wide range of conditions to which this equipment might be subjected, ordinary telephone relays could not be utilized in all cases. In planes, for example, the equipment may be exposed to rapid and wide changes in pressure, temperature, and moisture conditions; in ground installations, tropical dampness, desert winds and arctic frosts have to be considered. Some type of hermetically sealed switch that would prevent moisture or dirt from collecting on the contacts and insure against excessive erosion of the contacts under low pressure exposures seemed essential to meet these exacting conditions.

For a number of years, a hermetically sealed reed type switch had been under development in the Laboratories, but it had been produced only in very limited numbers and for very limited applications. With the advent of the war, however, considerable impetus was given to both the development and application of these devices, with the result that a pilot plant for their manufacture was set up in the Laboratories early in 1944.

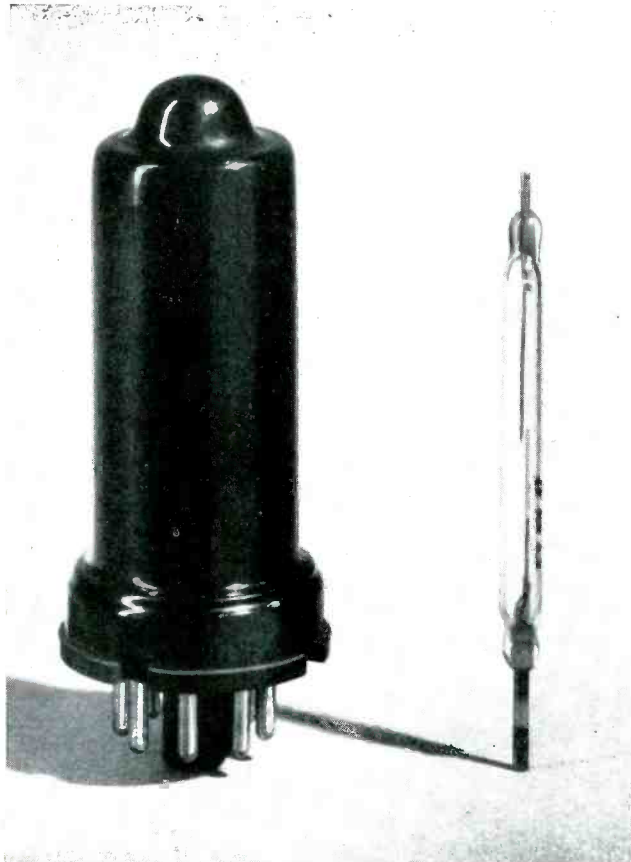


Fig. 1.—One type of dry-reed relay. Complete assembly at the left, and the switch element alone at the right.

* Reprinted by permission from the Bell Lab Record, Sept. 1947.

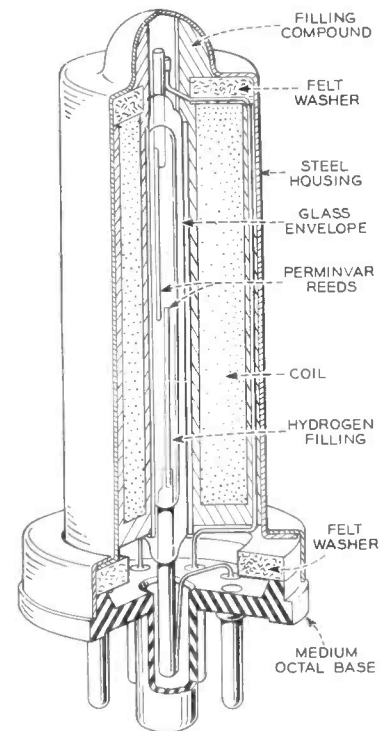


Fig. 2.—Cross-section of one of the dry-reed relays.

Two types of glass-sealed switches were produced; one known as the dry-reed type and the other as the mercury-contact type. Both consist of slender glass tubes, at the end of which are sealed metallic members, one of which was tubular so that the assembled switch may be evacuated and supplied with a reducing atmosphere. In the dry-reed type switch, shown in Figure 1 and in cross-section in Figure 2, a gap is provided at the time of sealing between the overlapping magnetic reeds extending from the ends. When this switch is placed in a magnetic field in a direction lengthwise to the tube, the overlapping ends of the reeds are drawn together, causing a circuit to be completed between the terminals protruding at each end of the switch.

The mercury-contact type, shown in Figure 3 and in cross-section in Figure 4, is more complicated in that both a back contact and a front contact are provided. Both of these contacts are sealed in at one end of the glass tube with a fixed separation between them. An armature assembly on which the other contacting member is mounted extends from the opposite end of the glass tube. At the time this latter end is sealed, the armature is positioned so that its contact will press against the back contact, which is mounted on a non-magnetic member. The front contact is mounted on a magnetic member which overlaps the armature slightly. When this switch is placed in a magnetic field lengthwise to the tube, the armature is attracted toward the front contact, causing the back contact to break and the front contact to make. A small amount of mercury is inserted be-

Performance Characteristics of Dry-Reed and Mercury Sealed-Glass Relays

	<i>Mercury-Contact Relay</i>	<i>Dry-Contact Relay</i>
Magnetic Material	Permalloy	Perminvar
Contact Material	Platinum bathed in mercury	Gold infused in perminvar
Gaseous Environment	Hydrogen at 250 pounds pressure	Hydrogen at atmospheric pressure
Nominal Power—Operate18 watt03 watt
Nominal Power—Release10 watt01 watt
Time to Operate on 48 v. d-c0047 sec. (approx.) to make front contact002 sec. (maximum)
	.0051 sec. (approx.) to break back contact	
Time to Release on Open Circuit0039 sec. (approx.) to break front contact001 sec. (maximum)
	.0035 sec. (approx.) to make back contact	
Current Rating*	5 amps. (20 watts)25 amp.
Life Expectancy with Adequate Contact Protection	10 ⁹ + operations	10 ⁸ + operations

*Current rating dependent on voltage and load impedance and not to exceed value specified.

fore the switch is completely sealed. Most of it remains at the lower end of the tube, which in operation must be held approximately vertically. It is fed continuously to the contacts by capillary action. The presence of mercury imposes a limitation of -40 degrees C as the minimum ambient temperature, since at this point the mercury freezes and the switch becomes inoperative. Due to the spacing employed and the surface tension of the mercury, the front contact usually makes upon operation of the armature before the back contact breaks,

causing a momentary bridging of the front and back contacts. Bridging also occurs upon release of the armature. The operating field may be provided by a solenoid in which the glass-sealed switch is placed, or by mechanically bringing a magnet close to the tube. By providing a steady field of sufficient strength and at the same time an alternating field, polar operation can be obtained, and the switch will operate at a rate equal to the frequency of the alternating field, whereas without the steady field, the rate of operation would be twice the frequency, provided the frequency is not too great.

Most of the relays are made as plug-in devices using a metal vacuum tube type cover and a standard small wafer octal vacuum tube base. Other forms were provided as dictated by the apparatus with which they were to be associated, and need

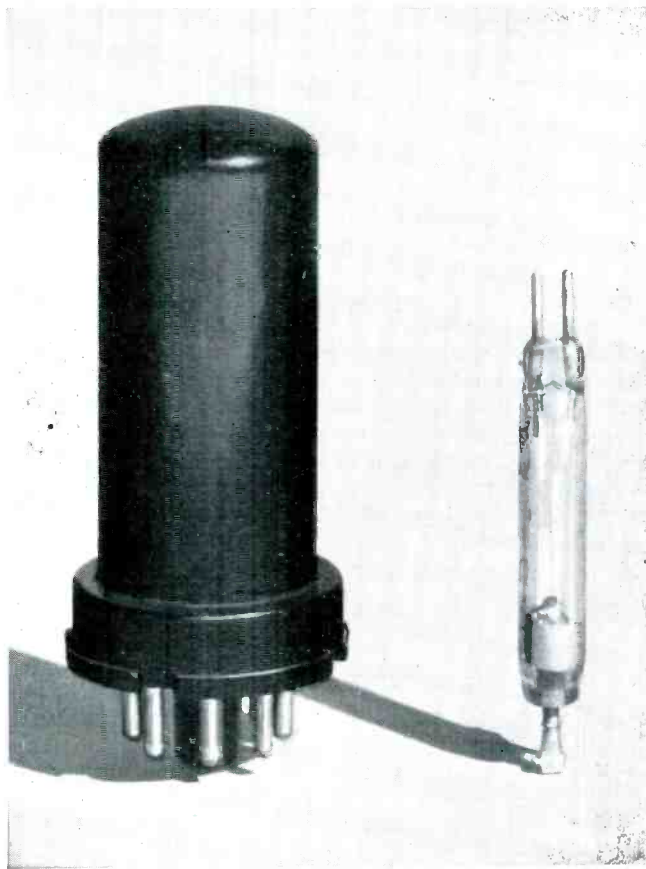


Fig. 3.—One type of mercury glass-sealed relay; completely assembled at the left, switch unit at the right.

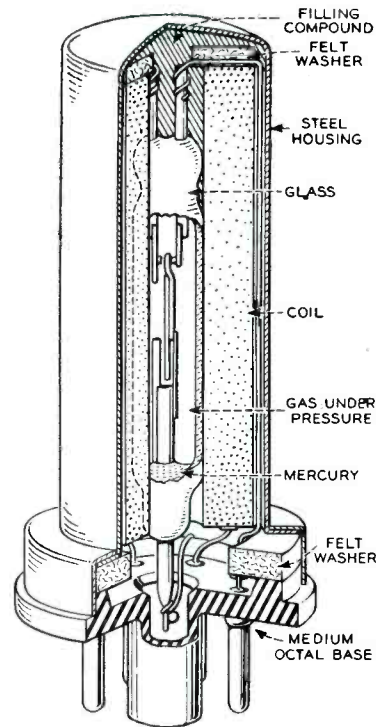


Fig. 4.—Cross-section of one type of mercury relay in which both a front and back contact is provided.



CHICAGO

By Minor J. Wilson

This is my farewell column for the CHICAGO chapter, starting next month VERN MILLS will take over. Your reporter has resigned from NBC to establish his own radio station in partnership with his brother. KBOR will operate in BROWNSVILLE, TEXAS with 1 KW.

VERN MILLS is now transmission engineer since PAUL MOORE has transferred to television.

ART HJORTH is building a summer cabin in WISCONSIN and has been chopping down trees during his vacation. We hear he also digs a mean pit for an ultra modern type outhouse. Whatever ART does you can be sure it is a good job whether it is running NABET or digging a hole for other purposes.

DON FITCH is also building a house, that is he is if he can locate the cement to pour the basement. Better come on back to TEXAS, DON there is plenty of cement here, we are having no trouble.

Many of the new men who have been with NBC for summer vacation replacement have been transferring to television. It is swell to know they will be staying with the company.

ABC started the ball rolling with a bang and is helping to make CHICAGO very television conscious. ABC has so many new men that Secretary WASHBURN is having a hard enough time keeping up with the names, there have been so many of them that this column has not attempted to keep up with the listing of the names.

RUS STURGIS has transferred to NEW YORK at last, RUS couldn't wait to get back East. Swell luck, RUS.

RALPH DAVIS is at last drawing a deep breath, DST operations are a thing of the past for another year.

JIM DAUGHERTY managed to get an apartment for his bride, FRANK GENEROUX finally got his ham ticket and is starting out to work the world, CHUCK CORLISS remains one of life's major problems, to himself. HAROLD ROYSTON spends his time tearing down one beam and putting up another and so does PETE CAVANAUGH. HUGH WHITE and ED HOLM can tell you all about the midnight shift and what's wrong with it (nothing as long as they don't work it).

So long fellows, it has been swell working with you for eleven years and it has been very pleasant working for NBC. It was with a deep regret that I severed my connection with NBC and said goodbye to a great gang of fellows. I hope many of you will come to TEXAS on your vacation and will look me up at KBOR located in GOD'S COUNTRY.

GLASS SWITCHES—from page 8

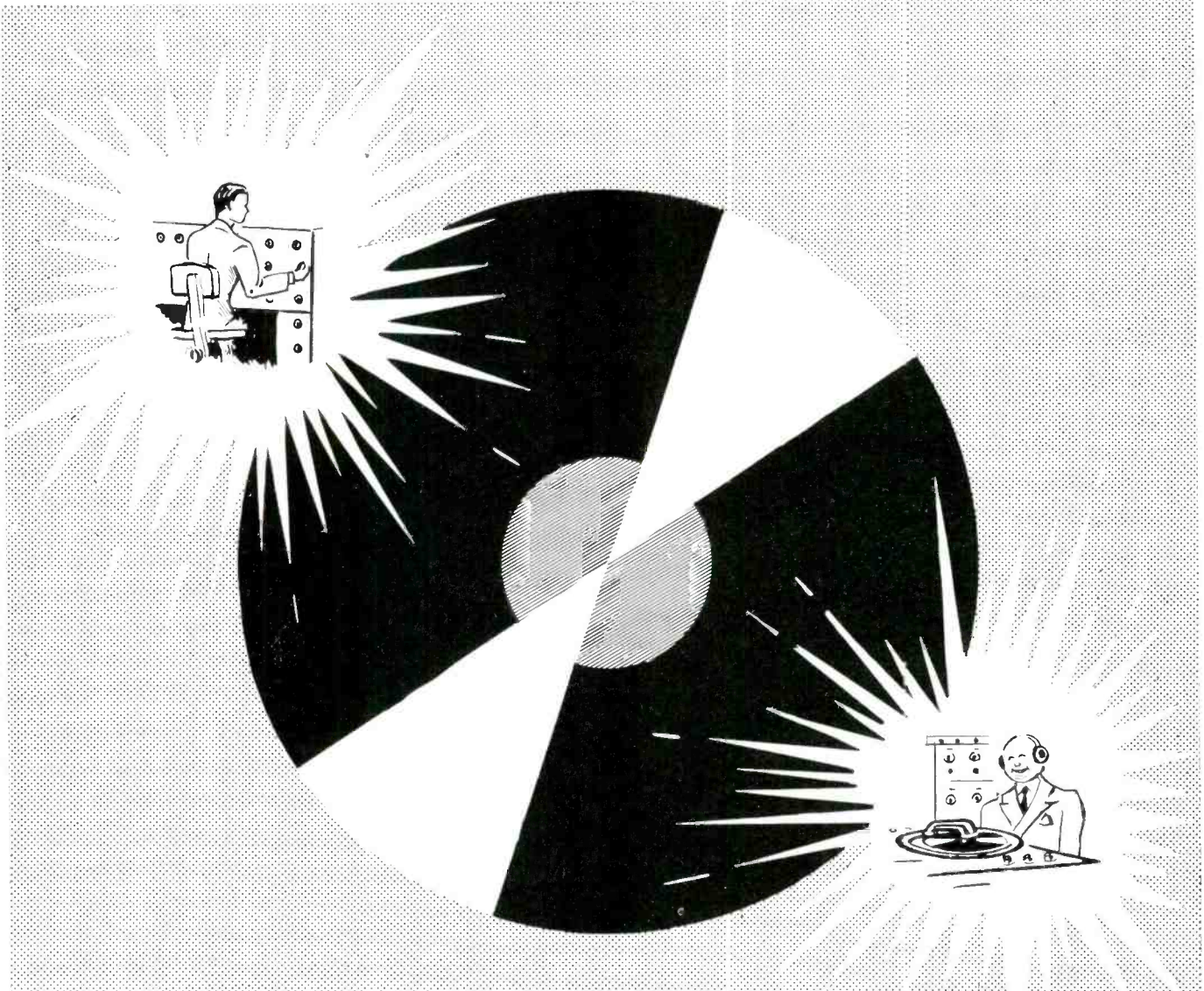
not be discussed further except to say that they all involve the same fundamental features of one or more reeds sealed in a glass container and operated in a reducing atmosphere. Low mass is always required to obtain high operating speeds and to minimize chatter of contacts. The performance capabilities of the different devices for two typical relays are given in the accompanying table.

When the pilot plant for producing the above switches and relays was originally planned, it was thought that the total demand for all of the different types of devices would not exceed about two thousand per month. This was early in 1944. Later in the year, the increase in tempo of war preparations made it clear that this figure was quite inadequate, and that additional facilities would be required. To meet the increase of demands, it was agreed with the Western Electric Company that the Laboratories facilities would be expanded to produce 10,000 mercury-contact switches per month together with a somewhat smaller number of dry-reed switches, the facilities to be operated on a two-shift basis. Since the manufacture of the associated parts and the assembly of switches into relays involved operations already familiar to the Western Electric Company, the responsibility for assembling mercury-contact switches into relays was assigned to the Bayonne Plant. To carry out our end of the bargain of producing the switches, arrangements were made whereby personnel of the Development Shop would be available as required, working under the supervision of the development engineers.

By the early part of 1945, the increased facilities and personnel had been provided, and the anticipated increase in production rate had been fully achieved. By this time, however, the war demands had again jumped, this time to such an extent it was felt that the Western Electric Company should take over full responsibility for mercury-contact switch production. It was thought that the experience gained in the pilot plant, together with the facilities used, should be made available to the Western Electric Company. They would make additions to the facilities as the demands required. In addition, the Laboratories personnel would be lent to the Western Electric Company for such period as they felt necessary for training their own personnel. Accordingly, the Laboratories facilities and personnel were moved to the Western Electric Tube Shop on Hudson Street, at which point operations were resumed two days later. The Laboratories personnel were replaced within about one month, production going forward with the Western Electric personnel until V-J Day, when production was discontinued because of the cancellation of war contracts. It is to the credit of the Western Electric organization that they were able to take over the responsibilities of such a new project in such a short time.

Although the mercury-contact relay represented the major part of the war requirements, the demand for dry-reed switches and relays increased considerably, especially during the early part of 1945. By the time the Laboratories personnel were released by the Western Electric Company, the demand for these devices had grown to the point where it was necessary to re-establish the plant at West Street for their production.

With the termination of war contracts, development at Bell Laboratories were continued to seek ways of improving designs and of applying the unique characteristics of these switches to Bell System needs. At present, a small but rapidly growing production for such purposes is under way.



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The Plight of IBEW Radiomen

Heavy demands upon the IBEW jurisdiction in TV were publicly proclaimed. The New York IBEW L.U. 1212 membership at their meeting of Sept. 9th were very much concerned over the IATSE demands on TV jurisdiction. This is all reported in the October "1212 News." The item goes on to state that the 1212 delegates were instructed "on what steps to take" to protect the radiomen's TV jurisdiction.

NABET can tell you what these steps were, and that NABET stood ready to assist the IBEW radiomen in their recent effort to attain recognition and TV jurisdiction.

Now that the Atlantic City IBEW Convention is over, IB's local officers may now tell you that there never was any intention to bargain away the IBEW TV jurisdiction. That certainly was not their position at several NABET-IBEW meetings in New York, preceding the Atlantic City Convention. The IBEW radiomen are concerned because of the Tracy-Walsh IB-IA top level deal that arbitrarily gave IATSE 50-50-jurisdiction at the *Mr. Roberts* CBS TV program; whereas, NABET, under equal pressure and implied threat from the same IATSE at the premier of WJZ-TV at the New York Palace Theatre, would have no part of the IATSE deal, and made it stick. IATSE has succeeded in obtaining postponements of the final ruling in the injunction case, in the hope that NABET will make an "out of Court" settlement with the IATSE. The IBEW radiomen were alarmed because the IBEW President showed no concern over the IATSE demands on the radiomen's TV jurisdiction, but rather appeared inclined to "go along" with IATSE 50-50 work division.

Instead of "brotherly help and assistance" from the Federation, wholesale jurisdictional demands have been made against the IBEW radiomen by the IATSE in its publicly proclaimed TV jurisdiction.

The IBEW radio leaders in New York, at least, have promised their radiomen members that a solution of this problem of inter-AFofL jurisdictional strife would be settled to their satisfaction at Atlantic City.

In the August 1948 "1212 News" the president of New York IBEW Local 1212 made the following statement of the IBEW Radioman's problems:

QUOTE

"The work of Radio and Television Broadcast Engineers in no wise approximates work done by IATSE but they are fighting hard to get it away from those who have it, and to whom it rightfully belongs. Unfortunately this will not keep it for us. We need to fight back and as the International President has stated, 'our efforts to combat this attack must be coordinated.'

"There is no better way for the Radio and Broadcast Television men to coordinate their efforts within the IBEW than to have their own Vice-President handling their own affairs. Affairs which are peculiar to this one industry and not to the IBEW at large. This one step could prove the greatest boon to the IBEW in the Radio and Television Industry. It would seem to be in line with what the International President said in his letter of July 2, 1948 and which we have quoted to you. The IBEW could create history by following this lead.

"There is need for a head of the radio organization of the IBEW. It is a severe need and has been felt for some time. With such a head there is no doubt but that organization will take place; thus better the conditions of all.

"Our problems are in the entertainment field. They are best solved by those working in this field. It was with this in mind, years ago, that the I.O. had to hire broadcast men to try and organize men in the broadcast field. Prior efforts had been unsuccessful. This one step by the I.O. proved to be a bit of what was needed. It looks as though the I.O. should go all the way and really organize the field."

END QUOTE.

And in the same issue of "1212 News," the Business Manager refers to this column just quoted above, and makes this observation:

QUOTE

"Elsewhere in this issue is an article by (1212 Pres.—Ed.) Arnold King. Read it. You should find it food for thought."

END QUOTE.

It is thus clear beyond question that the IBEW radiomen are vitally concerned about their submergence within the electricians, and jurisdictional strife—this time from the IATSE. It is equally clear that the President and the Business Manager of 1212 have carefully weighed their words, quoted above.

Then from the Sept. 1948 "1212 News," the 1212 President's column tells of the sad state of affairs for the IBEW radiomen, which reveals to us, at least, that their prime troubles root in the fact that they are not in a radioman's union, and therefor can hardly expect understanding "Of, By, and For the Broadcast Engineer." We quote the 1212 President's column in full:

QUOTE

"It is too bad that ALL members were not present at the Local's August meeting. The membership will do well to pay close attention to all events for some time to come. The usual attention shown at contract time is no longer sufficient. A wrong majority decision can go a long way toward wrecking the Local that has been so long in the making.

"Fortunately, the last meeting, after hearing of a proposed jurisdictional division between IBEW and IATSE became quite aroused. Recollections of the Brown-Petrillo deal—and of Locals leaving IBEW once more filled the meeting hall. The recent 50-50 deal was brought up. All this is very unpleasant. We have no fight with IATSE. We want none. Moreover, we not only don't want to, but won't give our work to them. That was the tenor of the meeting. The Local also sent a strongly worded telegram to the International President.

"With the belief that all members should know exactly what brought about the above, a summary of the visit of Calame and myself to the I.O. will be given. We were in Washington on the 29th of July. Calame by invitation, I as an observer. Other Locals present were: 45 with Tindall, 1220 with Warrmer, 1224 with Codding, 1400 with Bareham. These are the Locals with Television. However, we believe other locals have television. Louisville must have television because they have an injunction against IA. It is believed Milwaukee, 715, also has TV and perhaps Minneapolis. St. Louis, 1217, was invited but did not attend. Of those present 45, 1212 and 1224 were against the proposal and 1220 and 1400 would take it as a way of avoiding NLRB elections.

"The proposal was to give IA the projection and stereoptican sound production (effects) and all film and film cameramen. All jobs we perform and have performed since television began. For this generous donation we would receive nothing. We would also be put in the position of organizing for IA.

"The August 10 issue of the N. Y. Times carries a news item—restraining IA from interfering with WJZ-TV premiere. This is what should have happened at the time of the 50-50 deal. In the article the IA is quoted as not wanting to compromise its demands because it was negotiating an agreement dividing jurisdiction over certain workers with the IBEW. Mr. Walsh was quoted as saying he feared the electrical union (us) would withdraw from this pact if he permitted the broadcast engineers to operate the cameras at the Palace. The word cameras in this instance means the electronic cameras. It can mean nothing else. At Washington we were told IA was not claiming this. Not much.

"The week of our meeting in Washington also saw Billboard and Variety carrying articles stating that an announcement will be forthcoming as a result of IBEW and IATSE meetings; whereby, jurisdiction in television will be settled. The settlement to be on a national scale. The Billboard article named the so-called Chicago plan. This plan had heretofore been denounced by IBEW. (The Tracy-proposal however included it.) The Variety article was by IATSE's International President. It attempts to show how IATSE is entitled to television. It ignores the truth that television is broadcasting. It makes mention that IA does not like others to say they are 'muscling in.' What else can be said?"

END QUOTE.

Then came the Atlantic City IBEW Convention. Were the hopes of the IBEW radiomen realized? The IBEW radiomen asked for a separate charter for radiomen, or at the very least a separate VP heading up the radiomen within the present Charter. They got a committee. That's what the radiomen received from IBEW President Tracy himself, as stated in the "1212 News" of Oct. 1948.

The IBEW radiomen's plight in TV jurisdiction is well known, and has been freely discussed in "1212 News." IBEW-IATSE deals were public secrets, and the IBEW radiomen were going to Atlantic City to demand support of IBEW TV jurisdiction. What did they get? They got a *statement*. The Business Manager of 1212 said in his Oct. 1948 "1212 News" column:

QUOTE

"President Dan Tracy stated emphatically, in effect, that he never had and never would give away IBEW jurisdiction. That should be most heartening to all of us."

END QUOTE.

The Business Manager of 1212 thus injects a broad disclaimer in behalf of IBEW President Tracy insofar as wrong doing or intent leading to giving away of IBEW radiomen's TV jurisdiction; this disclaimer appears to be in strange contrast with another item in the same issue of "1212 News" as follows:

QUOTE

"Sept. 9th Meeting—The meeting, attended by several hundred members, concerned itself chiefly with IATSE demands on TV jurisdiction. The membership then instructed the dele-

gates to the IBEW Convention on what steps to take in order to protect 1212's jurisdiction."

END QUOTE.

Whether or not the IBEW-IATSE 50-50 Tracy-Walsh TV jurisdictional deal was real or fancied will have to be judged by the record, and by statements made by IATSE President Walsh which may be read in the daily and trade papers. NABET's stand can be judged by its record in behalf of its members and by the degree of cooperation and still standing offers of assistance to the IBEW radiomen.

The IBEW radiomen will also have to determine if the advisory radio committee is an adequate substitute for autonomy under a separate charter or separate VP for radiomen. President Tracy alone can permit the IBEW Constitutional change that would give the radiomen autonomy. But the Atlantic City convention failed to produce the necessary IBEW Constitutional change that would free the radiomen for a separate charter. In twenty-five years of broadcasting, the IBEW has failed to recognize broadcasting in all its forms as a science apart from electrical work.

Radiomen can no longer afford to permit union politics to prevent or delay the achievement of one union for radiomen.

The IBEW radiomen will have to determine if their radio committee is preferable to one union for radiomen.

The primary motivating force of NABET is the welfare of the radiomen, and it should be abundantly clear to all that radiomen can best handle their own union problems.

For jurisdiction, the IBEW radiomen got a statement.

For autonomy, the IBEW radiomen got a committee.

These conflicts clearly set forth the need for one union for radiomen. NABET is the only union that is 100% OF, BY, and FOR the broadcast engineer. NABET is on record as 100% in support of one union for radiomen. The prompt achievement of one union for radiomen is the only assurance that all radiomen will maintain their rightful TV jurisdiction. That "one union" will have to serve radiomen *first*, and not take second place to other skills or crafts.

NABET is not in competition with any other union, simply because NABET is the *only* union of, by, and for the broadcast engineer.

Radio and television engineers interested in their future welfare are invited to investigate all of the facts.

Contact any NABET Officer—
See Page 4

NABET

OFFERS ONE UNION FOR RADIOMEN

The NAB and its anti-labor attitude turns out to be the strongest answer to the broadcast engineer who would ask, "Why should I belong to a broadcast technicians' union?"

The solution to the broadcast engineers' problem of honest, competent, and highly specialized union representation requires a single national union, if their place in radio is to be bettered.

NABET is the *only* national union created expressly to serve the broadcast engineers and technicians.



Review of Current Technical Literature

By Lawrence W. Lockwood

Communications—August 1948

HIGH- OUTPUT SIGNAL GENERATOR FOR ANTENNA MEASUREMENTS—H. Eidson, Jr.

High output permits application during summer static periods, measurement of antennas with resistance as low as 25 ohms, checking of matching networks and transmission lines, etc.

TV TRANSMITTER DESIGN—G. Hamilton

Part IV Concluding installment covering measuring techniques: the measurement of transmitting power output (Calorimeter method), measurement of transmitter regulation and output variation, measurement of amplitude versus frequency response, and measurement of transient response.

A STANDARD SIGNAL GENERATOR FOR FM BROADCAST SERVICE—D. Sinclair

Signal generator for testing FM receivers features oscillator-reactance circuit, adjustable indicator and auxiliary scale for standardizing attenuator in terms of meter reading, and thyatron 6AQ6/6H6 rectifier and regulator circuit.

Proceedings of the IRE—August 1948

DISTRIBUTED AMPLIFICATION—E. Ginzton, W. Hewlett, J. Jasberg, J. Noe

This paper presents a new principle in wide band amplifier design. It is shown that, by an appropriate distribution of ordinary electron tubes along artificial transmission lines it is possible to obtain amplification over much greater bandwidths than would be possible with ordinary circuits. Practical amplifiers, designed according to the principles described, have been built and verified theoretical predictions.

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MODERN SINGLE SIDEBAND EQUIPMENT OF THE NETHERLANDS POSTAL TELEPHONE AND TELEGRAPH—C. Van Der Wyck

After an introduction, a short description is given of the equipment developed before 1940, followed by a survey of the principles of the modern equipment.

SPECIAL POWER DISTRIBUTION OF CATHODE RAY PHOSPHORS—R Bowie, A Martin

This paper embodies some of the results of a study undertaken because of the lack of substantial agreement among calorimetric determinations made from cathode ray tube screens of television manufacturers in the United States.

MICROPHONISM IN A SUBMINIATURE TRIODE—V Cohen, A. Bloom

The simple theory of the symmetrical plane triode has been applied to the calculation of the change in plate current as a function of motion of the grid and cathode. A few general comments are given regarding tests for microphonism and the design of tubes.

Radio and Electronics—July 1948 (New Zealand)

AN IDEA FOR A HIGH FIDELITY TUNER—

The problems found in attempting to realize high audio quality from a broadcast band receiver are discussed, and a circuit is presented that will be new to a number of readers.

Tele Tech—August 1948

TRANSISTOR MAY REPLACE VACUUM TUBES—

Bell lab demonstrates germanium crystal device which amplifies and oscillates. Inventors display tubeless radio receiver. Observers suggest transistor might replace some tubes in TV sets; industry comments pro and con.

TAXI TELEVISION

Experiments with converted model VT 71 suggest practical application to vehicles; tests furnish engineering data.

ENGINEERING AN FM-AM STATION—B. Osbahr

Description of the design of WFAS, a new FM-AM station in White Plains, N. Y.

DC RESTORATION METHODS IN TELEVISION RECEIVERS—S. Deutsch

Study shows that grid leak bias and diode methods of DC restoration in television are equally effective with specific advantages to each system.

TALK BACK SYSTEM—A. Kelly

Designed to facilitate on and off the air communications which is particularly applicable for FM broadcasting.

Audio Engineering—August 1948

A PRACTICAL IMPEDANCE BRIDGE—J. Winslow

Complete constructional details for desirable addition to the test equipment complement of the audio engineer or experimenter.

ELECTRON TUBE PHONOGRAPH PICKUP—H. Olson, J. Preston

Design and performance characteristics of a new type of pickup.

SIMPLIFIED DYNAMIC NOISE SUPPRESSOR—C. McProud

A three tube preamplifier combining low-frequency equalization and a new type of dynamic noise suppressor for use with magnetic pickups.

HEATER SUPPLIES FOR AMPLIFIER HUM REDUCTION—F. Smith

Practical methods of reducing hum to a minimum.

EXPERIMENTAL GERMANIUM CRYSTAL AMPLIFIER—S. White

Constructional data on the germanium crystal amplifier.

Electronics—July 1948

DESIGN FACTORS FOR INTERCARRIER TELEVISION SOUND—S. Seeley

Large scale production of television receivers employing intercarrier sound has focussed attention on the advantages and disadvantages of the system. This review emphasizes problems facing transmitter and receiver designers.

WCBS NEW GRAND CENTRAL STUDIOS—A. Chamberlain

Design criteria for video and audio facilities capable of meeting the requirements of complex television program production are discussed in relation to future expansion. Included will be special provisions for studio lighting, air conditioning, communications, and sound effects.

NOISE GENERATOR FOR RECEIVER MEASUREMENTS—P. Sulzer

Diode noise generator permits simplified procedure in the measurement of noise figures and receiver input resistance. The receiver bandwidth need not be known and measurement is independent of the response of the receiver.

PHOTOMETRY IN TELEVISION ENGINEERING—D. Epstein

This introduction to fundamental photometric concepts and measurements provides an understanding of principles and methods whereby performance of television receivers may be evaluated.

LABOR HISTORY — VIII.

(From the Labor Info-Bulletin)

Organized labor played an active role in the World War II production program and was represented in many war agencies, starting with the Advisory Commission to the Council of National Defense, established in May 1940.

With the creation of the Office of Production Management in January 1941, Sidney Hillman, president of the Amalgamated Clothing Workers of America, was appointed associate director general by President Roosevelt.

In December 1942 top representatives of the AFL, CIO, and Railway Brotherhoods were appointed to the Management-Labor Policy Committee, a consulting body for the War Manpower Commission. Similar joint committees functioned in regional and local areas.

Under the auspices of the War Production Board, labor-management committees were established in many plants for the purpose of stimulating output and reducing absenteeism. Most of the other war agencies worked out procedures for utilizing the cooperation of unions in their programs.

Organized labor participated directly in Government action to adjust industrial disputes. Labor representation on the tripartite National Defense Mediation Board, created in 1941, was equally divided between the AFL and CIO.

Labor made its "no strike pledge" immediately after the declaration of war in December 1941. The voluntary pledge

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not to sanction strikes for the duration of the war was made in return for a pledge by management representatives not to permit lock-outs.

These pledges were key elements in the agreement establishing a National War Labor Board to adjudicate all industrial disputes affecting the war effort and to provide procedures for their peaceful settlement. The NWLB, set up in January 1942, was composed of representatives of labor, management, and the public. Regional boards were organized on a similar basis. Labor representation was equally divided between the AFL and CIO.

Eighteen representatives of labor participated in a labor-management conference convened by President Truman in November 1945 to consider the "grave and wearisome" problems confronting workers and employers in reconverting the American economy to peacetime pursuits. Labor and industry representatives were agreed on the importance of prompt and good-faith collective bargaining and use of the United States Conciliation Service as a means of avoiding discord.

Through the period of reconversion and adjustment the labor movement maintained its organizational strength. Membership lost in war industries was partially regained in other branches of industry. Most unions continued to report slow but steady advances among unorganized plants.

In the spring of 1946 both major groups announced special organizational drives in the Southeastern and South Central States.

By the end of 1946 union membership reached an all-time high of 15,000,000, an increase of almost 500,000 since 1945. The AFL with 105 national unions reported its dues-paying membership at 7,505,446, while the CIO claimed 6,000,000 for its 40 affiliates.

Among the more important independents, the four train and engine railroad brotherhoods had about 450,000 members. The International Association of Machinists, which had left the AFL, reported 600,000 members. The National Federation of Telephone Workers, reorganized as the Communications Workers of America in July 1947, claimed about 180,000 members. The 40 to 50 remaining national independents had a membership of about half a million.

Several attempts were made before and after the war to bring the AFL and CIO together. Late in 1946 an exchange of correspondence was opened between AFL President William Green and CIO President Philip Murray with a view toward exploring possible areas of cooperation or even organic unity.

NABET — OF—BY—FOR
RADIOMEN



WASHINGTON

By Warren Deem

Two of WNBW's field engineers were recently off to the wilds of Brandywine and Elk Neck. CAROL BOLSTAD left for Elk Neck for a few months duty at that relay station and AL ARGENTIERE is "doing time" at Brandywine.

Recent promotions at WNBW include AL ARGENTIERE, who made Group 12 on September 16th, MIKE VOSSLER, VERN SWIEGER, and ED McCAUL all made Group 12 on September 1st. MIKE GALVIN, formerly of WNBW is now at the WRC Transmitter and has been promoted to Group 2 from Group 11.

Welcome and best wishes to the proud ED McCAUL's new little daughter, named MARIANNE DORIS. She was born September 8th and weighed in for her bout with life at 6 lb. 6 oz. ED is one of the proudest fathers to date—even doesn't mind getting up to feed little MARIANNE and respond to other distress calls of her infant language.

Mr. ANDERSON formerly of WOL has a new position—salesman in Arlington; I didn't catch what he was representing, but he likes the change.

Mr. BELOTE has started on the way to filling a life long ambition. He resigned from WOL and is now attending a theological seminary here in the District of Columbia. The best of luck in your new profession Mr. Belote.

LEON CHROMAK, former Mayor of Severn, is back in civilization after a tour of duty way up there in the microwave eagles' nest.

A continuation of the television instruction school for the WNBW engineers which was started last winter will be reopened and instructed again by "JOE" COLLEDGE.

WNBW was recently honored with a visit from Mr. ED FRASE, Chief Engineer of WMCT, Memphis, Tennessee. Mr. FRASE accompanied the field crew to Constitution Hall to watch a field job in operation. After the gear was all set up Mr. FRASE treated all the crew to a Hot Shoppe luncheon that was delicious and very much appreciated by all. That must be listed under the famed "Southern Hospitality."

Welcome to DICK EDWARDS, WRC's newest Group 2 engineer. DICK is a recent graduate and was with the Navy during the last fray.

DORSON ULLMAN is reported to be heading for the transmitting end of those FM programs he has formerly been monitoring downtown at the WRC Master-control.

WRC had an engineer for an extra hour at no cost to the company the 24th of September. DORSON ULLMAN forgot to set his clock back when the District reverted from Daylight Saving Time to Standard Time and so he reported for work an hour early—he'll never live that down.

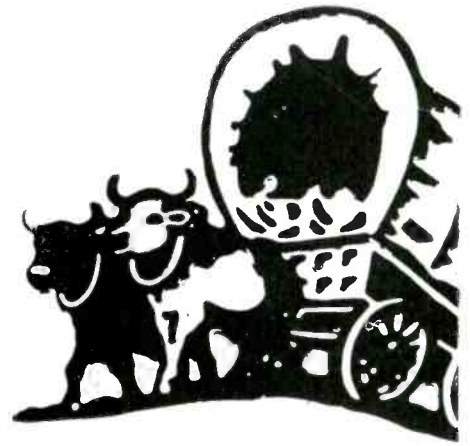
BILL CHEW reports that the new wire recorder works wonderfully. It is an RCA MI type—easy to load—just pull out and put in a new load and it will run for 30 minutes.

Mac MCGINLEY wonders why in heck certain people wait until time for a break before knocking to get into the recording studio. Every important cut he has to make seems to be interrupted by someone that "just has to get in" just as he lovers the cutting head.

DODD BOYD has at long last purchased his new Ford. He got the Ford and has the honor of being on the shortest waiting list in recent history. He went to a dealer with his Chev. and made a deal with the guy; some deal: the dealer only offered him \$1000 for his Chev. '46 and slapped a lot of unnecessary extras on the Ford—phooey to you sez DODD and went to another dealer. This fellow was a right guy and offered a more reasonable price for DODD's Chev. and called him up next day and said his new Ford has arrived. No extras and DODD even got a color that pleased him.

Welcome to MR. BUSH to WNBW Television. WALLACE BUSH is a recent graduate.

WRC whipped WMAL in their fifth official baseball game of the season. They had been tied 2 and 2 so WRC was mighty glad of that win.



OMAHA NEWS

By Louis De Boer

The field dept. of WOW has been pretty busy the past month. Larry Sibilila has been airborne; flying the circuit of the Big Six with Tip Saggau, the Sport Director of WOW. G. Flynn and Cy Hagrman went to the national plowing match in Iowa last month. G and Cy had a nice set up, with the pack transmitter in a jeep; until the State Police set up their transmitter near G's receiver. As you can see the resulting QRM was really bad; so our two sad boys worked fast, and rigged up a Rube Goldberg wave trap that really worked and saved the program. I am trying to think of where the rest of the guys went, but nothing must have happened or I would have heard of it.

Cy Hagrman started 5th year with WOW, September 27, 1948. Congratulations: to Johnny and Ruby Brunken on their sixth wedding anniversary, August 5, 1948.

—To Dick and Katherine Peck on their eighth wedding anniversary, September 15, 1948.

—To Bob and Edine Rudd on their seventeenth wedding anniversary, September 26, 1948.

—Birthdays:

Johnny Brunken	August 24
Bill Kotera	August 15
Mark McGowan	September 19
Larry Sibilila	September 6

Greetings from the Council Bluffs gang. We're newcomers to NABET. We may be small but we're mighty. The outfit consists of Don Jeppson, Roger Peters, and Harry Stutzman. Our station is a powerful 500 watter on AM and 3 kw on FM. We were Iowa's first FM station.

Now for a look at the engine room personnel of KSWI-KFMX. Don Jeppeson is xmtr supervisor. His XYL's name is Evelyn and he is blessed with one little "Harmonic" who is called Dennis when he's good. Don is building a new rig with an 813 in the final. It will be on 20-15 and 10 meter fone. He is also putting a pair of 826's on 2 meters with a 12 element beam. His call is WØQFZ.

Roger Peters works at the xmtr and isn't hitched yet but is still playing the field. He's an amateur under the call WØWHZ and is an avid 2 meter fan. He has 350 watts and a 16 element beam on 2. Rog has worked 3 states and is looking for more. He's also on 10 with 250 watts and a 3 element beam.

Harry Stutzman is the calm, cool, and collected control room operator. His wife's name is Helen and his hobby is raising two little girls. Sherry who is five years old and Pamela who is one year. Harry is also a camera fan when he has the time and opportunity. Maybe we'll get a chance to exhibit some of his works in a future issue.—73's by Roger Peters.


SAN FRANCISCO

By C. T. Stevens

Well fellows, you now have a new correspondent for this column. Some wishful thinking character appointed me to do this job and he surely must have had rocks in the head to even think that I could write a column. I could write in Sanscrit about nuclear fission on the head of a pin. So, with that little item as an introduction, here it is. You can take it for what it's worth and welcome to it. Vacations are still going strong, Don Hall, Sam Melnicoe and Andy Mitchell have just returned and leaving at this writing are Harry Puccetti and Bob Shover, who by the way has got himself lined up on a nice little junket, to wit, after his vacation is over he takes over as engineer for the Horace Heidt Show travelling with the show from here to there and back again some time in February. Nice going.

Recently George McElwain took a leave of absence from the company to go on tour with our Vice Presidential candidate, Gov. Earl Warren, to handle all of the technical details for same. However, it seems that Mac was taken very ill in Salt Lake City and so a hurry up call was sent Russ Butler to come and lend a hand. Details are rather lacking at this time. More later, when, as, and if.

Three new members have been recent-



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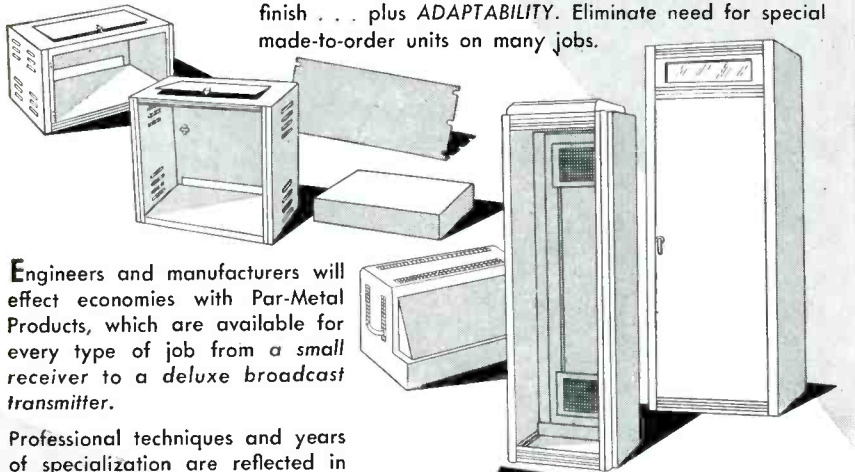
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PANELS • RACKS**

Write for Catalog



Gene Nickels to Canada. Tried for Lake Louise but got flooded out. George Irwin made it to Lake Louise. Ken Martin got as far as Los Angeles and San Diego. Myron Case is staying home account of new junior op. that arrived just before vacation. Congrats, Myron! Chuck Jobbins, still to go, is planning for a trip to Oregon.

The above items were sent to me by Don Bernard, the only one to send anything in. Thanks a lot Don, all contributions gratefully received, and that goes for any of the rest of you fellows that will send in the low down to me. See you next month Schmoie.—C. T. Stevens.

IRE AWARD

The Institute of Radio Engineers will award its medal of honor to Dr. Ralph Bown, Director of Research of Bell Telephone Laboratories.

Dr. Bown won an international reputation through his work in broadcasting, ship-to-shore and overseas telephony. He was IRE president in 1926, the year he received the Institute's Morris Liebmann award for distinguished research in wave transmission phenomena. Dr. Bown specialized in radar during the war and subsequently served as consultant to the Secretary of War.

The IRE medal of honor, awarded annually for "distinguished service rendered through substantial and important advancement in the science and art of radio communication" will be presented to Dr. Bown at the Institute's convention in San Francisco next March.

NABET members may know the following IRE members who, among others totaling thirty-one, received the Grade of Fellow, a distinction based on "eminence and distinguished service" in the field:

- H. A. AFFEL, Bell Labs, New York.
- W. L. CARLSON, RCA labs, Princeton.
- P. S. CARTER, RCA Labs, Rocky Point.
- T. T. GOLDSMITH, DuMont Labs, Passaic.
- F. W. GROVER, Union College, Schenectady.
- E. A. GUILLEMIN, M.I.T., Cambridge.
- L. C. HOLMES, Stromberg-Carlson, Rochester.
- W. B. LODGE, CBS, New York.
- H. F. OLSON, RCA Labs, Princeton.
- G. D. O'NEILL, Sylvania, Flushing.
- GEORGE STERLING, FCC.
- I. R. WEIR, G.E., Syracuse.

SAN FRANCISCO—from pg. 15

ly added to the Studio group, John Hall (no relation to the aforementioned Don) John McMullen who hails from KOMO up Seattle way, and Ed Edmondson who has been working around here abouts for quite a spell at some of the other ether splitters, competitors whose names are only mentioned in whispers.

I am very sorry if I have left any one out of this scrambled up hunk of stuff but I can't get it into the column if you don't send it in to me. So, this is the official notice that I expect all of you to get your words of wisdom in to me as soon as possible so that they won't get cold and outdated. Your cooperation will be greatly appreciated by all concerned. The following was sent to me too late for an earlier run, but here it is anyhow.

NOISE FROM NEWARK: Since the last news from KGO in the journal, the "new look" has been added to this place. A complete new plant that is "out of this world," literally as well as actually. It is now in operation and has been since last December. The location is about 35 miles south of San Francisco and about

30 miles from the old plant, right smack in the middle of a salt lake. A Westinghouse rock crusher, a three tower array and a near perfect ground are now really pushing the old ether around. Most of the bugs are now out of the layout. The last bit of excitement was when a plate transformer went up in smoke.

DRIVEL: Jim Mehren, a transfer from Chicago, has acquired a Bing Crosby shirt. It is almost as loud as those cigars. Chicago's climate must have improved since he left. Ours hasn't. (C. of C. do not copy). He is now out of the trailer into a house in Sunol. Otis Hill is now back with us after a prolonged illness. Gene Nickels has acquired a new house and is getting his ham outfit back into shape. Ken Martin is building a new house (at these prices?). He has also acquired a new Chevy. How does he do it? Bill Fox, our latest staff addition, is getting himself a "new" car the hard way—piece by piece. He should have it all replaced by this time. Chuck Jobbins has built himself a new barbecue pit. Now if he can float a loan, he can get some beef to try out on it.

Vacations: Jim Mehren to Arizona. Don Bernard to Oregon and Washington,

TRADE NEWS

WOR-TV and *WOIC* Washington, D. C., announce the appointment of F. J. Bingley as chief television engineer. He was formerly with *Philco* and *Baird* Television since 1927, and will report to *WOR* Vice President J. R. Poppele in New York.

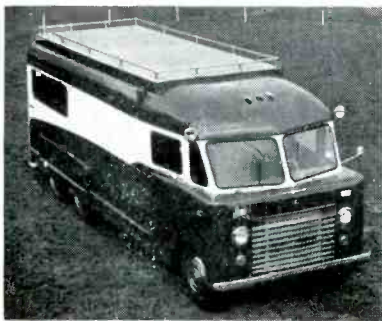
Shure Brothers announces its "900MG" crystal phonograph pickup for micro-groove records, which assures maximum fidelity and tracking. It tracks at 7 grams has radius of one mil, and an output of one volt!

G. E. Co. announces its contract for the first Texas TV station—*KLEE-TV*, Houston, including transmitter, tower, studio, and remote equipment. Station will be in operation very soon.

RCA announces an "Isotap" transformer, which in addition to providing safety in set servicing, especially the AC-DC types, variable line voltage conditions may be simulated for breakdowns that might not otherwise show up while on the service bench.

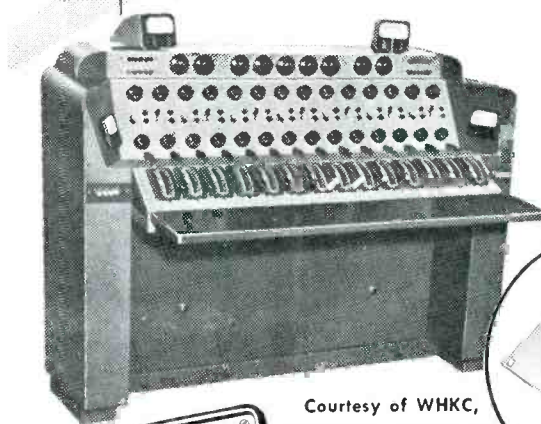
DuMont announces a cathode-ray tube primer, a 63 page booklet and wall chart, intended for high schools and colleges. The material is intended to provide several good lectures on the subject matter.

RMA announces that second-quarter TV receiver shipments were 50% greater than first-quarter. New York-Newark area continues its overwhelming lead. Shipments lagged behind production figures for some companies due to inventories. July TV set production (56,000) is off 12½% from June production (64,000). Other set production is off 18 to 42%. July tube sales dropped off 43% from June. Some of these declines are seasonal, some vacation shut-downs, etc. *RMA* has set up several aggressive committees to study foreign markets for general radio and TV sales promotion work.

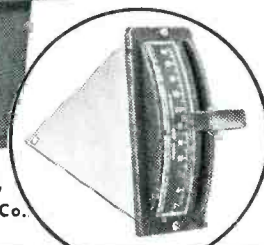


G. E. Co. announces a new, complete TV mobile truck designed to carry all necessary equipment for on-the-spot TV

STATION WHKG ...Selects TECH LABS VERTICAL ATTENUATORS for new CONSOLE INSTALLATION



The flick of a finger operates the patented "Gove" Vertical Attenuator. Representing the very latest in broadcast components, these units are suitable for every type of sound equipment from elaborate broadcast stations to the simplest P.A. system. Unit gives smooth easy operation and can be cleaned from front of panel by removing escutcheon. Completely shielded and dust proof.



Write for Descriptive Bulletin

Courtesy of WHKG, United Broadcasting Co.



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BERGEN BLVD., PALLISADES PARK, N. J.
Tel.: LEonia 4-3106

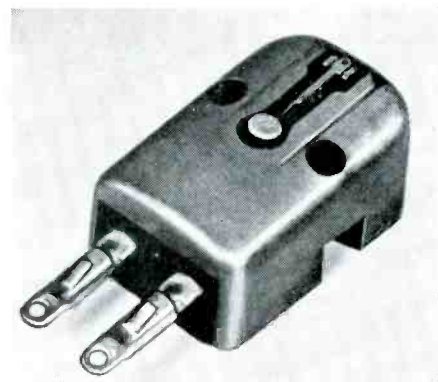
pickups. The first unit of its type went to *WNAC-TV*, Boston. Floor is only 16" off the ground to facilitate loading, with 78" headroom, will carry 5000 lb. load. Interior contains operating table, 3 control and monitor units, mixer, and audio equipment. Under the table are power supplies, distribution amplifier, and sync generator. Four cable reels are located behind the operating table. The topside platform has four recessed footman loops for tying down cameras and antennas.

RCA announces a new precision video sweep generator type *WA-21-A* which permits direct viewing of the envelope of the output wave of a video circuit while the input signal sweeps thru a range of 1000 kc to 10 mc at a rate of 60 sweeps/second.

RCA's new "Sound Products Catalogue No. 128-P" of 84 pages is now ready and available. Includes microphones, amplifiers, speakers, etc.

A portable tone generator allowing selection of 10 frequencies between 50 and 15,000 c/s, complete with *VU* meter, has been announced by *RCA*, as type *WA-26-A*. Total weight with batteries is 9¼ lbs. Intended for radio wire line equalizing applications.

G. E. Co. announces a new variable reluctance cartridge designed especially for the long-playing records, is one-third



smaller than previous models. Stylus is one mil sapphire for the microgroove standards.

G. E. Co. announces possibility of regular TV reception of *WRGB* 120 miles away on Whiteface Mountain, for amusement of visitors. Test reception reported good.

RCA reports sale of 50 kw medium wave transmitter to *Egypt*.

Climaxing 15 years experience in training **PRACTICAL ENGINEERS** . . . we announce completely **NEW and MODERN AM - FM - TV STUDIO, TRANSMITTERS, and IMAGE ORTHICON CAMERA CHAIN** . . . specially designed and planned to give the student the practical experience needed to be a real asset to an engineering staff.

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DIXIE DOINGS

By Sam Liles

When you open your door to a knock at three o'clock in the ante meridian, you may get a kick in the puss for your pains, or you may meet the heroine of the story. Such was the beautiful young damsel who joined the WPTF transmitter night shift early in the month. She said she was a hostess by trade, and had been doing the best she could in a bar in Charleston, S. C., where she had an arrangement with the management involving a percentage on the drinks. The next thing she remembered was agreeing to go for a drive with three college boys. Apparently not satisfied with the progress they were making, the college boys threw her out on her—ahem! She was on her own. The boys on the night shift offered her a cup of coffee, which seemed to take the damsel by surprise, since it was the mildest drink she had been offered in several months. She didn't know Frank Higgins' coffee. You stir it up good, then throw away the handle of the spoon! She complained of contusions, lacerations, and what not, and wanted to go to bed. In a hospital, that is. Wayland Seagraves, being sympathetic toward damsels in undress—I mean distress—could not resist this plea, and drove her to Rex Hospital, where she was admitted with a broken arm. Now the odd thing about it is that Joe Stevenson says her arms were all right when she left the transmitter. Hm?m?m!

So many of the members have had trouble with their radio sets that it now behooves us to list the procedure to be followed when a radio man fixes his own set.

1. The bounce test. This is somewhat similar to the test given tennis balls to see if they are playable. Hold the set at shoulder level and drop onto a concrete floor. Sometimes this simple expedient effects an immediate cure, but in any case all loose sediment and glass particles are settled to the bottom of the chassis.
2. Turn on the switch. Then short all terminals within easy reach with a screwdriver. This will do three things: (a) Check the fuses in your house wiring system. (b) Test the metal in your screwdriver. (c) Allow excess waxy substances to run clear of your radio.
3. Unsolder a few wires here and there and try them in different places. If you do a good job of re-soldering, the wires will look like they were connected there by the manufacturer, thus playing a neat joke on the next man to tackle the set.
4. Tighten all screws and trimmer adjustments in a clockwise manner, being careful not to miss any of the i.f. trimmers. This is very important.
5. Call a radio service man and tell him you think it is a bad tube.

It is considered very bad form to consult a diagram, use test instruments, or blow the dust and cobwebs out of the set. These practices are considered unethical, like shooting a sitting duck.



HUDSON NEWS

By Gene Clark

MAC CELEBRATES TWENTIETH ANNIVERSARY

Most of the field engineers of all New York Stations have recently referred to James MacKenzie (Mac) Reid as the "Dean of Field Engineers." Well, they are not kidding as Mac just celebrated his twentieth year with Station WOR.

Although more energetic and active than many of his younger cohorts in radio Mac has been in radio since 1914 when he went with the Marconi International Marine Communications Company to pound brass aboard ship. He traveled the world for eleven years before joining the Thermodyne Radio Corporation in Plattsburg, N. Y. as a supervisor. This job lasted for three years and then Mac came to WOR.

Mac can tell some real stories of the beginning days of broadcasting. WOR at that time was a small outfit with the Chief Engineer's office (Mr. Poppele) in master control. The field equipment was kept in the control room behind the equipment rack. Mac watched the field department grow to a large room full of equipment of all sorts. With television coming in, no doubt there will be gripes from the fellows about the heavy field equipment. Ask Mac about the remote equipment in the old days what with storage batteries, "B" batteries as well as heavy amplifiers and heavy microphones.

Mac deserves a pat on the back for a good job well done and we know there will be many more jobs with Mac on the other end of the "PL." Sincere congrats Mac!

MUSICAL ENGINEERS

Here's something new for radio engineers. On Saturday, Sept. 25, 1948, a group of WOR Engineers stepped around in front of the mike to present a program of orchestral music on the *Bands For Bonds* show on WOR and the full Mutual Network. Whether you know it or not, the Engineering Dept. of WOR is blessed with several ex-musicians and good, too! Some of them are alumnae of such bands as Xavier Cugat, Vaughn Monroe, Artie Shaw, Bob Chester, Tommy Dorsey, etc. Playing on the bond show were:

Al King—Trumpet	SE
Carl Berry—Clarinet	SE
Dick Quodimine—Guitar	SE
Walt Shaver—Bass	Sound Effects
Gene Clark—Piano	MC and SE

Also assisting were Mrs. C. Berry of the Eng. office stenographic staff and Brad Spinney of Special Effects.

At the end of the show special credit was given for the cooperation of the American Federation of Musician's President Petrillo. Production was reluctant to indulge credit for NABET John R. McDonnell, President!

Your writer attended the recent combined NY-NABET meeting with IBEW-1212, which was sponsored by the NABET New York Chapter. Hats off to Westy (C. Westover) for a good job. We must get together more often.

Jim Carter SE (former Journal reporter) is the grandpappy of twin girls. (Brand new ones). Incidentally Jim is the new Chapter Secretary-Treasurer and a dandy one at that. I don't know why he didn't get that job before this. He does a terrific job when it comes to figures??!! What corn. Well, maybe I'll do better next month. 73's.

OMAHA HOBBY CORNER

By Bob Rudd

When the OMAHA bunch sees this they are going to say: "How come the column this month was not written by LOUIS DeBOER or CY HAGRMAN?" Fellows it's this way.—Editors do NOT write about themselves, they get some one else to write about them," you say. I say, Editors are just like the rest of you, they like to see their names in print, TOO. Let me add, however, that there is an unwritten law that says Editors cannot write of their own doings but, instead, must find some volunteer to do it for them. I volunteered to write this piece for LOUIS, and write it I am.

This is to be the story of Lou's hobby—HAM RADIO; however, that will come a bit later. Right now I want to go back eight years; back to 1940 or thereabouts. The writer at that time was a studio engineer and as such, had his share of remote assignments. One of these was a broadcast originating from Peony Park, a beautiful dance spot some five miles or so west of Omaha. In those days amplifiers were not quite as streamlined as now and were a bit bulky. If the operator happened to be a bit bulky too (which he was), it made rather a bad combination. This was especially true when the equipment had to be carried nearly a half a block from the parking place. Yours truly always arrived short of breath and dripping with sweat and before proceeding with mike setup and line termination, set the equipment down and rested. Dur-

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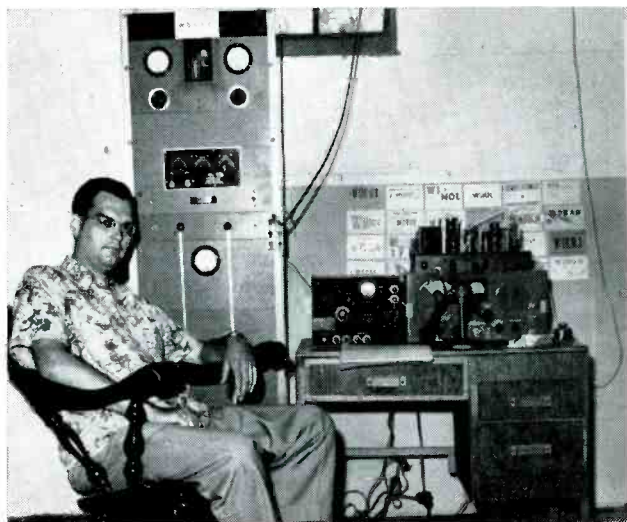
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ing this rest period there was always a friendly young man that made it a point to stay nearby. He always lent a hand carrying the amplifier to the operating position. While the amplifier was being terminated, he would bring in the microphones and place them up on the band stand. He never attempted to bother by hooking things up or recommending orchestra set ups, he just appreciated a tired man's position and gave him a lift. This nice young man was always available. I didn't even know his name in those days but I was grateful to him for his help. I didn't know either that the



This picture, recently exhibited at the Omaha Electrical Exposition, shows Lou and his fine amateur station WØAXY.

—Photo by Elmer Stein.

dream of his life was to run the equipment that he helped carry in. No, I didn't know any of this until he came to work at WOW in 1944. The fine young man that helped me and who was always so courteous was LOUIS DeBOER, Editor of this column.

The next step in LOU's life was in 1945 when he built a new home and financed part of the project from money that he and his wife had saved by working at Peony Park. They had met there, were married in 1942, and both continued to work there until LOU came to WOW in 1944. I should add that another very important step in LOU's life was the addition of daughter DIAN in 1943.

Right about here some one is going to remark, "when does the part about the ham radio start"? I say RIGHT NOW.

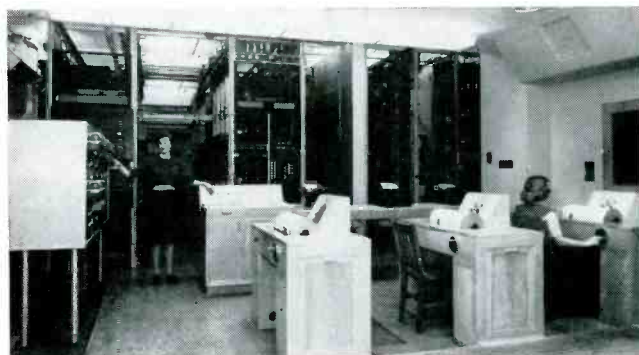
In 1946 LOU started out in earnest to get his ham ticket. That 'ole debbil CODE was his greatest concern. Like many another, he had trouble with it. He worked hard at it but it seemed like he would never get the required 13 words per minute. He became discouraged but he kept trying. Some of the gang gave him a hand. AL MALLER, CY. Hagrman (Asst. Editor) and others sent to him when they had a moment between programs, recordings or remotes. In April 1947 he felt he was ready to take the exam. Came the usual waiting period and in May 1947, along it came!

His first transmitter was a simple affair and low power. With 19 watts input to his final he worked 23 states using a doublet hung up in the attic. This was on ten meters. As time progressed he chaffed at the inconsistency of such low power and determined to have something better. He started

to build a new rig. Came Christmas time—no new rig but something almost as good, and certainly just as necessary, a new beam! The beam was a gift from BEVERLY, his wife. She knew nothing about beams but after getting the opinion of several hams, she decided upon an Elincor. This turned out to be a pretty good choice as the beam has added several countries to LOU's score and in addition has qualified him for WAS.

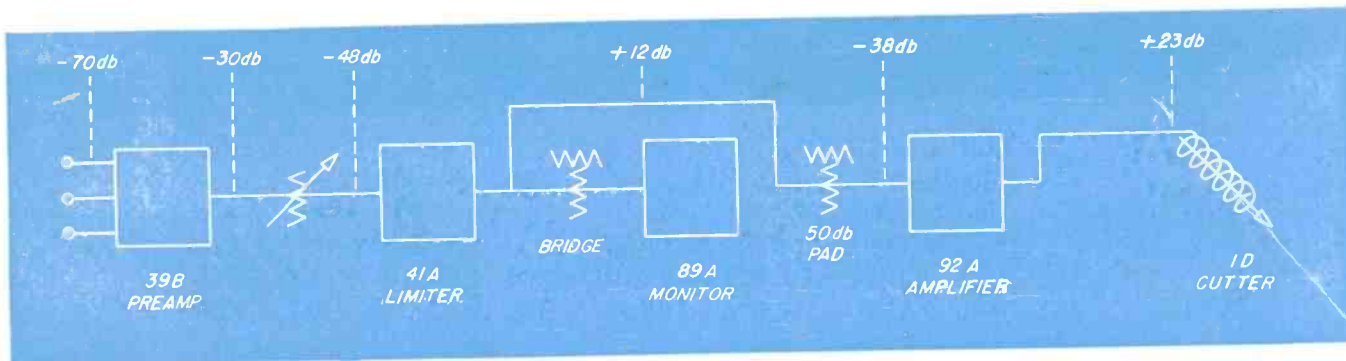
The beam seemed to be just the incentive he needed. This summer he, assisted by ROY EKBERG of the WOW engineering staff, built a beautiful rig modeled after the Collins 30J. The rig, using a T40 in the final, runs 125 watts input on all bands. A McMurdo Silver exciter drives the T40 for any band desired and is in itself a complete low power transmitter. It may be removed from the rack for portable operation if necessary. The Audio comprises a conventional driving system into a pair of 807's in Class B. The modulator proper is rather novel in that the audio is fed into the screens of the tubes. The screens are hooked to the grids of the tubes through a resistor. This in effect makes them hi-mu triodes. No Bias is required when hooked this way and the driving power required is very small. LOU operates on 20,300 KC and 28,700 KC. The latest addition is a Class A license received Sept. 16th. Operation on 20 and 80 meter phone will be forthcoming as soon as LOU gets up antennas for those bands. Oh, yes! His call? Why it is WØAXY.

ELECTRONIC CALCULATOR PROGRESS



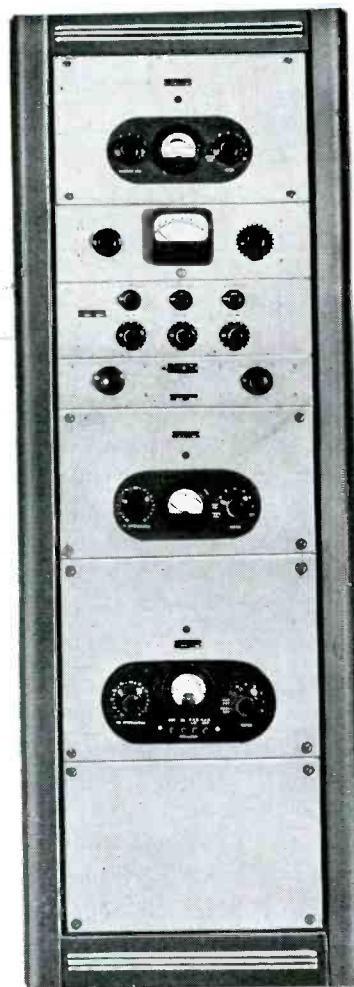
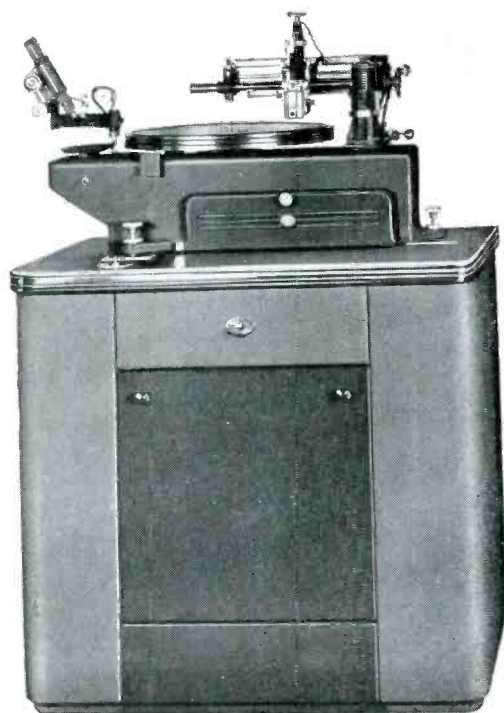
(Bottom)—I.B.M. Automatic Sequence Controlled Calculator. Fifty foot long electrical computer at Harvard University.—(Credit Harvard News Service.)

(Top)—Differential Analyzer at M.I.T. 2000 vacuum tubes, 100 tons of equipment employed in automatic solution of differential equations.—(Credit M.I.T. News Service.)



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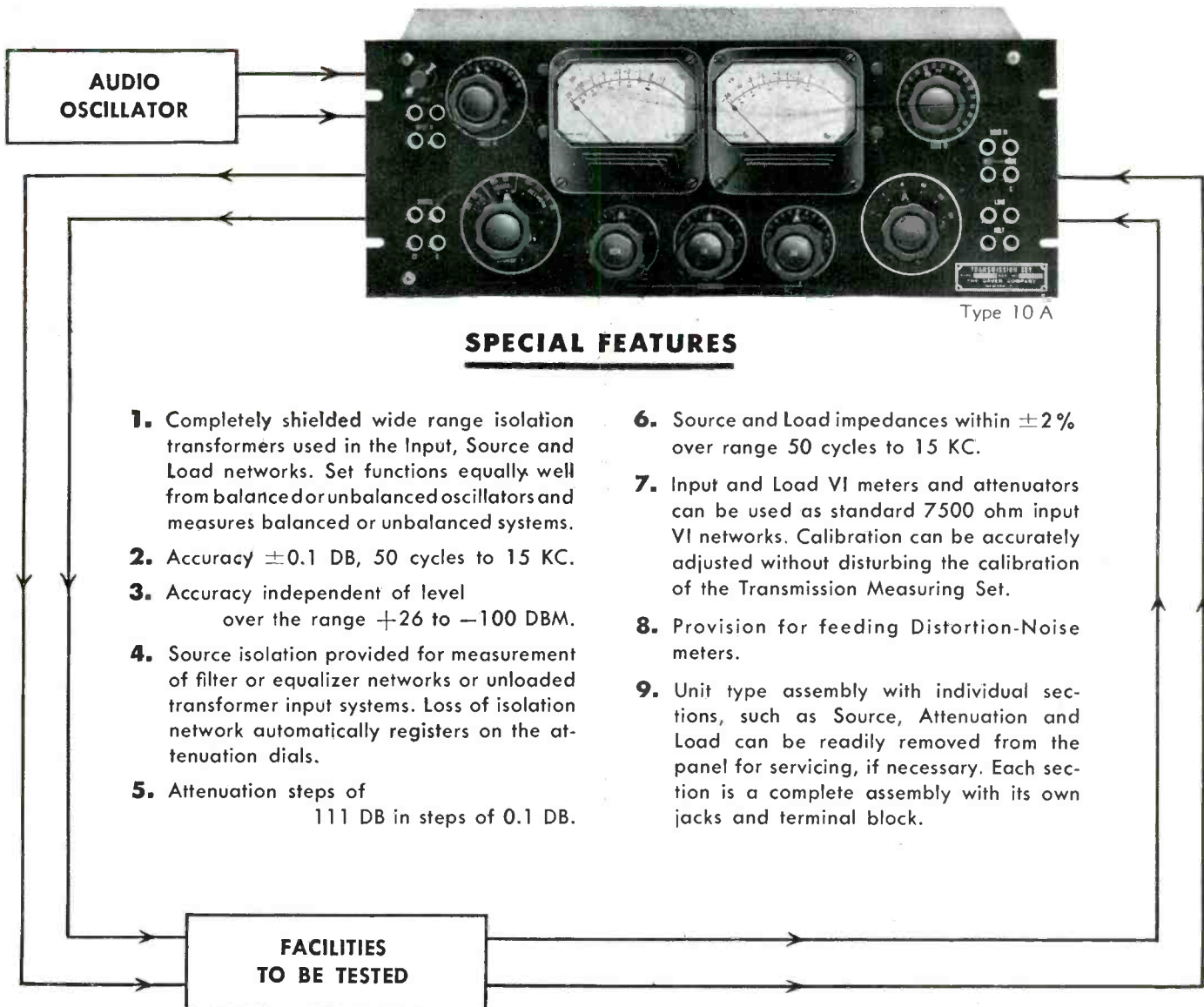
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APPLICATIONS

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4. Measurements of matching and bridging devices.
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