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NAT'L ASS'N of BROADCAST ENGINEERS and TECHNICIANS

THE BROADCAST ENGINEERS' JOURNAL

Ed. Stolzenberger — Editor and Business Mgr.

Editorial, Advertising and Circulation Offices:
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Telephone: VIrginia 9-5553

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NATIONAL N.A.B.E.T. OFFICE
Room 501, 66 Court Street, Brooklyn 2, N. Y.
H. E. Hiller, Executive Secretary — **MAin 4-2855**

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 Broadcast Field.

Contact any of the following officers for further information:

J. R. McDonnell, Pres.
375 O'Farrell St.
San Francisco 2, Calif.
Ordway 3-8484

H. E. Hiller, Executive Secy.
C. L. Gorsuch, Nat'l Rep.
66 Court St., Room 501
Brooklyn 2, N. Y.
MAin 4-2855

Arthur Hjorth, Vice-Pres.
Geo. Maher, National Rep.
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Wabash 2462

Chapter Chairmen

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

New York:
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Oceanside, N. Y.

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1918 Grove Ave.
Richmond, Va.

A Message to the Members of NABET

from

JOHN R. McDONNELL
President, NABET

Printed below, are some excerpts from observations made by NABET's Mid-West Representative, George Maher. I recommend them for the consideration of all NABET members and others who are interested in their future in Television.

Sincerely,

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

"....it appears as though the TV operation at NBC-Washington will best indicate present thinking as regards future installations throughout a large part of the industry. There, the system is based on film projectors and a well integrated field unit. The cameras and associated equipment of the field unit being used for whatever studio operation may be required. With this relatively simpler operation, the manpower requirements are naturally less in number as well as the necessity for specialization in the various functions of the engineer. Which brings us to the $64 question. Just where will the NABET member fit into the TV picture? Especially the members with greatest seniority and who are in the higher wage brackets. ....In order to keep costs at a minimum, the industry is inclined to bring in newer men at the lower starting salary rather than transfer men from an existing AM operation. .....We might as well prepare ourselves for an ever increasing amount of concern in the minds of the membership, and undertake to do something about the problem..... Insofar as the networks are concerned, there seems to be two schools of thought pertaining to the manpower situation at the Owned & Operated points. One is to bring the personnel into New York on a per diem basis and give them an intensive course of training for a period of four or more months and then return them to their respective offices. The alternative is to transfer a nucleous crew of personnel, largely of the supervisory classification, to a given office and they will undertake to train the men during the period of time construction of the station is underway. The first plan is, of course, the more expensive, but we might do well to look more favorably upon it than the second plan. The reason being that in the second plan we are faced with a somewhat discriminatory condition whereby the supervisory positions on a given local basis will be filled from an outside source. Just where the independent and affiliated stations are going to find competently trained men for their TV operations is a matter of conjecture. .....WWJ in Detroit was able to obtain enough men from outside their AM staff, and, for the most part, did so. Here, we have the situation of some concern among the men who have made definite contributions to the radio industry seemingly being passed over. On the other hand, WOW in Omaha is planning on training their present

(To page 9)

The Zoomar Lens In Television

By L. W. LOCKWOOD

There has been in use in television and the newsreels recently a new type of lens called the "Zoomar." It was invented by Dr. Frank G. Back, and was presented before the SMPE Hollywood Convention, October 1946. It is an outgrowth of a special viewfinder which he developed for the use of the armed services during the war. The viewfinder accomplished the same thing as the Zoomar, but merely had the optical quality of a viewfinder, rather than that of a finished lens.

This lens is, as its name implies, a vari-local lens; i.e., that by a simple mechanical adjustment it varies the focal length of the lens within certain limits. On the movie type shown in Fig. 2A-B-C, which is slightly different from the type used in television, mainly in mechanical details, this change is made by the simple movement of a lever attached to the lens barrel. By making this change in focal length, an apparent change in the proximity of the viewer of the film or of the television screen has taken place. In other words, if the change is from the minimum focal length to the maximum, it appears to the viewer that he has started way back from his subject and has been carried up close for a better view. All this of course without the camera's physical position having been altered. This presents many possible advantages over the more rigid and cumbersome method of dieffrent lenses on a turret which can be changed between camera shots.

The Zoomar is new in function but not in principle, since the idea for vari-focal lenses dates back some time, but this is the first time that the developments of the war-lens coatings, etc., have been incorporated in any model making for the increased efficiency which is necessary in any lens as complicated as this.

There are twenty-six elements in this lens as opposed to an average of perhaps six or eight in the most complicated of ordinary fixed focal length lens. The need for coating on the surface of the lens is immediately seen for at an air glass surface, approximately 10% of the incident light might be lost in reflection. Add this up 52 times (two surfaces at each of the 26 lenses in the Zoomar) and the efficiency with uncoated lens elements is prohibitive. However, by coating, the loss may be cut down to approximately 1% of the incident light. As may be seen in the schematic diagram of the lens (Fig. 2A-B-C), the lens is actually one barrel containing its elements in both ends moving inside another barrel with its lens elements. The front set of lenses in the movable barrel takes care of the change of the focal length—the Zoom—and the rear set in the movable barrel compensates for the focus. As can be seen, the mechanical details of this arrangement are quite simple in function and thus are quite adaptable to field use, where complicated mechanical arrangements would have a tendency to get out

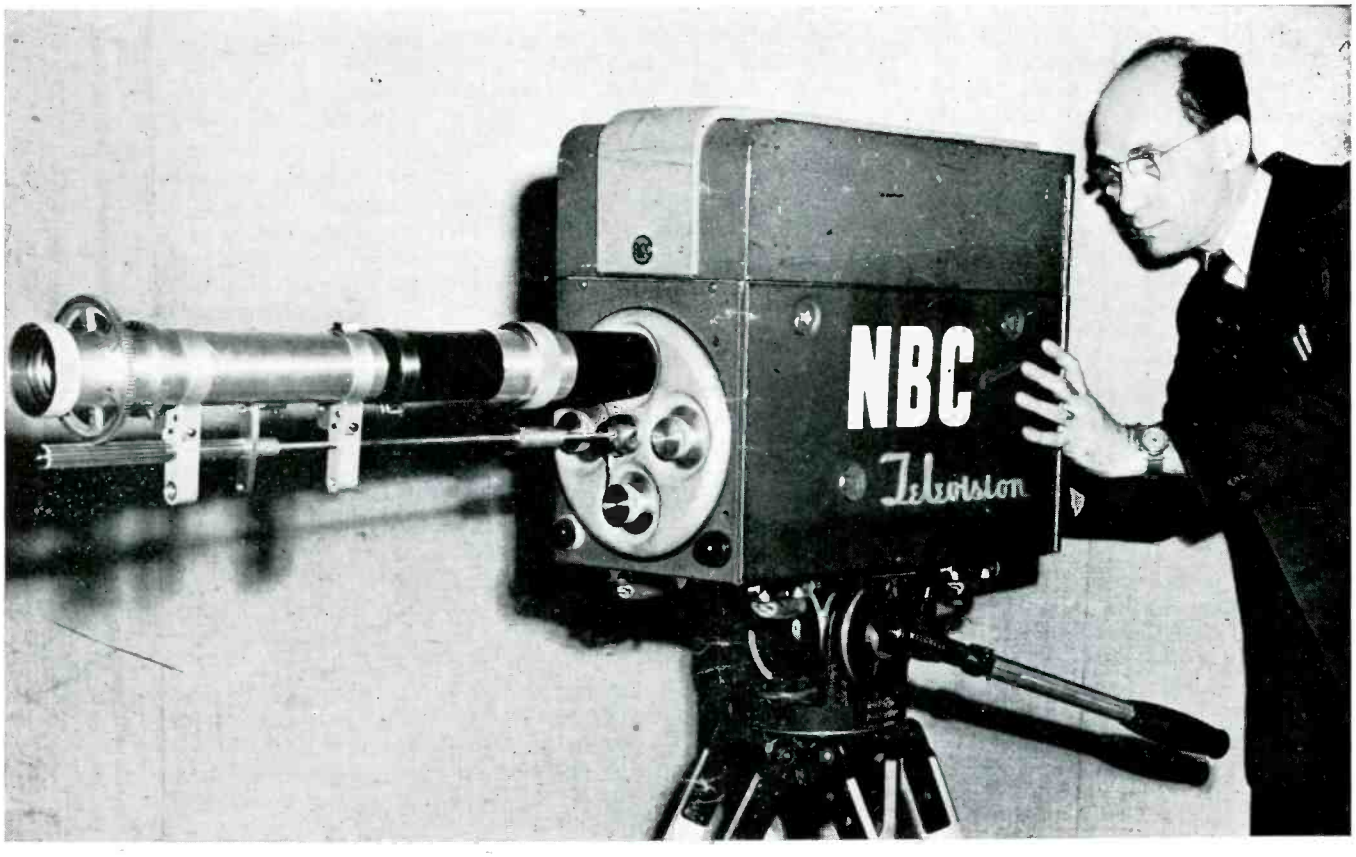


Fig. 1—The lens in actual use—Dr. Back at the controls.

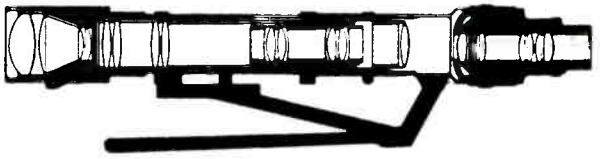


FIG. 2*A*. Wide-angle position.

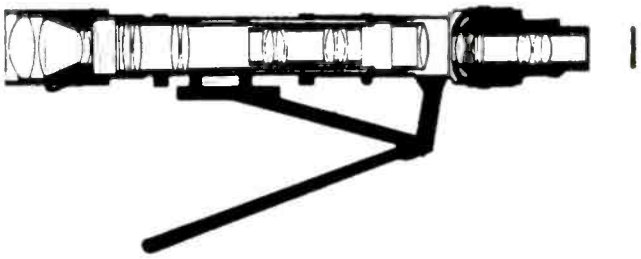


FIG. 2*B*. Intermediate position.

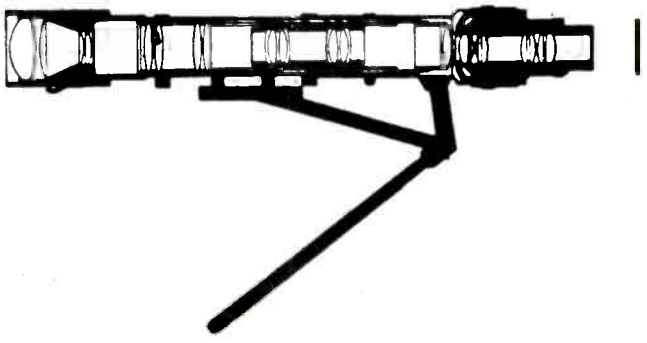


FIG. 2*C*. Telephoto position.

of alignment. The Zoomar has two interchangeable front lenses. One for wide angle (i.e., long-view) and the other tele-front lens (for close-up work). There is also an ultra short range adaptor for use in fine work such as the analysis of a very small mechanism such as a watch where one would have to work very close-up to about one or two inches from the subject. However, this attachment has limited application especially in the field of television. In the model for television shown in Fig. 1, the range with the wide angle front lens is from 2″ to 9″ when zoomed. With the tele-front lens, it is from 4″ to 18″ when zoomed. The speed is F/5.6 to F/22 when used from 2″ to 12″, and about F/8 in the region of 12″ to 18″. The difference in field coverage in any one continuous shot is nine times (3-to-1 diameter change). The difference in field coverage can be greatly increased, to 36 times (6-to-1 diameter change) by the use of a compound shot using both front lenses. The main difference in the television lens and the movie lens is in the mechanical method by which the inside barrel is moved. In the movie type, shown in Fig. 2-A-B-C-, it is done by means of a lever arrangement underneath the barrel. In the television type shown in Fig. 1, since the size of the camera prohibits the operator handling the lens in operation, the lens barrel movement is accomplished by means of a little rod that is carried back to a handle in the back of the camera near the panning handle. There are at the present six such television-model Zoomars in use. One in Baltimore, one in Philadelphia, one in Washington, one by CBS, and two by NBC. They cost approximately $7,500 each, and are distributed by the Jerry Fairbanks Company.

There are undoubtedly many improvements to be forthcoming on this instrument, but there are some qualities that it now possesses that might be interpreted as drawbacks. One such drawback is its limited resolution. Naturally, in as complicated a collection of lenses, the alignment problem for maximum resolution assumes heroic proportions. In addition, since the lens was developed mainly for movie work, it has been designed for the visible range of light frequencies. However, many image orthicons on which this lens might be used in television have a considerable infra-red response, which of course results in poor definition when used with this lens. Tests have shown that optically, the lens is capable of 600 line resolution in the center of the lens, and about 450 lines at the edges. However, over a television system, the resolution drops to about 525 lines as opposed to perhaps 600-plus with an Ektar lens. The standards of television are such that a broadcaster would like and consistently does under controlled conditions, supply to his transmitter considerably greater resolution than the home receivers are capable of reproducing. (Just like sound broadcasting). However, the use of the lens cuts down this margin to nothing, which is a practice that is not desirable. However, the program advantages that this lens supplies at times outweighs the disadvantages. A good example of this was in the first Louis-Wolcott championship fight. Before the fight, Louis was overwhelmingly the favorite. Most experts considered it merely the champ's choice as to what round he should end the fight. However, in the first round Louis was knocked down. Fortunately for televiewers, the cameraman was alert and took advantage of his position when Louis fell facing the telecamera. The cameraman zoomed from his normal position showing both fighters just filling the screen, to an extreme close-up of Louis' face with its startled, stunned, and hurt expression. The value program-wise of such a shot many times outweighs the disadvantages of some loss of resolution. As yet, the main use of this lens is to be in sports and outdoor events or large gatherings such as a meeting of the Congress. The mechanical adjustments of the lens are not yet of the type for studio work. Many times in the studio a dolly shot corresponding to the zoom has to be done so slowly that it is hardly perceptible. This is a very difficult achieve-

ment with the present Zoomar. Also the position of the subject being viewed relative to the lens must remain fixed, or refocussing is necessitated. The scene is in focus throughout a zoom shot providing this distance is fixed, but if it should vary as it quite frequently does in studio work, then re-focussing must be done simultaneously with zooming. The combination of zooming, focussing, panning and tilting at the same time presents many problems to the operator of the camera. However, the relative distance in large gatherings or outdoor events does not change enough to make re-focussing a major problem. One of the main advantages of this lens is its psychological effect. It can give a complete picture and a detailed picture and yet not have the disconcerting choppiness of cutting back and forth from one camera to another with different lenses on each. One has a tendency to lose either the trend of thought or become lost in the relative positions of the cameras and the subjects being viewed when this cutting, or camera switching, is done. As an example, consider an address to a large group of people, such as perhaps the President addressing the Congress. As he enters the house, one would want to be on a long shot to see his entrance relative to the rest of the hall—people rising, etc. As he walks to the platform the cameraman can execute a slow zoom as though the viewer were walking along with the President. When he first stood at the speaker's platform a long shot establishing his position relative to the rest of the gathering would be desirable. When he started to speak, one would like to see him more closely for facial expressions, etc., and also to eliminate extraneous distracting details from the picture. This would be done by carrying the viewer from the back of the hall, up to the speaker's stand in a zoom. Perhaps reaction shots of the crowd to the speech would be improved by showing some single person in detail. This could be done by starting way back showing the whole crowd and zooming up to one single person. There are many such psychological advantages in the use of this lens.

It also has other practical advantages—for instance, a parade such as the Thanksgiving Day parade of the large balloons in New York City. In order to describe them properly and to see them sufficiently well, they must be viewed for some time. However, they are either approaching or moving away from the camera during this time. If an ordinary fixed-focal-length lens were used, they would first appear as pinpoints on the screen from which no detail would be available, and finally when they came up to the camera, a small portion of them would fill the screen and because of that, the motion of them would be entirely too fast on the screen. With a Zoomar, however, the cameraman could start fully zoomed so that while they were still far away they filled a relatively large portion of the screen and were easily viewable. As they approached, he would slowly zoom back so that at all times they filled the same portion of the screen. A similar technique would be very valuable in races. As the race neared the finish line, one would like to see a long shot to see the relative positions of all the contenders ,but as the finish line was crossed, a close-up shot showing just the winners on the screen would be the most desirable. This can be done smoothly with a zoom without the disconcerting cut at a crucial point.

It appears that though the Zoomar lens has some limitations which will probably be lessened in degree in time, it certainly has enough advantages to offer in certain types of pickups to make its use very desirable. Undoubtedly as the use of this radically new lens is learned by and thru experience, it will grow to become an integral part of the technique of picture reproduction.

Point Mugu Guided Missile and Rocket Tests

Members of the Los Angeles Chapter of the Representatives of Radio Parts Manufacturers were the guests of the Naval Air Missile Test Center at Point Mugu, to inspect the unclassified portions of the installation, and to watch test firing of guided missiles. The visiting representatives were first shown tests of radio controlled planes, which included putting small planes through complete maneuvers, all controlled by ground operators. These planes are ten to twelve feet long, with a 65 horsepower engine, which supplies plenty of power for very exciting maneuvers.

The next item on the program was an opportunity to watch firing of one of the more recent developments in guided missiles, which took off in fine style and disappeared over the horizon out into the Pacific Ocean. The missile carried telemetering equipment, telegraphing down to the ground all the pertinent data in which the engineers are interested. They have very accurate theodolites trained on the missiles to get their speed and radar tracking is used to get their range and their eventual destination. In addition to this, they have spotting planes to observe the missile. A P-80 jet fighter plane takes off after the missiles, immediately after the launching and chases along right behind them to get photographs in flight.

The representatives were then guests at the Officers Club for lunch, and immediately after lunch the launching of the second missile took place. This firing was of a more or less standard reso-jet, essentially the same as the German V-1 rocket. This launching was delayed for some time because of some shipping that was in the area and had to be shepherded away. To do this, they scanned the entire area by radar to locate anything in the way. Surface craft in the danger area are notified by radio if possible. Otherwise a large four engine plane equipped with a powerful public address system flies over the area and notifes any shipping within range of impending launching.

During this wait the visiting representatives were privileged to see the missiles control center from which these rockets were fired, and also viewed some cutaway models of the missiles and had a short lecture on the operation of the reso-jet motors. After that, they went into the Flight Test Control Center, where they have the radar plotting and other tracking devices. When all was in readiness to fire the rocket, the visitors were placed behind a barricade of ½" boiler plate, with observation ports of 2½" bullet proof glass. In addition to reso-jet motors, this particular missile had four booster launching rockets, two on each side. This particular shot proved to be a spectacular event in that the missile crashed a few hundred feet off the launcher. Point Mugu personnel pointed out that such crashes occur frequently and are actually more informative than successes in trying to eliminate the various "bugs" which traditionally inhabit guided missiles.

Members of the Los Angeles Chapter of Representatives who attended included Norman Marshank, Robert Morgan, Carl Stone, Jerry Hill, John Hill, Burgess Dempster, Don Wallace, William Wallace, Harold Kittleson, Paul Wiley and John Tubergen. Guests of members who joined the party included Ron Bowman, of Denver, Charles Morgan, Al Bussie, Richard Stone, Mr. Bonney and Vern Warne of Los Angeles.

N A B Urges Anti-Labor Front and Status-Quo Price-Fixing of Labor

We receive many NAB News Releases, but significantly, this one was not received by us. The unofficial NAB mouthpiece "Broadcasting Magazine" DID *report this phase of the recent NAB Convention, however. To avoid coloring the report by quoting from context, we are in all fairness quoting the entire item as reported by "Broadcasting Magazine" in its May 24th issue:*

Labor relations as good public relations, a warning against the dangers of special talent fees, and support for joint negotiation of union contracts were stressed in an employe-employer relations panel discussion at NAB's Monday morning convention session.

The round-table review, 'Unscrambling the Labor Jig-Saw Puzzle," also advised the delegates that individual broadcasters would be "foolish" not to take advantage of principles established in the recently completed negotiations between the networks and the American Federation of Musicians.

Richard P. Doherty, director of the NAB Employe-Employer Relations Dept., conducted the panel after a speech in which he declared that "the broadcasting industry has reached the point where it is imperative that station management devote its primary attention to labor costs and to raising the volume of local radio advertising."

Panel participants were Joseph A. McDonald, ABC vice president and general attorney; William D. Pabst, general manager of KFRC San Francisco, and Arthur F. Harre, general manager of WJJD Chicago, Harold Essex, vice president and general manager of WSJS Winston-Salem, had been slated to take part but was unable to attend the convention.

Mr. Harre opposed the payment of talent fees as "pay within pay," declaring the system could extend from talent to other employes and adding that it is "a vicious principle which adds immensely to overhead." Mr. Doherty traced the possible growth of the special-fee system and, with particular reference to the threat it would pose to television, said it must be fought "to the last ditch."

Mr. Pabst contended broadcasters are "missing one of their best bets" in failing to get "their story" to the public through their own employes to counteract local pressure groups who oppose or find fault with radio. He urged managers to take their staff into confidence and explain what they and the industry are trying to do.

Mr. Harre went on record as "definitely" in favor of having all broadcasters in a given community negotiate jointly on union contracts. In addition to the pool of experience and ideas thus created, he pointed out, this method provides the strength of "a united front" in dealing with unions. Further, he added, it keeps stations in the community on relatively the "same labor status quo."

Mr. Doherty interjected that he could not understand why all broadcasters in a given city cannot at least exchange understandings from time to time. Their competition is for audience, not in the field of labor relations, he declared.

To other questions raised by Mr. Doherty, the panel indicated its views that it is "good insurance" for non-union stations to establish wage scales comparable to those in union outlets. But it was felt that, whether a station has part union labor or none at all, the question of matching union scales should be approached "with good judgment" and with an eye on prevailing local conditions.

Mr. McDonald, reporting on the new AFM-network pact, regarded it as indicative of improving management-union relations throughout the industry.

The ABC executive also lauded Mr. Doherty for his activities in the employe-employer relations field.

Mr. Doherty advised the delegates that his department would start within a few months to issue special bulletins on the subject of controlling labor costs.

These costs today, he noted, represent 60-65% of all station operating expenses and absorb 45-50 cents out of every dollar of station revenue. Labor cost ratios, he said, can be reduced by two methods: (1) Increased revenues, involving such factors as programming, skillful salesmanship, station prestige, and possibly reduced rates; and (2) maximum efficiency in the use of man-power.

He advised delegates to appraise their individual operations carefully with an eye to minimizing such labor-cost factors as employe inefficiency, inefficient assignment or supervision of work, and over-staffing.

Mr. Doherty said higher card rates are feasible "in not a few cases" if "(A) the station is doing a bang-up job of programming; (B) the station is selling programs to the sponsors who are able to use radio to the best advantage; (C) the station has an aggressive and successful sales campaign which is cultivating an active list of local sponsors to the point that there is a waiting list among sponsors who want to go on the air."

He suggested that managers compare their own costs and cost ratios with averages for the industry as made available by FCC and other sources; make employment standards "selective according to job requirements," give their management methods "an honest and thorough health check-up," and make sure that overlapping of jobs and wasting of time are eliminated.

Citing make-work practices of some unions, he said labor leaders must realize that "only as they cooperate toward the end that greater team efficiency is obtained can the wages of individual station employes be improved."

Join NABET

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?"

Turn to page eight, and carefully read the item, *Independence for the Broadcast Engineer.* The solution to the broadcast engineers' problem of honest, competent, and highly specialized union representation requires a single national, independent union, if their place in radio is to be bettered.

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

Switch to NABET

NAB—One Independent Union of Broadcasters

The NAB membership passed the 2000 mark just prior to the 1948 convention, an increase of 48% since last September's convention. Membership breakdown:

Total	2035
AM Stations	1271
FM Stations	650
TV Stations	3
Networks	3
Others	107

Total AM and FM stations in U. S., 2,996.

NAB "Union" membership 64%—(the *important* 64% as most non-NAB stations are small-town 250 watt platter-spinners.) This points up the obvious importance of "belonging" to a *national organization* devoted *independently* and *exclusively* to the *interest* and *welfare* of its membership. NABET is such an organization.

Any such organization, if its *aims* and *ideals* are to be achieved, must be operated *nationally* in a coordinated, efficient and resolute manner. Such operation costs money and requires a real investment of substantial funds and energy tendered with realism and purpose by its membership.

NAB members pay dues ranging from a few hundred to many thousands of dollars annually. (One national network pays $30,000 a year to remain a "member in good standing" of the NAB.) In addition, each NAB member pays the expenses of its convention delegation.

Are the *Employes* of the industry willing to *"invest"* in the security of their jobs? Figure it out for yourself—now—and see what your contribution amounts to. NABET collects *less than a dime a day* from some of its members and as much as a *two-bit piece* from others—based on a five-day week. Compare this with your car-fare, cigarette and lunch money. Is "unionism" really expensive after all?

How about the investment of your personal time and energy? Do you *attend meetings* regularly?—take an *active interest* in the business of your Chapter?—raise your *voice* in intelligent, considered, progressive discussion?—vote on Chapter and National matters?—*serve* willingly and diligently in union office?—on committees?

Do something with your life; for your fellow men; for your union; for yourself. Your *interested* and *cooperative service* is the *most valuable commodity* that you can offer in the interest of your fellow man and your industry. *Sell it* to the latter; *give it* to the former.

—o—

NABET

Offers One Independent Union for Broadcast Engineers and Technicians.

CONTACT ANY OFFICER. SEE PAGE 2.

NAB Fights Radio Time

The National Association of Broadcasters last week sent their big gun, T. A. M. Craven (who was a member of the Federal Communications Commission for seven years) into the FCC hearing on radio editorializing. The NAB, whose members own almost every radio station in the country, is on an all-out campaign to have the Commission repeal the Mayflower decision—the ruling which provides that, since radio channels are public property, station owners may not use them to express their own views.

Speaking of the Mayflower decision, Craven said: "Underlying this doctrine of the Commission is the fallacious belief that everyone has a right to be heard in the homes of America." The Broadcasters claim that a radio station is the same as a newspaper, and that preventing a station owner from editorializing is a denial of his right of free speech.

Labor groups which have previously testified in favor of the Mayflower decision include the CIO, the CWA, the International Ladies Garment Workekrs Union (AFL), and all radio unions in ABUG (Ass'n of Broadcast Unions & Guilds)—including NABET.

The American Civil Liberties Union has also defended the right of radio listeners to have access to all points of view. Unions have a vital interest in the question of who will be appointed to take the place of FCC member Clifford J. Durr, who resigned his post last week. Durr has led the fight to keep a single economic group from having a monopoly of the radio channels.

—o—

1948 BUSINESS ESTIMATES

1. Present boom—continuing.
2. BLS Commodity Price Index: up approx. 5% to 170.
3. Employed: 58 to 59 million.
4. Unemployed: 2 million, largely temporary.
5. Corporation profits: UP.
6. New housing: more than 1947; prices: UP.
7. NYC residential illuminating gas again increased 10%.
8. Federal Reserve warns publicly that credit inflation now exceeds pre-war level, and this symptom similar to that of the pre-1929-bust.
9. Labor, as usual, about two years late in catching up with the price spiral. ITU (printers) in New York just received 14½% increase in salary and other gains, 1 year contract again. Automotive, electrical industries settling for about 10%.

—o—

NABET National Council To Meet In Detroit

The 1948 NABET National Council Meeting has been tentatively set by President McDonnell as October 4-8, inclusive, in Detroit.

Westinghouse is remaining officially mum but it's understood good results have been obtained in Stratevision tests from a B-29. Signals picked up on TV channel No. 6 (82-88 mc) in Pittsburgh. FCC to be notified soon to arrange staff monitoring of tests.

Independence for the Broadcast Engineer

Only NABET meets this 3-fold non-domination test of union freedom and independence; only NABET assures absolute and final control by the membership.

I. Its union leaders and officers have been proven completely free of employer domination.

II. Its internal organization is constitutionally and operationally free and democratic.

III.It is completely free from the crushing moral and material effects of arbitrary *rulings* and *deals* so sadly common to the non-independent unions, entered into without the prior knowledge and consent of the membership affected, and from which members of non-independent unions have no recourse; witness the IBEW *donation* of its turntable jobs to the AF of M (still held in abeyance thru the successful efforts of NABET), and the IBEW *donation* of half its television jobs to the IATSE. The IBEW members affected were *told* of these rulings and deals *after* they became public knowledge. The IBEW members affected obviously did not initiate the action that resulted in their loss of jobs; they were not consulted during the negotiation of these infamous rulings and deals. This absolutely cannot happen in NABET, *because NABET is independent.* NABET has been and remains willing to prove its jurisdictional job claims before United States Courts and Agencies of competent jurisdiction, which is the democratic, the NABET way.

There was a time, not too long ago, when most of the engineers in broadcasting considered all radio as a hobby. They were then young, and few of them had responsibilities. These engineers considered contact with the *great names* as sufficient reward. Imagine working in the same building with the Happiness Boys, or Kate Smith. Sometimes Husing or McNamee might even speak to them! The $18 to $30 a week for *only* 60 to 84 hours a week was almost too much. Actually at some stations they worked for nothing!

In 1932 something happened that changed the picture. Depression hit radio and many a man went hungry. 1933 saw the NRA come into being, and the few men who still were working decided to form unions for themselves, within the framework of the companies for whom they worked. This was the only thing they could do, as there was no union in existence for *radiomen.* Thus were born the so-called company-unions of the broadcast industry.

Network "C" had a group of men in their engineering department who chose not to allow the company to dominate them. (The writer knew the leaders of this group well.) When it became evident that the company was intent upon dominating them, the leaders of this union group took the bit in their teeth and persuaded the men to join union "A." This action on the part of the men did not please the company, and before long several of the men were transferred all over the country. Those remaining in charge of this union "A" were finally maneuvered into a spot from which they could not extricate themselves, and they were forced into another union "W," which had been making a lot of noise for years, but had never done anything for radiomen. Union "W" was and still is primarily a mechanics union, with a large membership that has no interest in radiomen except to use them for the benefits (future) of these mechanics.

The engineers at network "N" formed their own union within the framework of their company, at the same time as the engineers at network "C." As time went on, the members of this union decided they would control their own destinies. Realizing they were amateurs in the labor field, they knew they would make painful mistakes. They have. They learned the hard way, but *they learned.* This union was so successful in handling their own affairs that before long, other groups that had independently organized in the same manner, were asking for admittance into this union. After long consideration, this union voted to change its constitution, and raise its dues, in order to finance the expansion requested by these other groups. Organized on a national scale, this union decided to remain *independent.* Let us call it union "T."

Because of the decision to not affiliate with any parent(?) organization, there have been many accusations of "company domination" hurled at union "T" by competing unions who are truly envious of the position this *independent union* enjoys in the broadcast industry. One large union "M," in no sense interested in ethics or the technical aspects of radio, tried to invade union "T's" jurisditcion. The *independent union* fought the companies, after they had attempted to make an underhanded agreement with union "M" for the turntable operations, in court, and won the battle to retain the jobs that union "M" sought to claim jurisdiction over. (The writer knows of no similar action by any other union.) Union "M" made a deal with the top brass of union "W" and got jurisdiction of the disputed turntable jobs at a network "C" without the members of union "W" having a word to say! Actually, the job was never handled by union "M" because of union "T's" court order. The engineers in union "W" owe their retention of these disputed jobs to the efforts of union "T"—NABET.

This *independent union* has been offered charters in other unions. One such charter was offered by union "E" for the express purpose of "running union 'W' out of broadcasting!" This kind offer was not accepted. Only an *independent union* can refuse such an offer. Only an *independent union,* one that makes its own decisions—and *all* of them—can be said to represent its members, because the other unions have no true regard for radiomen. Only recently we, in radio, have seen the job content of one union divided, and given in part to a competing union, by means of a *deal* between the top brass of the two unions (it has been alleged that management of a certain network also took part in this *infamous deal*) without the membership being consulted. Who was dominated by whom, and for what?

The independent union referred to is NABET. It holds contracts in the broadcast industry that definitely puts it in a dominant position in the industry. It is not under the finger of any labor czar; its constitution precludes czars. It has made mistakes, but the mistakes were *their own!* No ultimatums are issued, accepted, or blindly followed. That positively proves the absence of *internal* domination. The positive absence of *external* domination from its two major network contractors was clearly settled when it became necessary to engage

in a strike against both networks, and again when it became necessary to challenge these networks in the courts in the turntable jurisdictional dispute. NABET is *completely independent. Only* NABET can make that claim.

Let us consider the other unions some more. Union "A" has not complied with the requirements of the Taft-Hartley law, and may not represent its members before the Labor Board in cases where management elects to be "difficult," as it almost always does. Its membership is not too large, and is confined to just a few cities.

Union "W" is national in scope and has about the same number of members as union "T"—NABET. It is a militant, though a 2% minority part of the larger mechanics union, the members of which hopelessly outnumber the radiomen.

Union "E" has a few members in radio. This union, now a mere hanger-on, will issue a charter to any group in order that the parent union may get a foothold in radio or television, in order to provide secure, soft, lucrative jobs for its old members. It definitely has done nothing for its members, but held down their salary structure, in order to "butter-up" management, as its news releases indicate.

The point to the above is evident. Radiomen have shown that they are capable of running a union for radiomen, independent of other organizations. Radiomen do not need to assume the position of an evil appendage in the labor movement. They *have* men of aiblity, within their own ranks, to *lead* their field.

Independent unions have been successful for decades. Let us look at the Railway Brotherhoods. These unions are independent, and *successful*. They have achieved their present poosition because they revolted against the practice of domination of their affairs by other groups whose membership was greater, and so could outvote them in conventions. That is why these Brotherhoods have a unique position in the labor movement, and continue to maintain it.

Radiomen can do the same, and it is about time they did. All that is necessary for the membership to do is to forsake the leaders and organizations that are not interested solely in radiomen. Forget petty jealousies. In your union affairs, display the same initiative that has kept so many programs and transmitters on the air, and the radiomen will come into their own.

If anyone feels that union "T"—NABET, the independent union, wants to dominate the field, they should truly know the facts. The members of NABET want only *not to be enslaved* or submerged in any organization. The *name* of the union is certainly not important. The *manner* in which the union operates is very important. The existing independent union—NABET—could very well serve as a focal point for trial runs untll such time as *all engineers and technicians in broadcasting and television are in—*

One Independent Union.

PRES. McDONNELL—from Page 2

staff and moving them into the TV operation and making replacements in the AM operation with newer men. Hence, no great concern exists among members at WOW as to their future welfare. These two examples are, no doubt, indicative of the picture throughout the country. It does seem strange that management has no qualms whatever about up-grading and otherwise drawing upon existing personnel in departments other than Engineering when setting up a TV operation. Costs seem to be of little consideration here. If management can justify moving department heads from AM to TV as well as directors and announcers from existing staffs, it would be comparatively simple for NABET to insist that Engineers be given preferential consideration.....One choice item came out of some of my probing and has to do with what management anticipates from TV. NBC expects to reach the cross-over point no later than Nov. 1948 and will then cease to lose money on each individual program. By 1950 they expect the TV operation to be in the black and at some point in the years 1952-1956 are aiming for a gross revenue of $300 million per year. These figures would bring denials from every NBC official but I doubt if they will be too far off. . . ."

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.

Ham Issue Scuttled:Instead, descriptions and photos of NABET Ham Stations will be published as received, following several suggestions indicating this preference. *Ham Calls,* however, will be published on an annual or semi-annual basis, as revised lists are received from individual Chapters.

DO WE HAVE YOUR ZONE NUMBER?

Review of Current Technical Literature

By Lawrence W. Lockwood

Journal of Applied Physics—Mar. 1948

SIMPLE RELATIONS FOR CALCULATING CERTAIN TRANSIENT RESPONSES—W. Cunningham

The response of a linear transmission system to a step or an impulse is related directly to its steady state response to a sinusoidal signal of variable frequency. Several simple relations between these two types of response for low pass systems are collected here. These equations are empirical in nature, but generally may be expected to be in error no more than ±25%. Such equations may be useful in preliminary design work where great accuracy is not required or in checking results of exact tedious calculations.

Bell Laboratories Record—April 1948

ARTIFICIAL DIELECTRIC LENSES FOR MICROWAVES—W. Kock

A description of theory and construction of new microwave dielectric lenses for use in TV relay networks that exhibit refractive characteristics independent of wavelength and therefore are broadband.

Communications—April 1948

PHASING OF REMOTE TV SIGNALS—R. Palmer

Instrument designed to provide phase synchronization between vertical sync intervals of a remote composite picture signal and studio sync. Sine wave output of approximately 6 volts rms in amplitude permits use of equipment with current studio sync generators.

TEST INSTRUMENTS IN THE BROADCAST STATION—H. Eidson, Jr.

Part II of discussion, covering the broadcast station application of the capacitor bridge, VTVM and signal generator.

ENGINEERING FACTORS USED TO DETERMINE BROADCAST STATION TIME RATES—F. Sheehan

Graphical analysis reveals how engineering factors, such as station location, frequency and power control advertising rates.

Proceedings of the IRE—April 1948

AN ANALYSIS OF THE INTERMODULATION METHOD OF DISTORTION MEASUREMENTS—W. Warren and W. Hewlett.

Part A of this paper is an analysis of the intermodulation method of distortion measurement. Results obtained by its use are compared with those obtained by the harmonic-measurement method.

Part B has simple equations which give approximate predetermination of percent intermodulation distortion from three or five points on the transfer characteristic.

AUTOMATIC VOLUME CONTROL AS A FEEDBACK PROBLEM—B. Oliver

Feedback amplifier theory is shown to be applicable to the usual avc system. Expressions are derived for the loop gain in terms of the design requirements and the gain-control characteristics of the controlled amplifier. Using these expressions the design of an avc system is quite straightforward and its characteristics such as regulation and effect on desired modulation, are readily predictable.

A FLAT RESPONSE SINGLE TUNED IF AMPLIFIER—E. Bartelink, J. Kahnke and R. Watter

An intermediate frequency amplifier, providing double tuned circuits with negative feedback is described. Particular attention is centered on the problems arising in the case where relatively narrow pass bands are wanted.

COUPLED ANTENNAS—C. Tai

The integral equation governing the current distribution on two coupled antennas has been solved. The method used is an improvement on the work originally formulated by King and Harrison. Numerical values of the self and mutual impedances based upon the present work have been computed.

Tele-Tech—April 1948

HOW MUCH PAY IS AN ENGINEER WORTH?

Broadcast engineers voice their opinions regarding pay scales in the engineering profession. Here are some of their answers to this $64 question.

IGNITRONS IN BROADCAST SERVICE—H. Zuvers

Application of grid controlled rectifiers for high-powered broadcast transmitters provides long life and reliability; can be used to regulate voltage output and as circuit breaker.

NEW PROJECTION PACKAGE FOR TELEVISION—L. van Lieshout

Norelco's 'Protelgram" projection system for television is adaptation of folded Schmidt optical principles; designed to fit various size table and console cabinets.

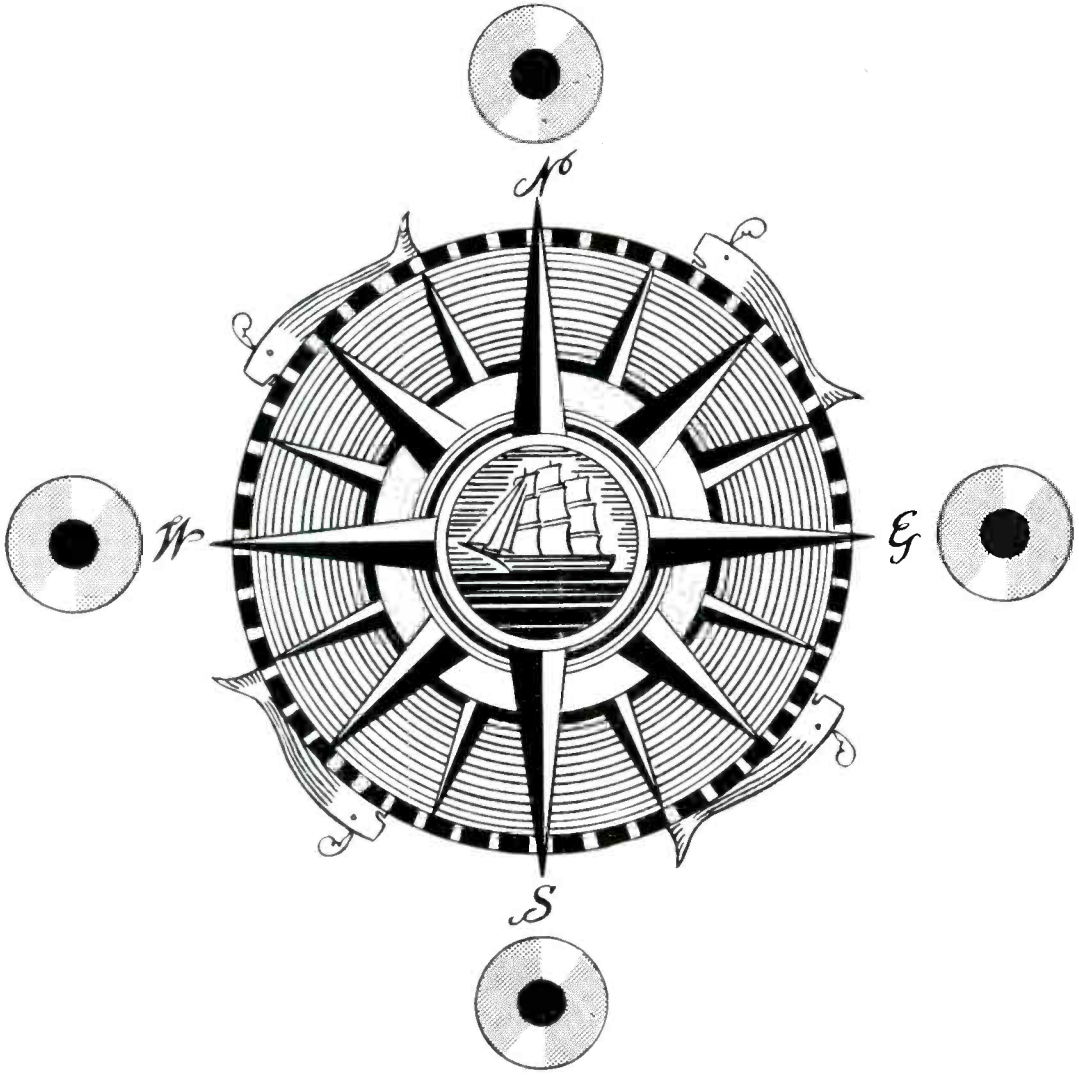
DESIGN OF AUDIO COMPENSATION NETWORKS—W. Savory

Application of correct equalization for various commercial phonograph recordings has an effect on character of reproduction. Part III of series.

LOW COST FM AND AM RECEIVER DESIGN—W Frankhart

Metropolitan FM/AM receiver circuit developed for table

FROM NORTH TO SOUTH ★ FROM EAST TO WEST



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models in $35 to $39 price range; design eliminates FM alignment gear, high frequency switching and offers 6 tube FM and 5 tube AM with 6 tube FM and 7 tube AM performance.

ENGINEERING A 50kw FM TRANSMITTER—C. Starner

Tube and circuit design, radiation, high conductivity seal, current distribution were some of the problems that required laboratory development before production.

TWO WAY TV RELAY—W. Forster

Using only two channel assignments, Philco's New York-Philadelphia hook up transmits simultaneous signals two ways; two chains may share channels without interference.

Audio Engineering—April 1948

TWO CHANNEL TWO WAY DRIVE MAGNETIC RECORDER—R. Zenner and R. Vaile, Jr.

A recorder designed to give good performance at low tape speed.

CBS TRANSMISSION MEASURING SET—D. Mawell

Describing a new instrument designed for precision audio frequency testing in broadcast service.

DESIGN OF ELECTRONIC ORGANS Pt. III—W. Wells

In this installment the author presents a detailed discussion of the Hammond organ.

Electronics—April 1948

COMPACT PROJECTION TELEVISION SYSTEM—H. Boyle and E. Doll

Triangular arrangement of Schmidt optical system permits design of compact projection box using 2.5 inch cathode ray tube and giving 12x16 inch picture. Corrector lens is made from gelatin sealed between glass plates. Pulse type 25 kv voltage tripling power supply uses special control circuit to improve regulation.

SQUELCH CIRCUITS FOR FM RECEIVERS—C. Carnahan

Simple circuits for disabling the audio amplifier of an fm broadcast receiver between stations. In several arrangements described the second limiter is used as a dc amplifier for supplying squelch voltage and no additional tubes are used.

BROADBAND LENS ANTENNA FOR MICROWAVES—W. Kock

Metal pieces distributed like atoms in large-scale replicas of crystal lattices produce focusing action. Lenses constructed of metallic dielectric made in this manner operate over the very great bandwidths that are desirable for efficient microwave radio relays.

FILTER CHARACTERISTICS FOR THE DYNAMIC NOISE SUPPRESSOR—L. McCracken

Analysis of the cascaded pair of four-terminal networks that form the basis for the high and low frequency response control in the Scott device. Effect of reactance tube as variable circuit elements is indicated.

WIDE DEVIATION REACTANCE MODULATOR—H. Helfrich, Jr.

Operating principle and design procedure for obtaining maximum deviation from reactance tube frequency modulator. Use of cathode follower minimizes shunting of the oscillator. A typical test oscxillator is described and a universal design chart is developed.

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.

CHICAGO

By Minor J. Wilson

WOODY LAHMAN who has been an NBC studio engineer for many years has resigned to operate his own business, the Peerless Level and Tool Co., of Sterling, Ill. Good luck Woody!

Rus Hunt and bride Pat have settled down to housekeeping; they were married May 7th.

Jim Daugherty is another ABC engineer to take a bride, having been married on May 29th.

Jim Lato announces the arrival of a fourth "harmonic" ROBERT FRANCIS.

RAY LIMBERG, HARRY MAULE, and WALTER LANTERMAN have been assigned to New York NBC television training.

Congratulations to Dick Wehrheim on his promotion to group six, as acting maintenance supervisor.

LOU HEIDEN has been assigned to the field department.

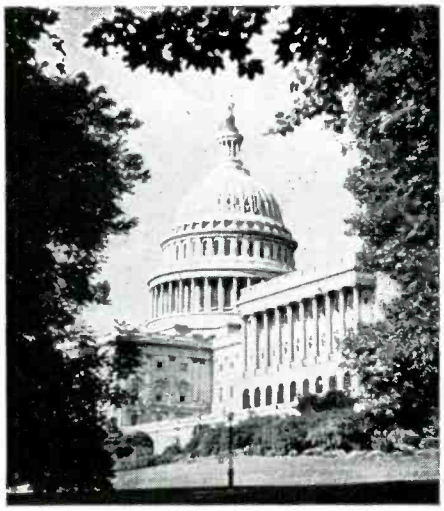
Among new men in Chicago engineering are: J. J. NATALIE, STANLEY STRASBURG, BOB BECKER and "RED" RILEY recently from WROK.

LT. COL. L. L. WASHBURN is serving a 60 day stretch in the army assigned to Washington, D. C. HUGH ABFALTER is acting Secty.-Treasurer of the Chicago Chapter during his absence. COL. FRED SHIDEL recently returned from 5 feeks at FT. ORD, California.

ARTHUR HJORTH was re-elected Chicago Chapter Chairman with a whopping majority, there was no organized opposition to his re-election. We here in Chi are behind ART all the way.

GEORGE MAHER, with the assistance of DOLORES, is doing a swell job of representing NABET and NABET's interests in the Chicago national office. At Woody Lahman's farewell party, we learned that GEORGE could still play a good game of poker. The boys around the studios feel that Dolores' picture would be an asset to the journal. We will have to see if we can't arrange it.

ART HJORTH is still waiting for that car.



WASHINGTON

By Warren Deem

Mr. Leon Chromak who hails from Manhattan is now a member of the WNBW Field Crew. Before coming to NBC Leon worked for the Bureau of Aeronautics, Navy Section. Mr. Chromak is a graduate of RCA Institute and holds a first class FCC licence and also a motion picture projector's licence. He had a professional rating in radio at the Bureau of Aeronautics. Leon is also a good businessman. He bought 17.85 acres of good timber land just 15 miles SE of the White House for $1,000. The timber alone is worth twice that price. He and his wife were looking for a small plot of land one afternoon to build on and accidentally stumbled onto this deal. He closed the deal in short order.

Why is it that most engineers would rather watch sports events than engage in them? This seems to be the case with NBC engineers in Washington. We have two engineers that were interested enough to play on the WRC softball team. They are Carroll Bolstad and Vernon Sweiger. Carroll plays third base and does a grand job of it. Vern is good at pitching. Aside from these two WNBW engineers members of the team are announcers, producers and actors. The team is in second place with a good chance of finishing the season in first place.

It as Saturday night May 22nd after an extra long Johnny Bradford show that the long awaiting moment arrived to tear down for the last time at the Translux Studio "A" and return the television studios to the Wardman Park Hotel. Facilities had been temporarily transferred to the Translux in February to wait for the new studios at the Wardman Park to be constructed. "Mike" Vossler arrived with the new field van, and equipment, cameras, control units, klieg lights and cables, were loaded up to be taken back to the Wardman. Not a tear was shed at leaving the much too small and hot Studio "A". It wasn't constructed for Television and was too small for all the equipment and hot lights. The AM engineers were glad to see us leave. We did such unethical things as bringing horses into their studio, crowd the corridors with stage props and use their valuable space. At the new studio we expected to move right in, set up and be ready to go on the air—crazy idea. What we found was a partly wired jack panel and half wired type 76-B2 RCA Speech Input Consolette. The field and studio crew's days off were postponed and everyone pitched in to complete the installation job. Frank Spain, assuming his 'birdlike" perch on the consolette table, and Wally Ward, wired up the control leads from studio and MC to consolette. John Rogers wired up most of the jack panel. Mac McClellan and his crew got busy making up light strips and Joe Colledge checked out the video facilities with Jim Weaver at Mastercontrol. The production department was busy painting scenery—even Johnny Bradford donned overalls and painted a bit. Vossler, Galvin and Swieger did wonderful jobs of construction on the four camera dollies. The dollies have cable skirts with enough clearance to keep the cables cleared for the dolly shots. No drinking fountains were on hand and the crew is still drinking drainage from the Wardman Park Pool at the Field Shop spigot. Glass for the control room hadn't arrived and pressboard went in its place, very hard stuff to see through. All will soon be in smooth running order with all the engineers and production men proud of their work and their new home.

"Let's get this meeting over and get to the beer and sandwiches, etc." was the cry at the May 27th meeting of the Wash. Chapter of NABET. John Hogan was re-elected as chairman of Wash. Chapter. After the votes were cast John rose to give a speech of gratitude and after 5 or 6 sentences was interrupted by someone saying "You're elected John, you don't have to make a campaign speech now."

One of WNBW's new engineers Mr. J. E. Platt has an unusual story to tell about how he got his Gp. 12 Xmtr. Job. Walter Godwin (W3ANJ) contacted J. E. on 20 meter phone about three months ago and struck up a DX friendship. They discovered that both had been 2½ stripers in the Navy. Mr. Platt was at Harlingen, Texas, Station KGBX, in the "south part" of "southern" Texas. Walter knew of an opening at NBC and asked Mr. Platt if he would be interested. Mr. Platt sent NBC a telegram explaining his qualifications and now Mr. Platt and family are here living temporarily in a trailer that they brought from Texas. Mr. Platt is very busily looking for a permanent residence.

Not to be bettered by NBC's new acquisition of two vans for the television field crew, "Clag" Spain has a new "used" motorcycle. The vans are super and have passed Vern Swieger's inspection. Vern is an ex-army man who knows his motors, but "Clag's" motorcycle—no comment!

Gene Beall is now at the WNBW Xmtr. Paul Anderson is learning the mastercontrol technics. Sam Newman is in the field for awhile and got a workout Memorial Day setting up for the program at the Arlington Natl. Cemetery Amphitheatre. Ed. McCaul is finished with his month's training at WRC studies and Bill Simmons went from MC to Xmtr. for a month. Walter Godwin had a month at WNBW and is now back at WRC. Joe Kriss is now taking his television training. This trade system is working out very well. Jim Butts is back from Severn and Carroll Bolstad is driving out there in his recently purchased Dodge.

I have a request to make of WMAL, WOL and WPIK—send some news articles to Warren Deem at the WP studios, WNBW, please.

Mrs. Rosita Hobart, a former NBC engineer was a recent visitor at the WRC studios. Mrs. Hobart did a wonderful job during the war with NBC. Mr. Hobart, is now with the Navy Department after a tour as chief engineer at a station in Vineland, N. J.

Frank Fugazzi recently sent some mint plants to Ralph Hamill. Ralph must be planning some cool mint julips this summer.

Union Shop Favored In 95 p.c. of NLRB Elections

By an overwhelming majority, employees eligible to vote favored union shop agreements in 660 of the 664 union shop authorization polls conducted by the National Labor Relations Board from August 22 to December 31, 1947.

In only three polls taken did a majority of employees fail to vote in favor of inclusion of a union shop provision in collective-bargaining contracts. In 391 elections a union shop provision was favored for American Federation of Labor unions, 74 favored such provisions for Congress of Industrial Organizations unions, 172 for the International Association of Machinists, and 24 for other unions.

On the question, "Do you wish to authorize the union named below to enter into an agreement with your employer which requires membership in such union as a condition of continued employment?" 85,118 workers, or 95.4 percent of the 89,244 who voted, answered in the affirmative. Since 100,060 persons were eligible to vote, affirmative votes on the proposition amounted to 85.1 percent of the total.

The number of petitions filed by unions with the National Labor Relations Board for union shop elections has been increasing steadily. From August 22 to September 30, 10 petitions were filed. During October, 139 petitions were filed; in November, 600; and during December, 1,345.

The polls were conducted by the National Labor Relations Board under the provisions of the Labor Management Relations Act, 1947. The act declares that it is an unfair labor practice for an employer to discriminate, or for a union to "cause or attempt to cause" an employer to discriminate, "in regard to hire or tenure of employment to encourage or discourage membership in any labor organization" unless the union has been authorized by the National Labor Relations Board to enter into a union shop agreement. The Board is instructed to certify a union for such a purpose when the union files with it a petition alleging that "30 percent or more of the employees within a unit claimed to be appropriate for such purposes" desire such authorization; and also after the Board has taken a secret ballot in which a majority of the employees eligible to vote have expressed themselves in favor of a union shop.

HUDSON NEWS

Al Nilson of Field celebrated his twenty-fifth anniversary aboard his Chinese Junk "Amoy" which is tied up at a New Rochelle pier from whence Al commutes to WOR.

Charlie Thropp of Master Control finished his celestial telescope after three years of labor during his spare time. He had to grind down a second lens for the scope after his first one bounced and shattered on his concrete basement floor..... Warning to all those who live in Flushing.....Keep Your Bedroom Shades Down!

John Ruddley of TV Engineering Planning moved on the higher intellectual levels for an evening last month. He was toastmaster at a banquet which took place at the Columbia University Men's Faculty Club.

Carmen Auditore of TV Engineering Planning is sporting a 1948 Studebaker.

Bill Boher of Master Control was elected as chairman of the Hudson Chapter. Big things are expected of you, Bill. And many thanks to Gene Clark for his fine work as chairman this past year. Gene remains a national executive board member.

John Garlinger shot a 90 at Forest Park Course and won't talk to anyone. Albrecht, Clark, Hadden, Bergen all polishing their clubs for a busy season.

Schaeffer and Beck of Sound to New Orleans for a vacation. Took a portable recorder along. Perhaps someone should tell them the Mardi Gras isn't for some time yet!

All engineers welcome back Milton Kaye to the musical staff of WOR as pianist. He's a grand fellow and great artist. Good luck, Milt.

BALTIMORE

We held a chapter meeting on May 3, for the purpose of electing officers. John Lappe, Butch Stockslager, and Oliver H. Oliver were the nominees for chairman. Oliver declined and Butch received but one vote, making Johnny the unanimous choice. Johnny then wanted to re-appoint Oliver as secretary-treasurer. Oliver has held this office twice already and he said that he would like to decline but stated that he would continue until someone else was chosen. We all agreed to let him continue in a temporary capacity until our next meeting. Gil Boehl and Bob Parks were appointed to the auditing committee to look over our books.

We have a new member in the Baltimore Chapter. He is Donald Esslinger and is formerly from the Glenn L. Martin Co. He is to operate the new Midnight All Night Show remote over WITH.

Al Hedrick got up an urge to build up a TV set and is lately seen running around with miles of wire, bundles of surplus sockets, condensers and coils. The set is partially complete and it looks like a nice job.

The other afternoon Gil Boehl was waiting for his relief to show up when BANG off went the AM transmitter. He just happened to see one of the tubes in the final all lit up like the Aurora Borealis right before it konked out. It seemed like ages, he said, to get a spare from high up on the tube rack and put the transmitter back on the air. The operation only took slightly less than one minute. Time sure appears scarce when something has to be fixed in a hurry.

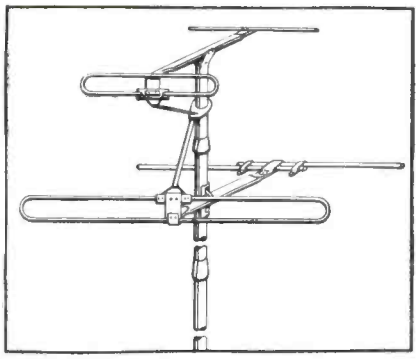
Royce I. Heintz.

TELEVISION NEWS

RCA announces its application for an experimental TV station in Washington, D.C., to operate at 510 mc., simultaneously with NBC's Washington TV outlet, WNBW on 67 mc. Results of tests will be available to the FCC and the industry as a guide to future TV frequency expansion. A converter is planned to adapt

present TV receivers to the higher-frequency oxperation. The experimental TV signal is expected to be on the air about Sept. 1, with an effective radiated power up to 25 kw, which will permit field-strength surveys over a wide area of varying terrain.

Technical Appliance Corp. of Sherburne, N. Y., announces its No. 465 combination High Band and Low Band TV



antenna, which it is claimed will provide for proper reception of all 13 TV channels. Two separate antennas are used, each a folded dipole with reflector, and connected with a quarter-wave link. The construction permits independent orientation of the two antennas.

In testimony before the Interstate and Foreign Commerce Committee, RCA's Dr. Jolliffe stated that a shift of all television to higher frequencies at this time would mean "no television at all." Instead, he proposed that television can *expand* into higher frequencies later without disrupting its existing service to the public. Simple frequency converter would permit existing TV sets to receive the higher-frequency stations, as TV *expands* in that direction.

Mimeographed copies of the 81-page report (PB-75819; Television development and application in Germany) sell for $2.25, and may be obtained from the Office of Technical Services, Dept. of Commerce, Washington 25, D. C.

General Electric announces that it has shipped the deep South's first high powered TV transmitter to WTVJ, Miami, and is expected to be in operation in July. Rated at 5 kw, Channel 4.

Robert E. Shelby, Director of NBC's Television Engineering Operations, announces the temporary transfer of NBC-AM engineers to New York for technical training in TV. The training will consist of formal lectures and operating assignments that will familiarize them with the new techniques. The engineers transferred are:

W. F. Lanterman	Chicago
R. A. Limberg	Chicago
H. R. Maule	Chicago
C. S. Bidlack	Cleveland
R. J. Plaisted	Cleveland
M. S. Adams	Hollywood
C. W. Comegys	Hollywood
R. J. Miller	Hollywood
O. F. Wick	Hollywood

General Electric announces the shipment of a 5 kw. TV transmitter and studio equipment to WNAC, Boston.

TRADE NEWS

New York University scientists returned from recent trip to Puerto Rico, where they made cosmic ray observations. Balloons on first flight reached 80,000 feet; second flight, 107,000 feet—believed a record for the equatorial zone.

G. E. announces a new distortion and noise analyzer, type YDA-1. Will measure distortion down to 0.1%. The noise band width is 30 to 30,000 cycles. Accuracy, 5% of full scale.

New Edition of "RCA Receiving Tubes for Television, FM, and Standard Broadcast"—form 1275-D, includes characteristics, socket connections, and similar data. Includes kinescopes. Ten cents from tube distributors.

Southwestern Division of the A.R.R.L. will hold its annual coast convention at the Alexandria Hotel in Los Angeles October 2 and 3, according to Rudy Jepsen (W6KEI) district director of ARRL. The fourth annual Pacific Electronic Exposition will also be held in Los Angeles at the Biltmore, Sept. 30, Oct. 1 and 2.

The RMA 1947 breakdown of sales shows increased business in 1947. The available figures indicate a continuance of "good business" into 1948.

RCA Institutes has moved its New York quarters to 350 West Fourth St.

Rider announces Television Manual Volume 1, of over 1350 pages of manufacturers' data.

Shure Brothers announce that their "Muted Stylus" replacement phono needles are available in osmium or sapphire, and that they are the only needles that can be used in the "Muted Stylus" crystal cartridges. Osmium list price is $1.50; sapphire list is $2.50.

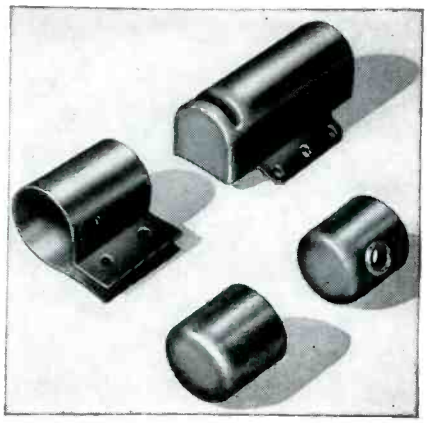
RCA announces an electronic microammeter, capable of measuring DC currents down to one-billionth of an ampere; portable and battery operated. Intended for chemical, medical, radiation, and other fields of research. Type WV-84A, $100 list.

RMA's receiver manufacturing production figures for 1947: FM/AM, 1,175,104. TV, 178,571. All sets, 17,695,677. Approximately 72% of all home receivers were table models; 15% were portables. In addition, 291,000 phonographs and 225,000 record players with radio attachments.

G. E. announces Studio-Transmitter link equipment operating between 920 and 960 mc, which meets FCC requirements. Noise level 65 db below 100% modulation; less than 1% harmonic distortion; stability .005% of carrier frequency; power output, 10 watts. Weighs 450 pounds. The receiver is crystal controlled and weighs 70 pounds.

The Veterans Administration reports about 70,000 vets are taking training in radio and communications fields under the G. I. Bill.

Aerovox Corp. announces motor-capacitor hardware, for neater, safer, and more



business-like motor-capacitor jobs. Literature available from Aerovox, New Bedford, Mass.

Clarostat announces smaller 15/16" diameter carbon volume controls, with-

out sacrifice of electrical or mechanical sturdiness, and is available with or without switch.

DIXIE DOINGS

By **SAM LILES**

The boys on the graveyard shift have a sweetheart on the Raleigh long distance board, name of Sybil. She tells them when it is time to put the carrier on, advises them in affairs of the heart, and helps figure the income tax. One cold morning about sign-on minus thirty minutes, Howard Sugg yanked the patch cords off his audio racks and began calling the studio for the control operator. All he got for his pains was minus fifty DB of line hum and considerable silence. So he picked up the outside phone and put in a call for 9742. Sybil let out a yelp. "You can't do that," she said. "You'll get the boy in trouble." "But," said Sugg reasonably, "I have to call the supervisor. I don't know who has the watch." "Well, I know," says Sybil, "and I'll have him down there on time, never fear." And she did.

Nick Pieler, a transmitter man with a fast inside pitch, left us last March to join the capitalist class. Nick and an assortment of our announcing staff are opening a thousand watter in Wilson, N. C., with the call letters WVOT, Voice of Tobacco-Land. Nick refused our suggestion of call letters WBOF, We're Balls of Fire. It is with great regret that we part company with Nick, who could always be depended on to take the midnight shift, make the coffee with his own materials, and to stand pat on two pair and bet a large stack.

Right down No. 1 highway about two whoops and a wavelength comes now a new station, WNAO, Chief Engineer Bascom Porter. Glad to have you in the Reedy Creek neighborhood, boys.

J. Willard Dean won the May voting classic by more lengths to spare than Citation in the Kentucky Derby. Willard was on the point of refusing the nomination a few hours before the election but he had a visitation wherein he was commanded to lead his people out of the wilderness. Dean hews to the union line and lets the cuss-words fall where they may. Through years of unswerving devotion to the welfare of NABET and its members, he has won the confidence and respect of all our members.

Preston Pearson, the lothario of Gresham's Lake, is reported skipping over the water in a new and snazzy speed boat. Last year the gals crawled all over him getting into his new Mercury convertible. They do say that moonlight on the water cuts down the resistance and increases the frequency.

We were sitting at the curb waiting for the time to run out on the parking meter so we could leave without losing money, and got to thinking about radioman second class Jeremiah Cassidy, former mattress salesman of Casa Blanca. Cassidy threw some notable drunks in Casa Blanca and Algiers, usually about once a month. He called them his "Periods." During these times he was quite likely to tell the admiral himself to "blow it out the bunkhole" or any other aperture that came readily to mind. When the brass tried to discipline him by sending him to an active theatre, he would take out his false teeth and heave them over the wall into the Casbah, which made it necessary to spend three weeks in the base hospital getting new teeth fitted.

We once had a bright young college student filling in at the control board. The manager brought around some high-powered visitors and pounded on the window. No answer. The boy was fast asleep. No amount of pounding could awaken him. Two days later, he appeared in the manager's office. "Mr. Mason," he said, "I would like to ask if we could have a new chair in the control room. The one we have is very uncomfortable."

That brings up the story of the time during the early part of the war when guards armed with shot-guns were posted near the antenna towers. Andy Radford, captain of the guard, making his rounds early one morning found one of the guards fast asleep. He took the shot-gun out of his hands and fired it off just over the man's head. The guard turned over on the other side and muttered, "Must be Fourth of July!"—and went back to sleep.

Seems like a good idea.

BOOK REVIEWS

RADIO AMATEUR'S BEAM POINTER GUIDE—John F. Rider, Publisher. 32 pages, 8½x11", $1.00.

By using the charts in this book, the radio amateur can accurately point his beam antenna to any country or island

in the world which has been assigned an amateur prefix. The charts in the book are calculated so that the radio operator can point his beam from any place in the U. S. (as well as many foreign cities) to any place in the world. Beam positions are indicated for 22 cities around the country; the text explains that the bearing stated for a given location holds for locations within a radius of 200 miles from the specified location.

The orientation of the antenna in degrees from magnetic north for every prefix is tabulated in this book; contains a country-prefix listing and a cross-index of a prefix-country list. Explanation of great-circle maps; the difference between geographic (true north) and magnetic north; use of the tables, etc.

* * *

THE ROOF OVER YOUR HEAD — D. Van Nostrand Co.

Mentioned here for the benefit of our many home-owners and potential home-owners. The publisher presents this 80-page, 5½x8¼ book free to purchasers of their Home Mechanic's Handbook.

This A-B-C of home owning discusses briefly the economics of owning or not owning your home, unsound financing hazards; picking the right spot in the right community; the availability of utilities and sanitation facilities; zoning regulations and local nuisances; the relationship between you and your architect; a chapter is devoted to Buying a Ready-built House. Several floor plans are included.

* * *

FREQUENCY MODULATION—VOL. I., published by the RCA Review, RCA Laboratories Division, Princeton, N. J. 515 pages, 6x9", hard cover, $2.50, plus 20c postage outside the U. S.

This is the seventh volume of the RCA Technical Book Series, and has been edited by Messrs. Goldsmith, Van Dyke, Burnapfi Dickey, and Baker. The papers in this volume cover the period 1936-1947, and are presented in four sections: general, transmission, reception, and miscellaneous. Each section includes papers reprinted in full and several reproduced in summary form only, with appropriate original publication data indicated in each case. As additional sources of reference, Appendix I includes a frequency modulation bibliography and Appendix II lists papers dealing with frequency modulation station placement and field survey techniques.

Omaha Activity and Ham News

By LOUIS DeBOER *and* CY HAGRMAN

The home of your reporter, that L. DeB., was partly destroyed by fire—thank God for insurance. If it wasn't for the fast thinkikng of my wife, the house would have been a total loss. To make a long story even shorter, I still have a place to park the body.

Cy Hagrman has gotten spring fever—he is finally getting his car out of the garage and getting it fixed so he can enjoy the wonderful spring weather and his vacation.

Speaking of vacations, that time has rolled around again to start looking at travel folders. Roy Ekberg, formerly of Iowa State University, is now employed as relief engineer at the WOW control room. Roy has had several years experience in the broadcast field, besides two years service as an instructor in the Signal Corps. We feel that he will be an asset to the engineering staff. Cleo Hansen is working the transmitter vacation relief. He is a student at Dana College, Blair, Nebraska, and he also worked the transmitter vacation relief last summer.

By the way, since your reporter can't type—and even if he could, it's much easier to dictate—this column is being typed by the engineer's buddy, Patty Carter.

The first member to start the vacation ball rolling is Glenn Flynn. His vacation will be spent in his back yard if his two boys don't get over the measles soon.

Bill Dunbar, SE, will spend his vacation on the high seas as a member of Uncle Sam's Navy. Bill's in the Naval Reserve and will sail on an aircraft carrier in the south seas.

Our good chairman, Bob Rudd, has finished putting in his potatoes—which means that Bob will have something to do in the evening. That is, besides working, helping the boys with their pigeons and working ham radio.

Al Maller, SE, has finally got an apartment—what a relief, huh Al?

Larry Sibilia, SE, has been playing tennis with the farm director of WOW. Since Larry has been beating him, I wonder if he is thinking of some nice hog-pen to drag the mike cord through—better look out kid.

The two most active hams in the chapter are G. Flynn and our Chapter Chairman, F. A. (Bob) Rudd.

Here, more or less, is a thumbnail sketch of the boys and their rigs.

G. Flynn, W∅MHV, of 3335 Summit St. is running 600 watts to a pair of HK254's and a three element wide (spaced) beam. Glenn is quite active on 10 and has entered most of the DX contests. In fact, he won the midwest division CW DX Contest held last year by A.R.R.L.

He also has a WAC certificate on phone and has worked a total of 35 countries. Glenn is more active on CW than phone; in fact, he has often said that he would like to sell the 400 watt modulator of his rig. His location on top of a high hill (in the winter time he parks his car at the bottom and has to walk home) and beam antenna allow him to put a good signal in any direction. However, Glenn has the same trouble that is common in hamdom—that of XYL dodging in order to get at the rig. Well anyway, Glenn has the loudest voice on the air in the Omaha Chapter.

Another common call heard on the air lanes is that of our Chapter Chairman Bob Rudd, W∅EUT. Bob is running 200 Watts on 80-40-20 and 125 watts on ten. His antennas are a long wire center feed on 10 and two half waves in phase on 20 and on 40 a half wave center feed. On 80 Bob uses a doublet, 16 feet off the ground. Our chairman is active in both the Iowa and Nebraska nets, and has acted as net control on the Nebraska net several times. One of the rare contacts made by W∅EUT, was the working of KH6oC on the *French Frigate Shoals*. It is an island 900x250 feet, and is a Loran station of the U. S. Coast Guard. It would be a swell place to get away from it all—since ships make only two calls a year. Bob's gardening and yard work—besides trying to keep ahead of three swell kids—keep him away from his rig more than he likes; however, he has logged 28 countries—not bad!

There are quite a few more hams in the Omaha Chapter. They are:

Glenn Flynn and His Rig

Bob Rudd and His Rig

Louis DeBoer	WØAXY
Roy Glanton	WØGTC
Al Maller	WØDCQ
Mark McGowan	WØNZ
Roy Ekberg	WØLIQ
Cy Hagrman (ex)	W9DWB

So look for us on the bands fellows, and we'll be sure to give you a good QSO.

—o—

DETROIT

FLUTTERBLAST—Detroit NABET's Donegal Fair was held May 12 ... the constitution insists on calling it the yearly election but the writers of said constitution never attended one of these brawls. ROGER (you don't say!) ELLIS authored this pre-election statement, "I want another term as Detroit Nabet chairman like I want an eight inch hole in my head!" —Literal translation—"I'll take it again!" "The Bean" was elected by acclamation and a good choice it was. ROGER E. has the peculiar and special quality of dispensing controlled confusion far and wide—this characteristic of the elongated Boston Boy comes into its own during periods of negotiation. A very appealing story comes to us from one of the older termites who inhabit the woodwork in our conference room—and who has seen many labor conferences come and go. It seems that during the last NABET-NEWS meeting held there, ROGER went into one of his controlled confusion routines ... much on the order of Mammy Yokum throwing a spasm. After ten minutes of this, ROGER had one of the management reps agreeing that the increasing cost of tummy filling was a serious thing—and that something certainly should be done about it. Said rep suddenly came out of his fog to find the temperature of the room had taken a sudden dive for the cellar ... and that the icy daggers being thrown at him by his brother reps was chin high and climbing. He sat in spiritual solitary confinement for the better part of an hour.....When the mighty fall, Gentlemen, the thud can be heard for miles.....An election summary would run like so ... ROGER ELLIS chapter chairman, AL (happy hips) SANDERSON AM studio councilman, GILL (two dimensional) RIX TV studio ditto, RUSS (parley 'em) WILLIAMS TV remote crew councilman, JIM (high pockets) NORTON TV/FM transmitter councilman, and MAC (worry wart) McCAUSLAND AM transmitter councilman ... and a more astute group of characters would be indeed difficult to find.

PLOTCHER ... The results of the election were foregone conclusions by and large ... the remainder of the meeting was devoted mainly to and highlighted by lil' chum STEWART and his yearly financial report.....To the uninitiated, this report might sound legitimate ... but to we who alternately laugh and scream at the antics of this rotund individual, whose knees are built just a little closer to the ground than anyone elses, the report is a yearly event to be looked forward to. DAVEY minutely reported his expenditures ... several of his items were not without their own unique quality and purpose. Among the items listed under cash going out ... DAVEY entered $247.17 spent on apples for the chief engineer ... in addition to $48.23 to simonize said apples. Still another extremely unconventional entry was an expense voucher claiming $1128.99 shot to Hell buying hamburgers for the director of engineering, the chief engineer and the station manager on forty-seven different occasions. Needless to say, the shinnigans of the STEWART family's ebony lamb hit the aggregation

(To page 20)

DETROIT—from Page 19

with the force of an unrequested $30 per week raise...there was howling and screaming and tummy laughs were the order of the evening. It does anyone's heart good to see the easy camaraderie and good fellowship which exists in a staff as large and as varigated as WWJ's engineering crew.

CONFUSED THREEP..An errant and wandering electron spilled a little fresh fuel for the latrine-o-gram boilers a short time ago.....It seems the Great White Father might do just a little expanding in the not too distant future.....NOTE TO NEIGHBORING STATIONS—check your antenna currents carefully...all that RF might not belong to you.

TWO POINT THREEP...Look to WWJ's cooking editoress(?) for ingenious and cueless cues. AL (just married and looks it) FURGET was assigned to set up a cue mike for a non-broadcast cooking show on the WWJ stage. His mikes were to be open in time to get the cue "Now, I think the cookies are ready...," at which time a cooking assistant was to scuttle down to the WWJ kitchen and remove the cookies from the oven.....You guessed it..the mikes weren't opened in time..the stove wasn't shut off in time..and the cookies emerged..each one blacker than Taft's heart..there must be some moral to this tale..but I can't find it.

SIZZLER..The men who allow neither sleet nor storm nor blah blah blah to stay them brought yours truly a letter the other day..an unusual letter for the writer didn't want money. It was written by one (thank goodness) BILL SABO of WCAE Pittsburgh W3BCY exW8BCV and an old buddy of this Westbrook Pegler in reverse. BILL writes that he peruses (ROG ELLIS says that means 'reads') the NABET JOURNAL (STOLZIE—better you should check the mailing list) and was astounded to see the Detroit copy being written by RED LEWIS..he didn't know I could write. BILL reports that WCAE is going FM in the near future....with the possibility of TV eventually putting in an appearance..providing the six outfits now fighting for the one remaining Pittsburgh channel drop dead or go broke. BILL..are you fellows at WCAE unionized..or do you belong to IBEW.... (NOTE TO STOLZY...that's cute, chum—leave it in!)

BLOOPER A LA DEFOOF...W8IJA..HEY, that's me.... awoke one morning last week....after a particularly happy night spent in the ever soothing arms of Morpheous..to find his tower and four element ten meter job flat on the ground. Well—not quite flat..for they both looked like a not too edible pile of aluminum macaroni (I can't spell spaghetti). The beam is back up in the air..my wallet is back down at the mouth..and ten meters is flatter than a saucer of yesterday's beer.....There ain't no justice.

THUNDERSPRAKE..Video vagaries are sufficient to drive an AM man nuts—the inference being that while a condition of complete insanity is not a prime requirement for TV work—it is a definite asset. For better than a year the eccentricities of video have been shaping our modus operendus. In that time the more lucid or normal branch of the organization, e.i., AM, has categorically classified this occupational ailment, hereinafter termed VIDEO-itis, and has outlined the progressive stages of this insidious trouble. You who contemplate TV with a happy-go-lucky and carefree outlook of a youngster with a new toy—take heed—take care—you should see what it has done to our staff...goodness gracious! The ailment progresses through four or five distinct and extremely unpleasant stages. No. 1—The video man will start whispering sweet nothings to his equipment (this stage is easily curable with proper treatments), No. 2—The camera or monitor will start whispering back—and is plainly heard by the engineer (this stage is still curable but with extreme difficulty,) No. 3—Suddenly the engineer begins to clearly understand the words being spoken by the seductive crackle finished boxes (cure at this stage possible but certainly not probable—don't take any bets unless you get REALLY good odds, RUSS WILLIAMS of TV remote, often makes book on this matter), No. 4—TV man stays after work—on own time, starts sleeping on the couch at home and forgets the kids names—all the while his right eye is gazing soulfully into his left (here you'd better get the boys together and call for a special assessment—what else?) NOTE TO ED STOLZY—I can't describe the last stage—it's too TOO horrible. However, those new canvas sports jackets..with the sleeves that wrap arond..in the back ...are chic when embossed with WWJ/TV in big red letters.

TWEETER..We were informed by one of WWJ's more versatile manglers of the truth that an objection was raised concerning the listing of ham calls in the Detroit copy. Said complaint was received, judged and duly filed in the square file. The originator of the complaint was a genial gentleman, who, incidentally, is the Director of Engineering for a whole backhouse full of radio stations. Said stations, reading from left to right..and who reads anything any other way, are WWJ, WWJ/FM and WWJ/TV. He also rides herd on another flock of mobile and portable jobs. The point in the making is this..he's the big boss...sooooo...when he complains..head ye, kiddies..heed ye! E. J. LOVE is the boy's name, W8AET is the call and the QTH *was* Pittsburgh, a fact for which we all at one time or another are happy—and then not quite so. EJ (I always call him EJ—very very softly) have we atoned?

FOLLOW UP BLOOPER...Yours truly has had many many extremely pleasant early morning rag chews with fellow BC men. Among them are W9OAV, Bob of WGN and W9WUB, both boys of the Chi area and laboring daily in the world of kcs and low pay. On occasion W8ZWC of WAKR and W9IMZ of WTMJ join us in our 3855 kc bull pen. If any of you gentlemen (and mental reservations are in order) jern us, lads, jern us. In spite of belonging to a rival union(?) the gentry of the ham lanes are seemingly nice eggs..and while the going occasionally gets a little grim..NABET doesn't suffer. We merely mention wallet contents..and the subject is changed.

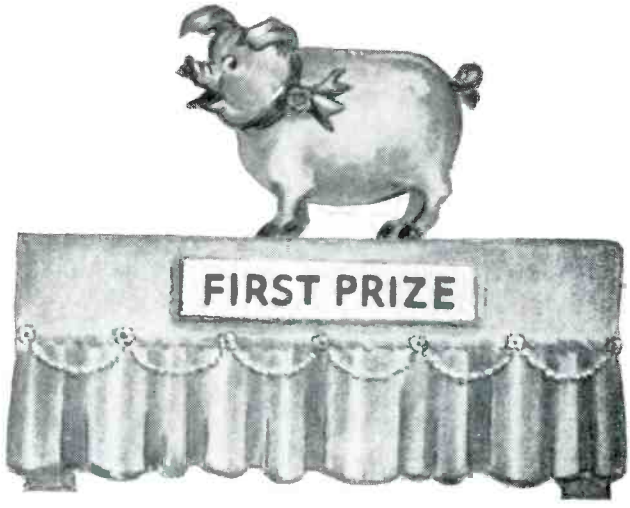
FLUTTERBLAST IN REVERSE..Open letter to Messrs. (and I do mean messers) TAFT & HARTLEY, Washington, D. C.....The insidious and multifaced ramifications of your so-called labor bill, and your consistently inconsistent thought processes have collectively been the greatest recruiting device the Democratic party has found to date. And for both you astute congressmen I wish careers and longevity comparable to the future your bill will experience and I hope enjoy.

Very sincerely,

H. LEWIS—Detroit.

HAVEN..Yours truly will be basked in the sun and the moon on a vacation of sorts. May 29 I reported for active duty with the AAF—ain't that a grand way to enjoy rest. See you in the B.E.J.—Red Lewis.

WHAT MAKES A GOOD RECORDING BLANK GOOD*?



INSPECTION

It has been said that "*pigs is pigs.*" Lacquer-coated discs, however, regardless of science in the manufacturing process, do not always turn out to be recording blanks. The suitability of each Soundcraft blank for broadcast-quality recording is judged by the highly trained personnel of the inspection department.

Aside from routine checking of center-hole size and disc concentricity, the prime task of inspection is visual search for minute physical imperfections in the recording surface. One of the few Soundcraft operations that depends on the human element, inspection is carried on in controlled surroundings. Scientific lighting, room-coloring, temperature, humidity, and dust-conditioning all contribute to consistent inspection, grading, and discarding of rejects.

The common dilemma of disc inspectors has long been the tendency toward sliding standards. When the runs are good, it is human to tend to grade down and vice versa. To assure *absolute* standards, Soundcraft maintains inspectors to check the inspectors. These *final* inspectors not only double check the original grading but also eliminate any recording blank accidentally damaged subsequent to initial inspection.

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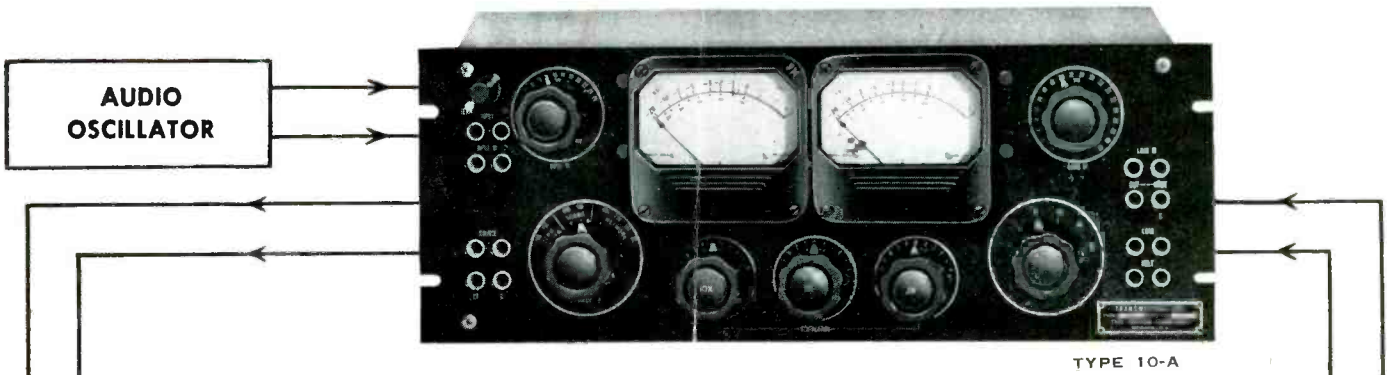

TYPE 10-A

SPECIAL FEATURES

1. Completely shielded wide range isolation transformers used in the Input, Source and Load networks. Set functions equally well from balanced or unbalanced oscillators and measures balanced or unbalanced systems.
2. Accuracy ±0.1 DB, 50 cycles to 15 KC.
3. Accuracy independent of level over the range +26 to −100 DBM.
4. Source isolation provided for measurement of filter or equalizer networks or unloaded transformer input systems. Loss of isolation network automatically registers on the attenuation dials.
5. Attenuation steps of 111 DB in steps of 0.1 DB.
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APPLICATIONS

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2. Audio Loss Measurements.
3. Complex Circuit Measurements.
4. Measurements of matching and bridging devices.
5. Measuring Mismatch Loss.
6. Frequency Response Measurements.
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