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THE BROADCAST ENGINEERS' JOURNAL

NABET Affiliation Committee Final Report

VOL. 17, No. 3 MARCH, 1950

N. A. B. E. T.

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A Message to the Members of NABET

from

JOHN R. McDONNELL
President, NABET

Regardless of what our decision may have been, in respect to affiliation, the various contacts with other unions, during the period of exploration, have had the beneficial effect of highlighting the community of interests of Radio and Television men regardless of their Union label, and, additionally—pointing up the wisdom of the National Council, at its 1949 meeting, in establishing the policy that NABET will not, in its official publication—or otherwise, indulge in the finger pointing and mud slinging tactics we have sometimes indulged in in the past. These other unions may have their internal difficulties but, as long as we remain NABET, they are no official concern of ours.

On the contrary, let us develop our community of interests with the other Unions in the field, through such associations as NABUG and its local equivalents and develop further the friendly feeling generated by the recent meetings of NABET officers and the Affiliation Committee with representatives of CWA, IATSE and IBEW. The man at the broadcast or television station down the street from you may pay dues to a different Union or may be unorganized. In any case it is in your best interest, and his, that every effort be made to break down the barriers of suspicion and doubt which have been fostered and developed, in many cases, over a long period of years. It is essential that radio and television men get acquainted on a local and individual, as well as national, basis if we are to make further progress toward the ultimate goal of one Union for radio and television men (engineers and technicians).

JOHN R. McDONNELL,
President—NABET.

George Maher

NABET

Executive

Secretary

After the first month in the office as Executive Secretary, it is altogether timely that a statement of policy should be given to the membership as regards our approach to the manifold duties of the Executive Secretary and to state the aims and purposes that we shall maintain and hope to accomplish.

Disregarding, for the moment, the overwhelming importance of the question of affiliation, if any, it is vitally necessary that the organization of NABET, as it now exists, be drawn closer together in our internal organization and every effort made to capitalize on the potentials of the present organization to the end that we shall be able to do a better job in behalf of our membership. This is extremely important, in our opinion, since NABET must be maintained as a going concern, no matter what the decision of the membership is with regard to affiliation.

Ways and means must be found to affect certain economies of operation and at the same time to improve the service presently being rendered to the membership. We might add that we are convinced that the service to the membership can be improved and at the same time bring about a more economical method of operation to the extent that the dues can be reduced.

Insofar as NABET's organizing efforts are concerned, we must, for the time-being, rely upon the efforts of the local and section chairmen, and in this respect, we solicit a continuation of the present efforts on the part of those chapter chairmen who are actively organizing in their area of operations, and we earnestly solicit the interest of those chapter or section chairmen who are less active in this direction to pitch in with renewed effort to organize those stations in their surrounding area which are presently either unorganized or dissatisfied with their present affiliation.

We desire to state to the membership that in our administration of the office of Executive Secretary, we shall re-dedicate our pledge of striving continuously to better serve the interest and welfare of not only our own membership, but also the common good of all radio engineers and technicians.

Cordially,

GEORGE MAHER,
Executive Secretary.

From the President's Conference On Industrial Safety

"Speaking from the industrial standpoint," he said, "safety is a responsibility of management. The fact that physical conditions in the factory are the responsibility of management is obvious. In management is vested all authority for the determination of policy and executive direction. It is management's responsibility to labor to prevent accidents. From management must come the drive for safety. Management must want to eliminate injuries badly enough to make accident prevention a vital part of all activities. In order for management to have a successful accident record, labor must cooperate. The safety and well-being of the industrial worker must be an area of agreement. There must be understanding and acceptance of the need for prevention of accidents by all concerned."

SUPPORT NABET
"OF — BY — FOR
RADIO-TV MEN"

NABET Affiliation Committee Report

J. R. McDONNEL,
President, NABET

To the Members and Friends of NABET:

The final report of the NABET Affiliation Committee printed below, is for your information and permanent record.

Under separate cover, each NABET member has received through his Chairman and Councilman, a complete comprehensive report and ballot, together with mailing envelopes for returning the affiliation ballot.

The Committee has performed a valuable service not only to NABET but to all radio and television men and it is a pleasure to commend them publicly for their efforts.

JOHN R. McDONNELL,
President NABET,
February 15, 1950.

Final Report of NABET Affiliation Committee

FEBRUARY 7, 1950.

The NABET Affiliation Committee, consisting of James H. Brown, Chairman, Willard Dean, Ed Lynch, George Maher, Jr. and Ed Stolzenberger, was set up by the National Council at their meeting in New York in October to obtain as much information as possible on prospective affiliation possibilities in order to present to the membership a well-rounded picture, free from the invective abuse and recriminations that has sometimes characterized the relationships of unions in the radio and television technical field.

The Committee feels that this objective was accomplished and the entire affiliation problem has been reviewed with other unions on the basis of free, frank and open discussion, without the employment of the technique of the "artful dodge" on the part of any of the unions with whom we discussed affiliation, or on the part of the Committee itself. It will be seen from the correspondence attached hereto and other matter enclosed that there has been no attempt on the part of any of the unions with whom this Affiliation Committee was in contact, nor on the part of the Committee itself, to confuse issues or pull fast ones, nor is it necessary to be skilled in the art of semantics to determine what has been said by any of the parties.

If nothing else was accomplished, or will be accomplished by these meetings of the Affiliation Committee, this much is certain—that for the first time since large scale unionization of the radio engineering field, ten men, representing 95% of the organized radio technical personnel, sat together for two days, discussed common problems, reached agreement without any trace of rancor on every point discussed, and came up with a final plan to which each of the ten made substantial contribution and gave their complete support. That meeting itself would be sufficient justification for the existence of the Affiliation Committee. For the record it should be stated that the membres of the IBEW Radio Advisory Committee present at that meeting were Roy Tindall, Hollywood, Chairman; Tyler Byrne, Boston; Charles Calame, New York; Fred Fabre, New Orleans; and Robert Robbins, Indianapolis.

The meetings of the Affiliation Committee with representatives from the other unions, CWA-CIO and IATSE, were no less productive. The integrity, intelligence and forthrightness of Mr. Bierne, CWA-CIO, and Messrs. Walsh, Shea and Raoul of the IATSE, produced highly enlightening discussions and a much clearer picture of what affiliation with these Internationals might entail.

While the correspondence attached hereto outlines in detail the comments of the various unions with which discussions were held and is self explanatory, it is in order for the Committee to summarize the results of these discussions in order to present a capsule picture:

CWA-CIO

The CWA offer presents to NABET the opportunity to become a Division of the CWA, maintaining an integrated structure similar to the structure we presently have, with loose local ties to various CWA and CIO councils and bodies. The administration of our affairs would be in our hands, subject to CWA over-all supervision, with the head of our organization located, presumably, in Washington or New York and reporting to the CWA President. The financial obligation to the CWA would be 50c per month per member, which would amount to approximately $12,000 per year under our present membership. In return for this we would have the services of such legal and statistical service as is provided generally by the CWA to its Divisions, together

with the use of such organizers and negotiators as may be assigned by the CWA upon our request.

It should be noted here, however, that Mr. Bierne stated that there is considerable sentiment among the CWA officials to the establishment of a "two level" system similar to that of other AFL and CIO Internationals rather than the present Division type organization, and that he personally favored such a change. Should this "two level" system be adopted by the CWA convention, it would result in NABET having individual locals reporting directly to the International, with the consequent liquidation of the NABET Division. Should the adoption of the "two level" system take place in the CWA, the position of NABET locals in respect to their autonomy within the CWA would be almost identical to that of locals within any other International. This is not intended as a criticism of CWA, but is a matter having a bearing on the type of structure CWA may possibly adopt for the very good reason of reduction of costs to the membership.

IBEW

The IBEW proposal in response to the plan worked out by the joint committees of the radiomen of the IBEW and NABET was, as can be seen by letters "I" and "L" in the appendix hereto, a proposal to set up NABET locals as in the standard International type organization, but with the addition of a committee to be known as the "National Broadcast Conference Board" selected by the members of individual vice presidential districts to coordinate broadcast and television activities, make recommendations and, in general, tie together the radiomen nationally. This proposal, reduced to its essentials, meets only in part the recommended plan established by the joint committees of the IBEW and NABET except in certain details as respects the magazine, negotiation rights, etc. The essence of the proposal by the joint committees, which is covered in detail in letters "Ia" and "Ib" of the appendix, envisions a semi-autonomous Radio and Television Division within the IBEW, tied to the IBEW rather loosely at local level, and directly tied to the IBEW at the top level of Chairman of the Broadcast Executive Board. A substantial item in the proposed plan contemplates the selection of representatives by the men themselves, and this was rejected in the IBEW reply, with the provision that such representatives may be recommended to the International Office for final selection by the IO.

IATSE

As you have been informed, the identical plan worked out by the joint IBEW-NABET committees was presented to Messrs. Walsh, Shea and Raoul of the IATSE. During the course of this meeting considerable discussion took place in connection with jurisdiction, with particular regard to what jurisdiction the IATSE wanted. It was during this discussion that the "buzz saw" phrase was developed whereby Mr. Walsh stated that he had no interest presently in the electronic end of television, but did have a very definite interest and claimed jurisdiction over optical and film equipment; and that where there was combined optical or film and electronic equipment in use, that jurisdiction should be cut within a single piece of equipment as if by a buzz saw, separating the film and optical equipment from the electronic equipment at the point where it changed over into an electronic device, with IATSE men on the film or optical equipment and NABET men on the electronic equipment.

As can be seen from Mr. Walsh's reply to our proposal, letter "C" of the appendix, the IATSE almost completely rejected any proposal contemplating the setting up of a separate unit or Division within the IATSE International. This rejection was coupled with an offer to set up NABET chapters on a local basis within the IATSE and operate such locals and have such relationships as do all other locals of the IATSE. This reply and proposal the committee considered completely unacceptable to the membership and, from the attitude of the IBEW radiomen, the committee felt that it would be unacceptable to the IBEW radiomen.

* * *

It is to be regretted that the members of the NABET Affiliation Committee were not able to meet in the drafting of this final report; therefore it was felt that in order for the membership to have the benefit of the views of the entire committee, a resume of the views of the individual members should be presented in this report:

WILLARD DEAN:

Affiliation is necessary and desirable at this time and, based upon the information received, recommends a unanimous vote for affiliation with the CWA-CIO for the reasons that the CWA-CIO has agreed to give NABET an autonomous unit whereby the radiomen will continue to run their own affairs, the nationwide organizational set-up of the CWA, the greater community of interest between the telephone workers and the radio technical personnel, the high order of intelligence and integrity of the CWA leadership, the greater aggressiveness and accomplishments of the CIO as opposed to the AFL, and the fact that the CWA offer corresponds in all substantial details to the plan worked out by the joint IBEW-NABET committees.

ED LYNCH:

Recommends affiliation with the CWA-CIO because of the plan offered by the CWA which corresponds generally to the joint committees' proposal, the possibility of a deal between the IATSE and the IBEW in connection with splitting jurisdiction to the detriment of the radiomen, and the promised CWA organizational activity in our behalf should we affiliate with the CWA.

GEORGE MAHER:

Recommends either no affiliation at all, or CWA-CIO affiliation, in view of the plan offered by the CWA-CIO, the refusal of either the IATSE or the IBEW to make any substantial concessions toward an effective radio and television organization, the past operations of the AFL Internationals in respect to jurisdictional matters, the prime necessity of maintaining some form of national structure on the part of the radio and television technical personnel, and the dire need for organization of the entire field which can most effectively be done through the present CWA structure.

ED STOLZENBERGER:

Recommends no affiliation at this time for the reasons that neither the IBEW nor the IATSE offered in real fact a national organization of radio and television technical per-

sonnel, the further splitting of radio technical personnel should an affiliation with the CWA-CIO take place, the lack of any real functional improvement within the IBEW over its present operations in the radio and television field, the complete rejection of any portion of the proposal by the IATSE, and the real need for one organization of radio technical personnel in order to do an effective job throughout the country, but which cannot be done unless the radio and television technical personnel have some important part to play in the direction and perssonel selection of this organization.

JAMES H. BROWN:

Recommends no affiliation at this time, or affiliation with the IBEW. Reply of the IATSE rejecting almost completely the proposals of the joint committees was very disappointing as it left only two choices for affiliation, the CWA-CIO and the IBEW. While the CWA-CIO offer is that of a semi-autonomous Division within the CWA-CIO. two serious defects are that this would not accomplish a union of all presently organized radio personnel, and would serve further to widen the breach between the IBEW radio personnel and NABET personnel. A further problem pointed up by meetings of the National Association of Broadcast Unions and Guilds is that there are no CIO unions of any consequence in the radio field presently, and all of the unions with whom NABET works and has contact are either AFL or Independent. In all of the Affiliation Committee discussions, the point of first importance was, "What will be of the most benefit to the individual NABET member?" and second, "How can we accomplish a single union for all radiomen?" It is felt that affiliation with the CWA, while it is an organization headed by men of outstanding ability, and an organization that is nation-wide and could therefore assist in nation-wide organization, is not presently an organization that could benefit NABET or NABET members due to its own internal problems, and the further problem of being a lone CIO organization in a predominantly AFL field.

The IBEW reply, while not meeting the proposals of the joint committees in regard to autonomy, does offer the advantage of meeting one of the prime requirements of affiliation, that of bringing together almost all the radio and television technical personnel into one union. It might be possible to perfect a one-union organization subsequeqnt to affiliation with the IBEW and by the combined efforts of leaders of both NABET and IBEW to coordinate and integrate the structure set-up in the IBEW reply. There are some points involved in the two letters from Mr. Tracy that are seriously qualified when read together with the letter to Tindall, "J" of the appendix.

* * *

The above resumes do not cover the detailed analysis by the individual members of the committee but give a rather accurate indication of their individual sentiments. In view of the wide divergence of opinion, as noted above, it will not be possible for the committee to issue a recommendation as a committee, nor even submit a majority and minority report. As will be seen from the attached correspondence in the appendix, the proposals and replies of the various unions with whom the Affiliation Committee dealt are set forth clearly and they should leave no doubt in the minds of individual members as to what affiliation would mean with the various Internationals. The Committee feels that the individual members can rather accurately determine from this appendix their own attitude in the matter of affiliation, and it will therefore be a matter for individual and chapter discussion and resolution.

It might be well to again emphasize that whether or not affiliation is voted, the discussions and negotiations with the various Internationals have been most valuable from the standpoint of NABET, and it should be further emphasized that NABET is past the stage, as I am sure other unions are past the stage in the radio field, of conducting negotiations and dealings by means of personal letters loaded with invective and petty squabbling. Should NABET remain independent, we can probably expect stiff competition from both the IBEW and the IATSE, but competition conducted in a mature manner, and with the advantage that we are the only union in the radio technical field which has as its sole purpose the betterment of radio and television personnel wages and working conditions.

JAMES H. BROWN,
Chairman, Affiliation Committee.

John R. McDonnell To Aid Heart Drive

John R. McDonnell, President of the National Association of Broadcast Engineers & Technicians, will serve as a member of the National Labor Committee of the 1950 Heart Campaign, it was announced today.

The $6,000,000 fund-raising drive will take place during the month of February and will be conducted by the American Heart Association, and its affiliates throughout the country, to support a program of scientific research, public education and community service.

In a letter addressed to President McDonnell inviting his cooperation, Secretary of Labor Maurice J. Tobin, Chairman of the National Labor Committee's 1950 Heart Campaign, wrote:

"Diseases of the heart and blood vessels are our nation's leading cause of death. They kill more than 600,000 Americans annually and are responsible for more deaths than the next five most important causes of death combined."

Responding to Labor Secretary Tobin's invitation to serve with him as a member of the committee, President McDonnell stated:

"It is indeed a pleasure to be associated with such a worthy cause as the 1950 Heart Campaign of the American Heart Association. I shall be glad to serve with you as a member of the National Labor Committee and will assist in every way possible to assure the success of the campaign."

In accepting President McDonnell's whole-hearted cooperation in the fight against heart disease, our nation's greatest killer, Secretary Tobin declared:

"I am confident that with your personal support and the cooperation of the National Association of Broadcast Engineers & Technicians, organized labor will make an outstanding contribution towards the task of combatting heart disease, since among its major victims are the working men and women of America."

To facilitate labor's support in this drive, Secretary Tobin has designated Assistant Secretaries of Labor Ralph Wright and John W. Gibson as his aides.

George O. Milne

George O. Milne, 47, Director of Technical Operations for the American Broadcasting Company, and one of radio's pioneers, died Saturday, January 28th, in Mt. Sinai Hospital, Miami Beach, Florida, of a heart attack. Accompanied by his wife, he had gone to Florida on January 15th under doctor's instructions.

Milne was born in Mamaroneck, New York, on September 21, 1902 and was educated in Paterson, New Jersey grammar and high schools. He was a real pioneer in radio, having as a youngster, built and operated his own crystal set. This hobby later developed to the point where it became his career.

Milne entered the radio broadcasting field in 1923 as a maintenance engineer for Station WEAF. During the following four years he progressed from maintenance man to studio engineer, telegraph operator, field engineer and transmitter man. In 1927, Milne was appointed Master Control Supervisor and a year later was advanced to New York Operations Supervisor. In 1930, he was named Eastern Division Engineer for NBC, the position he held until he joined the American Broadcasting Company (then the Blue Network Company) in February, 1942, as Chief Engineer. In 1947, Milne was named Director of Technical Operations for ABC.

During his many years in radio, Milne played an important part in setting up the technical facilities and operating techniques for network broadcasting. His practical, fair-minded approach to engineering problems were of immeasurable assistance to those who worked with him.

Milne had great enthusiasm for radio work and was always to be found on the scene whenever emergencies or special events arose. Some of the special event pickups are now history—the Hindenburg crash at Lakehurst, New Jersey, Olympic Games at Lake Placid, the Morro Castle disaster, numerous convention and election coverages, Poughkeepsie Regattas, broadcasts from airplanes, submarines and many other events. Milne was assigned to the maiden voyage of the S. S. "Saturnia" and he handled the broadcast from that ship when it was 1200 miles at sea. He also made a trip on the Zeppelin Hindenburg on its first voyage from Washington, D. C., to New York.

Milne lived to see radio and television become important mediums of communication and entertainment. One of his first projects as Chief Engineer of ABC was to select a suitable site and supervise the removal and reconstruction of the WJZ Transmitter, then located at Bound Brook, New Jersey. The towers were dismantled and the equipment moved from Bound Brook and the new, improved Station WJZ went on the air from Lodi, New Jersey, on January 2, 1944.

In 1946, ABC began plans for television installations in New York, Chciago, Detroit, San Francisco and Hollywood and it was Milne who set up the format for Television Engineering Operations and personnel requirements for this new medium. There then followed the necessary construction of the television installations around the country. WJZ-TV went on the air August 10, 1948 and until ABC's Television Center at 7 West 66th Street, New York City, was opened on October 16, 1948, WJZ-TV's programs originated from a small studio rented from Peter Junco, a commercial photographer on East 69th Street. On September 17, 1948, WENR-TV, Chicago was placed in operation, followed on October 9, 1948 by the opening of WXYZ-TV in Detroit. On May 5, 1949, KGO-TV, San Francisco, inaugurated its television operation. KECA-TV, Hollywood went on the air September 16, 1949, completing the ABC plan for television installations in five cities. Milne then became responsible for handling the complex details of the technical operations of both AM and TV in New York, Chicago, Detroit, San Francisco and Hollywood.

In June and July, 1948, ABC was one of the networks which televised the Republican and Democratic Conventions held in Philadelphia. This was the first time that political conventions had been covered by television cameras. Milne supervised the installation and operation of ABC's AM and TV setup at these conventions and he was on the scene during the entire proceedings.

Another first for Milne was the televising of the opening night of the Metropolitan Opera in New York City in November, 1948. This event had never before been televised and it involved numerous details and many hours of work.

Although his office responsibilities were time-consuming, Milne usually found time to take part in other company activities. While in NBC, he was President of the Athletic Association, President of the Bowling League, and he also founded and was the first President of NBC's Stamp Club. This interest in company activities carried over to his employ in ABC, where in 1942 he was elected the first President of the ABC Athletic Association, as well as the first President of the Bowling League, in which he was also an active bowler.

Active for many years in social, fraternal and political organizations of Wood-Ridge, New Jersey, where he served a three-year term as Town Councilman, Milne was a Senior Member of the Institute of Radio Engineers, a member of the recently-formed "Radio Pioneers Club" and a member of the Audio Engineering Society. He was also an amateur radio operator for many years, holding call letters W2ZA which he operated from his home in Wood-Ridge and W2KK, at Lake Hopatcong, New Jersey.

Milne is survived by his wife, Mildred, and two sons, George F., a student at Rutgers University, and Douglas.

Masonic Services were held Wednesday evening, February 1st at the Robert Moore Funeral Home, Paterson, New Jersey and burial was Thursday, February 2nd at Laurel Grove Memorial Park, Totowa Borough, New Jersey.

Complete TV Color Stability Achieved

New Development Eliminates Color Drift and Puts RCA System Ahead of All Other Methods in Its Technical Advance As a Potential Service to the Public, Dr. Engstrom Reports

Complete color stability has been achieved in the RCA all-electronic, high-definition system of color television, and its technical development as a potential service to the public now surpasses all other types of color television, Dr. E. W. Engstrom, Vice President in Charge of Research, RCA Laboratories, disclosed here today.

"The basic problem in color television," Dr. Engstrom said, "has been to develop a system that is unlimited, technically or otherwise, in its possibilities for future growth and expansion; also, one that is fully compatible with the present method of black-and-white television. This, RCA has done."

Speaking at a special demonstration for the press, held in the Washington studios of the National Broadcasting Company, Dr. Engstrom listed the following characteristics of the RCA color system, which, he said, no other method now under development can fully match:

1. High-definition pictures (70 per cent greater detail than the mechanical sequential system).
2. Unlimited picture size and brightness.
3. Flickerless pictures, without color break-up.
4. Automatic color phasing (electronic means of maintaining color stability).
5. Complete compatibility with present black-and-white television system (color telecasts are reproduced in black-and-white on receivers now in use without modification).
6. All-electronic (no mechanical or moving parts) .

"These characteristics are of major importance to the public," Dr. Engstrom pointed out, "for they mean that color television can be introduced with no disruption to the present service of black-and-white television. Owners of black-and-white receivers will not have to change their sets to receive color transmissions in monochrome and there will be no loss of audience when color is introduced as a service to the public."

The rival mechanical sequential system of color television, as demonstrated so far, Dr. Engstrom pointed out, has practical limitations of small picture size and loss of definition. Furthermore, he added, it is not compatible with all-electronic black-and-white television; that is, its transmissions cannot be reproduced on sets now in use unless they are modified.

"One of the most important aspects of the RCA color television system," Dr. Engstrom emphasized, "is its all-electronic character, which is in the established trend of television technology. Because of this, the RCA system embodies now, and can continue to take advantage of, the latest scientific developments and techniques in radio communications, electronics, and radar.

"Particularly significant in this regard is the fact that the multi-color single-kinescope receiver, which is being developed in RCA Laboratories, will be a natural element of the all-electronic system. The new kinescope, or picture tube, which will reproduce television pictures in full color without the aid of filters or other mechanical parts, is in the first stages of experimental development. The soundness of its concept has been proved, however, and RCA soon will demonstrate one of the early models."

This demonstration was arranged to reveal the progress made in recent weeks by RCA scientists and engineers working on the all-electronic color television system. The program was produced in the Wardman Park Hotel color television studios of NBC and telecast by WNBW, Channel 4, throughout the Washington area. The pictures were seen on experimental laboratory model receivers of the direct-view type. Two screen sizes—10-inch and 16-inch—were shown.

To illustrate the compatibility of the system, the color pictures were also received simultaneously on standard commercial black-and-white television receivers. The black-and-white pictures were sharp and clear and had the same entertainment value as those broadcast in conventional black-and-white transmissions.

Aside from its entertainment value, the program was planned to provide a full-scale test of the RCA system. Colors of every hue were transmitted and reproduced with the greatest clarity, detail, and brightness achieved thus far in polychrome television. There was no flicker, or color break-up, at any time.

Color fidelity was at a high level, the demonstration showed, and the instability that affected earlier demonstrations was entirely eliminated. RCA engineers achieved this high color fidelity by adding to the system brief synchronizing radio pulses, which, when reaching the television receiver, automatically lock the three primary colors of the system into perfect phase.

"Solution of the color stability problem was the last major technical hurdle to be overcome in the development of the RCAsystem," Dr. Engstrom pointed out. "No fundamental problem remains to be solved. Our engineers can now concentrate on refining and simplifying the system."

Automatic synchronization and color phasing, Dr. Engstrom said, is an outstanding technical achievement. In accomplishing it, engineers worked out a method of following the horizontal synchronizing signal with a 10 to 15-cycle burst of another signal at sampling frequency. This burst controls an oscillator in the receiver, which in turn sees that the correct color signals go to each of the three picture tubes.

The experimental color receivers used in today's demonstration, Dr. Engstrom said, were not representative in appearance or performance of the sets that will be available when commercial designs are created. Normal techniques of advanced engineering, he went on, will reduce the size of the receivers and refine the quality of picture reproduction.

The broadcasts of the RCA color system have been under way on a regular program schedule of one hour a day five days a week since January 9. As improvements have been made from time to time, they have been incorporated in the system.

The test broadcasts have been reproduced on color receivers in a laboratory set up by RCA at Silver Spring, Md. Transmissions have been made at different times on both very high frequencies, similar to those used for black-and-white television, and on ultra-high frequencies.

While the tests have been going on, many owners of black-and-white television receivers have tuned-in the color transmissions with excellent results in monochrome reproduction. This, Dr. Engstrom pointed out, is conclusive proof of the RCA color system's compatibility with black-and-white television. There are more than 100,000 television sets in Washington homes at present and, of this total, approximately 10,000 were sold during January.

Review of Current Technical Literature

By Lawrence W. Lockwood

Audio Engineering—Dec. 1949

The Cathode Follower As Audio Power Amplifier—H. Sterling.

As an output stage, the cathode follower is shown to be a feedback amplifier of special characteristics which can be duplicated in conventional amplifier designs.

Below 50 Cycles—S. White.

Some results of working towards more realistic reproduction of low frequencies.

FM/TV—Dec. 1949

A Straight FM Tuner With AFC—I. Greene

A design intended for use with a high quality amplifier and speaker to afford the full enjoyment of FM broadcasting.

Design of Recording Systems—L. Wortman

A description of the Reeves sound studios installation.

Proceedings of the IRE—Dec. 1949

Response of Circuits To Steady State Pulses—D. Waidelich.

A method of calculating the steady state response of circuits to repeated pulses is given using the method of the steady state operational calculus.

Diode Phase Discriminators—R. Dishington

Two sinusoidal phase discriminators are analyzed and it is determined that the resistances in series with the tubes and also the tube resistances themselves are the most important factors in determining optimum performance.

Design Procedures for PI-Network Antenna Couplers—L. Storch

A very significant result of investigations is the complete analogy which is established between the analysis and design of the pi network and the equivalent manipulation of a group of simple geometrical figures.

The Application of IF Noise Sources to the Measurements of Over All Noise Figure and Conversion Loss In Microwave Receivers—L. Moxon.

A method is described of extending the "noise diode" technique for the absolute measurement of receiver noise figure into frequencies above 300 mc.

The Effect of Antenna Size and Height Above Ground On Pointing For Maximum Signal—A. LaGrone, A. Straiton.

Results of measurements of the variation of signal strength and phase of 3.2 centimeter radio waves with heights up to 200 feet for a 27 mile desert path in Arizona.

(Continued next page)

An Experimental Large Screen Television Projector—P. Mandel.

A television projector using a high voltage cathode ray tube is discussed. The modulation circuits, the projector system, and the directive projecting screen are described in detail.

QST—Jan. 1950

Audio Phsae Shift Networks—G. Nibbe.

Discussion of basic theory and operation.

RCA Review—Dec. 1949

Artificial Lines For Video Distribution and Delay—A. Turner.

Artificial lines composed of "T" sections, bridged "T" sections, and especially combinations of these are capable of quite faithful distribution and delay of video signals.

Duo Cone Loud Speaker—H. Olson, J. Preston, D. Cunningham.

A simplified version of the duo cone loud speaker has been developed consisting of two coaxial, congruent and separately driven cones.

A Six Megacycle Compatible High Definition Color Television System

This report comprises RCA's testimony at the FCC hearing Sept. 1949.

A New Image Orthicon—R. Janes, R. Johnson, R. Handel.

The design of a new panchromatic high sensitivity photosurface has resulted in the development of a new image orthicon, RCA 5820, which permits the televising of low level illuminated scenes with a faithful gray scale rendition.

Tele Tech—Dec. 1949

Highlights of FCC Color TV Demonstrations—F. Loomis.

None of transmission systems presented are considered adequate.

Unique Engineering Design Featured in WOR-TV Studios—J. Battison.

Complete separation of camera and studio controls sets new style.

Measuring Phase Angles In Communication Circuits—E. Brewer.

Variety of direct indicating meters find extensive application in development of amplifiers using large amounts of feedback, filters and control circuits.

Tele Tech—Jan. 1950

Disc Recording System Developments

Solutions of many problems to bring about a fidelity range of over 20 kc described.

Mixing Local and Remote Television Signals—W. Wells, J. Weaver.

Simple adaption of popular receiver synchronizing circuit solves problem of fading composite video signals from courses controlled by different sync generators.

New One Tube Limiter Discriminator For FM—A. Hasse.

6BN6 gated beam tubes aside from combined functions in FM receiver have many other applications.

Practical Filters For Minimized TV Interference.

Two section high pass M-derived filters prove highly effective as low cost attachments for existing television receivers.

NABET CONSTITUTIONAL AMENDMENTS VOTED

The NABET National Secretary telephoned the information that the NABET membership had overwhelmingly voted the adoption of the recently submitted proposed amendments to the NABET Constitution.

The amendments will benefit the NABET membership as follows:

1. National Councilmen's term of office increased from one to two years;
2. That these elections shall be held between May 1 and June 15 in accordance with the by-laws of each Chapter;
3. The 2-year term of office amendment provides, however, that one-half the National Councilmen be elected in the even-years, the remainder of the National Councilmen to be elected in the odd-numbered years. This provides the very important element of continuing experience on the National Council, and we now have a guaranteed minimum conitnuing experience of 50% of the National Councilmen. This shall become effective for half the National Councilmen in the 1950 elections, and for the remainder in the 1951 elections; i.e., *all* Chapters will hold elections in 1950, half of them for 1-year terms, the other half for 2-year terms.
4. In the past, National Councilmen took office immediately the election was completed, and as a result, under this former practice, there had been a slow annual turnover in the National Council extending over a period of months. The new amendment still provides for elections between May 1 and June 15th, but all newly elected officers take office simultaneously on July 1st following the elections.
5. *General Membership Meetings.* In the past, the question of quorums, and small minority groups "taking over" a general meeting had been recognized as not in the best overall interests of the membership. NABET, like other Unions, experienced a typical turnout far below 100% membership attendance.

   The Constitution continues to provide for General Membership meetings; that remains unchanged. However, the regular Chapter Council meetings are now officially open to the general membership—not as observers, but as active participants, each with the right to make and second motions, and to vote his individual vote—thereby subtracting his single vote from the total vote of his particular Councilman at that particular Council meeting. The overall membership is thereby protected against the dangers of "clique" minority control of a general meeting, and/or the inconvenience to those attending, should a quorum not attend, or should a quorum not be maintained for the duration of the usual general meeting. The practical result is that a Council meeting will in effect be a general meeting, with each councilman being legal proxy for each of his members not attending.
6. That any vacancy, for whatever reason, that may exist on the National Executive Board, shall be filled by interim appointment by the President.

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

ST. LAWRENCE

By ALEEN A. CORBIN

After that passionately vehement card of exhortation from Mr. E. Stolzenberger (I never dreamed he cared), I feel I cannot allow this month's journal to slip by without something under the St. Lawrence banner, even if it be only "Hello" and "Goodbye." As a matter of fact, I don't dare.

And it just so happens, just by purest chance, I can assure you, that I do have a little more to say than that. I can tell you about R.R.N. Some of you might not have heard of it (how dare you!), but those of you who have will be happy for us (oh joy!) that we are ever growing and extending ourselves (the commercial manager can stop twisting my arm now).

Rural Radio Network is a series of about fourteen or fifteen stations in this state, with a couple of them being in Pennsylvania, who have a network of their own. As the name implies it carries much that is interesting to the farm populus of those states. It also carries entertainment that is different and appealing to all (yup, even the city slickers). This is carried by us only on F.M.

The network is owned by several farm cooperatives, the largest stockholder being the G. L. F. The general manager of this enterprise is Mike Hanna of WHCU, Ithaca. Each station picks it up from the other and relays ti.

As a result of wages and hours being affected by these new operating conditions in our F. M. station, Dave Lane, Bill Walck, and George Gebhard were able to negotiate with Earl Kelly, station manager, James Higgins, assistant station manager, Louis Saiff, Jr., commercial manager, and Maynard B. Davis, chief engineer, (we don't believe in partiality—everybody is kept happy with a title) acting for management, a twenty-four hour work schedule for the FM transmitter similar to the one operating for A.M. This arrangement was approved by Mr. H. E. Hiller of NABET's national office, and now everyone is at least happy, if not jubilant.

In the way of more personal news, we were very happy to welcome to our engineering staff Ward H. Davey, a new control engineer. Ward is a friend of Dave Lane's and lives near him in Black River (I use the term "lives" loosely, you understand). We all knew Ward before he started working with us, and it was more like being joined by an old friend than welcoming a new member.

The March of Dimes is just ending and Dave Lane is collecting an extra sum in the name of labor. Our station put on its third annual show called "At Your Command," a show which plays music (and we had live local entertainment) in exchange for pledges to the March of Dimes. This year we collected around two thousand which we thought was very good for a town this size.

The Hotel Woodruff in town held a big dance and had several attractive girls chosen as Dime Debs to dance with patrons in exchange for their pledges to the campaign. We were very flattered that our Betty Gillespie was one of the girls chosen, and her sore feet the next day proves that the men in this town really have very fine taste.

BOOK REVIEWS

TV Picture Projection and Enlargement

By Allan Lytel, published by John F. Rider Publisher, Inc., New York. 179 pages, 5¾x8¾ inches, approx. Price: $3.30.

The author is an instructor at Temple University, Technical Institute. The main Chapter headings are titled:

1. Properties of Light, Reflection and Mirrors—32 pages.
2. Refraction and Lenses—29 pages.
3. The Television Picture—28 pages.
4. Commercial Applications of the Modified Schmidt Projection System—53 pages.
5. Commercial Receivers Using Refractive Projection—13 pages.
6. Television and Motion Pictures—18 pages.

The text includes a useful bibliography and index. In the usual Rider style, the emphasis is on application of the subject matter of the text, combined with the theory. The text is intended for the radio serviceman, and will prove an excellent addition to the bookshelf of every broadcast technician—whether he be engaged in recording, AM, FM, FAX, or TV.

The subject matter is well covered, and includes the angular transmission characteristics of front and rear projection screens, the Scophony system of projection, and many other equally relevant topics.

* * *

The Business Helper

By Leslie C. Rucker, published in 1949 by John F. Rider, Publisher, Inc., New York. 133 pages, approx. 5¼x7½ inches, hard cover, price $2.00.

Whether or not you are considering a "fling" at private business, you can well afford this text, which will add to your general education—where it might most affect your bankbook!

Chapter titles are: Choosing a Goal, The Businessman, Storekeeping, Types of Business, Locations, Customers, Buying, Selling, Estimating, Contracts, Overhead expenses, Banking, Bookkeeping, Collecting, Advertising, Employees, Insurance, New Business, Partnerships, Telephones and Their Use, Associations and Clubs, A Primer on Credit.

* * *

Radio Operator's License Q. and A. Manual

Authored by Mitlon Kaufman, 608 pages approx. 5½x8½ inches, published by John F. Rider Publisher Inc., New York. Price: $6.00.

The author is an instructor at the RCA Institutes. The Tables of Contents includes:

Element 1—Basic Radio Laws, Rules, and Regulations.
Element 2—Basic Theory and Practice.
Element 3—Radiotelephone.
Element 4—Advanced Radiotelephone.
Element 5—Radiotelegraph.
Element 6—Advanced Radiotelegraphy.
Amateur Radio Questions and Answers.
Rules Governing Amateur Radio Service.
Classes B and C Amateur Radio License Examination Questions and Answers.
Class A Radio License Examination Questions and Answers.

Systematically listed are the questions and answers to past FCC exams, plus a follow-through discussion to the answer, providing the necessary background to a fuller understanding of the whole subject matter. In addition to a complete coverage of the 6 Elements, there are included five separate appendices covering Direction Finding Equipment, Auto Alarm Equipment, the Q Code, International Morse Code, miscellaneous abbreviations, excerpts of Part 2 (General rules and regulations) of the FCC regulations.

How to get your FCC license: get a copy of this typically practical Rider text.

WASHINGTON

By W. D. DEEM

It's time to do some serious thinking on just where and how to spend that summer vacation. Washington was blessed with a mild winter and now with faint traces of spring in the air, all time out taken from watching view finders, VU meters, video levels and watching for fading and switching cues, is spent in day dreaming and planning for the time when radio and TV can be a means of relaxing instead of an occupation—which reminds me that it is almost negotiation time again for NABET and NBC and ABC.

WNBW field and studio has two new councilmen. Due to the growth of the group and due to the loss of our former councilman, two new councilmen were needed. Dodd Boyd was elected to head group A and Wally Bush will take charge of the complaints and problems of his men in Group B.

The crew elected two good leaders in Dodd and Wally.

In January Mr. Walter Gibson of RAC Lab., Bill Wells, Art Redfield, and myself attended a very interesting lecture by Dr. Peter C. Goldmark of CBS on Color TV. The lecture was to a joint gathering of AIEE and IRE members. The Dept. of Commerce Auditorium was packed and we arrived too late to get a seat on the main floor so we took chairs from the reception hall, carried them down to the front and enjoyed the lecture from there. Dr. Goldmark gave a good account of the good and bad features of the three leading systems, but what struck me most was the public response. The auditorium was filled to overflowing with interested listeners.

Some NABET members in Master Control WNBW felt awfully silly one Sat. in January when they showed only three reels of a four reel Scattergood Baines film. The third reel was missing due to a mix-up in delivery of the film and so the fourth reel was run in its place. Very few people, if any, knew the difference though, thanks to the nature of the film story.

Glad to see Mac McGinley back after three months' sick leave.

One of the new men at WNBW is John G. Martenson. John started his electronics career working for Victor Talking Machine Co. before it became a part of RCA.

From there he went to Paramount and worked for nine years as a Sound Engineer. Then came a couple of years freelancing around New York which led to a position with Muzak. John then decided to come to D. C. and started to work for Movietone here. During the war he did Public Address work in a war plant. Then back to New York to do some camera and audio work for Universal Pictures.

John (who is known as Jim to his fellow workers at NBC) attended Dickinson College for two years at Carlisle, Pa. He majored in science. Now he is a Group 2 engineer with NABET at WNBW and is operating a new type camera; no film to load nor sound track to ride level on in this "electric" type.

Sam Newman has been promoted to Station Engineer at WNBW with Gentry Stevens as his assistant, and the new man over there is James Martyn, Group 2 engineer!

FCC has approved the transfer of the old WWDC to Peoples Broadcasting Co. owned by Lincoln Murray. They will now operate on 1260 KC, 5 KW instead of the old 1450 KC. The new WWDC (the former station WOL) will operate on 1450 KC. All the details of the transfer aren't cleared up. There is a contractual agreement of 20 days to get it cleared up, but the FCC gives them 30 days or until March 1st to get all the details ironed out. Harold Feed, chief engineer at the former station WOL, has been engaged by Peoples Broadcasting Co.

Dale Applegate, a comparatively new engineer at WRC did a great job with a wire recorder the last of January when he went down the Bay and boarded the U.S.S. Missouri, which had been stuck in a mud bank for some time, and recorded the first "on-board" account of the happening.

Walter Balderson, also of WRC is the proud owner of a shiny new Mercury—it is understood that beauty attracts beauty so Walter isn't doing so bad with the gals.

We hear that Speed Clark and Ralph Hammel are culinary experts—a good sample is Ralph's crab cakes.

John Hogan has his car in the garage for slight repairs. His story goes that he saw the other fellow two blocks away standing still and yet there was an accident—something mighty unusual about that, it seems.

K. B. Williams enjoyed a semi-vacation in January. He was called for jury duty just at the time his new home was finished and he moved into it. He has "white collar" hours while on jury duty and is enjoying his new home a lot.

Frank Fugazzi of WRC is spending a lot of his spare time talking to his friends in Cuba on his ham rig and is dreaming of a wonderful vacation there this summer.

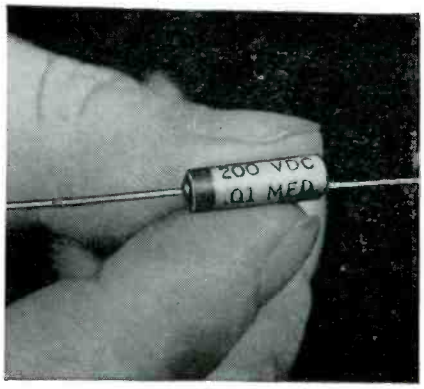
That's all from Washington NABET.

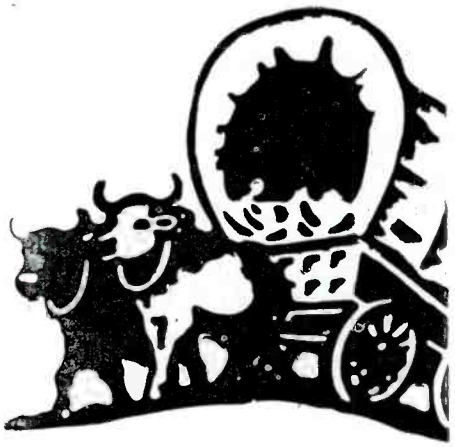
WARREN D. DEEM.

Smaller Plastic-Sealed Paper-Case Tubulars

Smaller paper tubular capacitors, known as Type P85, featuring the same materials and general processes used for the Aerovox Aerocon Type P87 are presented to the radio and electronic industries by Aerovox Corporation, New Bedford, Mass. To achieve the miniature size new production techniques were required for handling minute sections, wires and other components without sacrifice of quality and mass production requirements.

The paper section of the Type P85 unit is Aerolene-impregnated and the capacitor is sealed with Duranite. The resulting rock-hard paper cased tubular offers the heat and humidity resistant qualities associated with the best plastic tubulars yet at a considerable saving in cost. Type P85 capacitors can be used at 212°F without drips. They have extremely high initial resistance and recover same upon heating. Dielectric strength is maintained at elevated temperatures.





OMAHA NEWS

By GEORGE S. JELINEK

The New Year started out in first class shape with the signing of the KMA-KMTV Nabet Contract on Jan. 24th. KMA in Shenandoah, Iowa and KMTV here in Omaha are now Nabet with a fine contract which represents a 15 per cent increase in salaries. Chairman Roy Glanton together with Dick Hill, Wally Schwentser, Ralph Lund and Lloyd Latta negotiated the contract, the details of which were worked out smoothly and to the credit of all concerned.

KMA members are Ralph Lund, Walt Ely, Norm Kling, Wayne Bowman, Roger Peters, Jack Josephson, Don Burricheter and Lloyd Latta with KMTV adding Raymond Swenson, Leo Lechner, Richard Hill, Donald Grenseman, Norbert Greene, Robert Popke and Wallace Schwentser. The Omaha Chapter now totals 39 members, stations involved are WOW, WOW-TV, KODY in North Platte, KMA and KMTV, the last two stations owned by the May Broadcasting Company.

WOW-TV, Channel 6, went on the air last August 29th, with KMTV commencing operations Sept. 1st. Both stations are RCA equipped. The TV audience in this area is rapidly increasing with 13,000 receivers in homes as of Jan. 23.

Two recent promotions at WOW-TV are Bill Dunbar to Studio Supervisor and Larry Sibilia to Transmitter Supervisor.

Congratulations are in order to Bob Rudd who passed out, cigars, that is, heralding the arrival of a baby daughter. Several others are in various stages of expectation or anticipation, according to scuttlebutt.

A lot of spare time is being enjoyably occupied with hamming. Roy Glanton, on 10 and 20, has been working some choice DX, among others Moscow and Massawa, Eritrea. Bill Dunbar on 10, portable mobile, recently worked a W6 solid while driving between Omaha and Lincoln. Roy Ekberg is building a high powered rig and has nearly completed a FB shack. Roy's work has been described as "beautiful." Louie DeBoer has been active on 80. Larry Sibilia recently took a ham exam, courtesy of the FCC. The writer has been on 20 CW occasionally. Mark McGowan is contemplating building a supermodulation rig. Bob Rudd recently worked two Nabet members in Chicago and Roy Glanton had a long chat with Don Morey, Mohawk Chapter Chairman.

A "Nabet Network" might prove to be a very interesting and enjoyable way of affording closer contact between the various chapters throughout the U. S. and possibly an open schedule can be worked out and published in the Journal. It would not have to be at all complicated, perhaps an afternoon and evening each week, one frequency each on 10 and 20. The word "Nabet" could be added during a call to identify members.

Omaha Chapter members had a breakfast on Feb. 8 at the Fontenelle in connection with the regular monthly meeting. Present was George Maher, Executive Secretary, stopping over in Omaha enroute to Denver. This meeting was an eyeo-pener compared to past meetings which have been held at to P.M.

MEET THE NEW OMAHA EDITOR

Born, Bruno, Nebr., Jan. 19, 1915, finished High School at David City, Nebr., 1932 freshman year at Uni. of Nebr. 1934 graduated from RCA Institutes at N. Y. 1937, worked in N. Y. C. in Radio Sales and Service and Master Antenna installation for about a year. Became Merchant Marine Radio Op. in 1938 up through 1945, except for six month break as Code Instructor for the Navy and Night Course Instructor for RCAI. Lt. (jg) U.S.M.S. in 1942, Chief Operator on tankers throughout the war. Last trip to sea was 81,000 mile trip around the world on a T3.

Re-entered Uni. of Nebr. in Jan., 1946 and graduated in June, 1949 with B.Sc., E.E. Entered broadcasting field with station WOW to present.

ROY GLANTON,
Chairman, Omaha NABET.

BOOK REVIEWS

The Radio Amateur's Handbook

Authored by the Headquarters Staff of the A. R. R. L., and published by the American Radio Relay League, Inc., Hartford, Conn. 610 pages, approx. 6½x9½ inches, plus 110 pages of useful manufacturer's data and supplies, comprehensively indexed, paper cover, price: $2.00.

The 27th Edition—1950 is, as usual, a credit to the organized radio hams. Its twenty-five chapters cover the entire field from basic fundamentals to the latest techniques in single-sideband telephony. The commercial lab technicians will want to have this reference work handy, because of the many practical hints, and constructional data, from stable oscillators to TVI elimination.

It is unnecessary to eulogize an ARRL Handbook. This is the latest edition, and you ought to have it.

* * *

Electronic Engineering Master Index—1947-1948

Authored and published by Electronics Research Publishing Company, Inc., New York, 1950. 340 pages, approx. 6¾x9¾ inches, cloth binding, price: $19.50.

A subject index to the contents of electronic and allied engineering publications printed throughout the world from January 1947 through December 1948.

The 1947-1948 edition of the Electronic Engineering Master Index is the third volume in the series covering the electronic and allied engineering literature published throughout the world since 1925. The titles of all articles appearing in foreign-language magazines have been translated into English.

Containing more than 18,000 new entries, this volume indexes almost three times the number of publications listed in previous volumes. Among these publications are more than 230 of the major international scientific magazines, journals, and proceedings, resulting in the most comprehensive bibliography of the electronic and allied engineering arts published today.

Two entirely new sources for reference have been included in the present volume, the 5,500 electronic and allied patents issued by the U. S. Patent Office during 1947-1948, and the declassified documents published by the U. S., British, and Canadian governments.

This index is a natural requirement of every technical library, laboratory, and research group.

MOHAWK

By JOHN F. McMAHON

We'll start off this column with a few words of praise for the management of WSNY, the MIGHTY PEANUT WHISTLE, which blew to the tune of several hundred dollars for the March of Dimes campaign. The station donated just about all of its day, to the raising of funds for a very worthy cause. Many of the local bigwigs, as well as the Mayors of Schenectady and Scotia, went on the air to help the fund along. We know that there are a lot of little children who will have occasion to say "Thank you WSNY."

Paul Norton, a newcomer at WSNY, is launching a new show for the local record fans, "Norton's Waxworks." I'll listen, too, Paul if you put it on Twenty Meters.

Before I forget it I guess maybe it would be nice to tell any interested W6s and W7s that Gus Coopersmith's antenna is down and they'll have to forego the pleasure of the QSO with him for a while.

Carl Youngs has built up a television receiver from a kit of parts and surprisingly enough it works F. B. Never did trust the kits but am beginning to change my mind.

Willis Ketterson and Tony Palumbo, a couple of new ops at WSNY, are breaking in at the Mike between regular tricks at the studio console. I hear that they are doing very well and that Betty Kelly, the only female member of the WSNY staff, is doing much to help them and others, with the announcing chores.

Carl Youngs and Red Wilson of WRGB Xmtr staff should be in their new homes by the time this article appears in the BEJ. We know they are both pleased as punch with the new locations.

Bob Gutshall at WRGB studio is the proud papa of a New Year baby. May it be the first of a long line of offsprings Bob.

The boys at WGY studio are very happy with their new tape recorder, especially Herb Kohl, who nearly burned a finger loose while demagnetizing the recording head with a home fashioned demagnetizing coil. Anything for art, eh Herb?

Nick Nickels and George Hoffer are giving up some of their hamming time to tele. after the purchase of new tele. receivers both have the same type and they are nice jobs fellows.

I'd still like to see Don Morey's ham station in a future issue of the B. E. J.; what say Don? It sounds real sharp on ten.

Haven't seen Marce Reeds in the BPL lately, the boy must be working too hard at WRGB studio.

WSNY nearly lost a relief engineer when Arthur Guy came close to forgetting that his ticket was due for renewal. Art's work at the Knolls keeps him busy full time.

Jack Winters is thinking of a castle for Gertrude. Make sure there is plenty of room for a ham shack, Jack; you'll need it when you get your ticket.

Ed Robinson, also of WSNY, has another car and from all appearances, is very pleased with it.

I'd like to say thanks to Dave Dangler out at WSNY Xmtr for the info on his station and its personnel. By the way, Dave is seriously thinking of a two hundred watt rig on ten. Might not hear him for a bit but when you do, it'll be a solid sig.

Please fellows if anything interesting happens at your station, let me know about it and I'll get it into the BEJ. Even if it isn't interesting give me a buzz anyway. Gotta get some stuff into the mag. or Stolzy will be pulling his hair out, or what is worse, mine.

Roy Meyers is on a short leave from WGY and we all hope you'll be back soon, kid.

Here's an idea for Stolzy. Why not have a NABET QSO contest and give tickets to the hams who work more than a certain number of their brothers in NABET?

Newt Barnes is the new VP of the Albany Ham Club and Bob Vadney is the new club treasurer; oughta have the money to finish that single sideband rig now hey Bob?

The old timers will be glad to hear that Hort Mosher W2DE is back on eighty CW by now. Hort is using a Receiver which was designed and built by his son, who is still in Junior High School.

Anyone interested in building a theremin can probably get some good info from Jim Billings at WRGB. He recently completed construction of one for a friend.

I have about run out of both time and words, so I'll say 73.

BCNU—Mac.

New 3" Oscillograph of Increased Portability

Du Mont Type 292 Cathode-ray Oscillograph which supersedes the time-honored Type 164-E, is announced by the Instrument Division of Allen B. Du Mont Laboratories, Inc., Clifton, N. J. This new 3" instrument marks a new high in portability, combined with features heretofore found only in 5" models.

The increased portability is largely due to the new Du Mont Type 3RP-A 3" Cathode-ray Tube with its extremely short overall length of 9⅛". The instrument weighs only 21 lbs., and measures 10⅞" h., 8⅛" w., 11" d.

The sensitivity of the deflection amplifiers has been increased, so that input

signals of 0.4 rms volt anod 0.56 rms volt will produce 1" deflection on vertical and horizontal axes, respectively. Owing to the flat face of the Type 3RP-A Tube, optical distortion is kept at a minimum. X-axis and Y-axis amplifiers supply their respective pairs of deflection plates with voltages that are 180° out of phase. This balanced deflection virtually eliminates astigmatic defocusing and trapezoidal distortion which are unavoidable with unbalanced deflection. The gas-triode linear time-base generator provides recurrent sweep frequencies from 8 to 30,000 cps, synchronized with either the vertical amplifier or some external source.

Additional information on the new Type 292 Oscillograph may be obtained by writing Du Mont.

SOCIAL IMPACT OF TELEVISION

The social impact of television may be greater than the social impact of the atomic obmb, E. Finley Carter, vice president in charge of engineering for Sylvania Electric Products, Inc., told a meeting of the members of the American Association for the Advancement of Science.

"Since the advent of the atomic bomb," Carter said, "There has been increasing evidence of an awakened sense of social responsibility on the part of scientists. Much has been said about the bomb and its effect upon society. But it may be that its social impact will not be as profound as will be that of television."

Carter stressed the popular presentation of scientific personalities to the public as a force tending to isolate scientists and engineers from social obligations by saying, "The scientist, like the cleric, has too often been typified by movies, as well as by some business men and industrialists, as a long-haired dreamer. This is partly a satisfying defense mechanism which often salves peoples' egos to make oddities of those who are versed in the things that they do not understand.

"However, the label has been earned by those who have allowed the cold logic of precise mathematical expressions or physical formulae to crowd out an understanding of the human equations associated with the society in which we live.

"Paradoxical as it may seem, television may encourage a cool aloofness to human society by causing one to withdraw into the confines of his own home, or it can make him a citizen of the world through arousing finer emotions and broadening fields of interest. It is my opinion that the latter influence can prevail and that, we can study, through television, the needs and interests of society at large and so develop a keener sense of our own social responsibility."

This will not happen, Carter warned, without effort by men and women in scientific and engineering fields with vision to see beyond immediate dollar profits. "Nothing will destroy our present social system quicker than the exploitation of men and products for monetary gain alone. Where the product has the social significance of television, the moral responsibility is great.

"It behooves those of us who prize our free enterprise system," Carter stated, "to take stock of where we are going and to apply our knowledge and our vision toward the direction of the use of new developments to make a better society.

"The scientist and engineer, because of the increasing technical complexities of our civilization," Carter continued, "must be prepared to accept more active leadership in business and political fields." He said that this trend has already begun and is reflected in a survey made by the Massachusetts Institute of Technology which revealed that more than six hundred of the Institute's graduates are corporation presidents. Television, he predicted, will increase the need and opportunity of engineers and scientists to serve through business leadership.

He concluded his address by saying that man can and must be master rather than a slave of his scientific and engineering creations but he warned that the balance can be easily tipped in the direction of making man the slave. "The secret," he said, "lies in learning to know people and in getting them to understand each other and to work together. That alone can make a harmonious and progressive society. Television can be both an incentive and a means for accomplishing this."

Key and Answers to New Radiotelegraph Examination Questions

Authored and published by A. A. McKenzie, Hackensack, N. J. 62 pages, 5½ 8½ inches, paper cover, $1.00.

The author bases his work upon the FCC "Study Guide and Reference Material for Commercial Radio Operator Examinations, Revised July 1, 1948" and Supplement No. 4.

This booklet includes Element 1, complete; Element 5, Questions 233 through 296; and Element 6, Questions 226 through 295. Included are a number of circuit diagrams.

SUPPORT THE HEART CAMPAIGN and the MARCH OF DIMES

LABOR - MANAGEMENT NEWS

The Secretary Says:

Transfer of the Bureau of Employment Security to the Department of Labor was one of the first reorganizations effected pursuant to the Hoover Commission's recommendations. The Commission recommended the transfer upon the basis of the relation of the Bureau's programs to other functions of the Department of Labor. The Commission also noted that the organizational set-up of these functions in the various States supports this type of Federal organization. It was anticipated that the transfer would strengthen both the BES and the other Bureaus of the Department of Labor with related functions.

This result is being achieved. We did not expect monetary savings, but we were sure that the transfer would better service. This is in itself an economy, because it means more value received for every dollar expended.

The BES has already become fully integrated into the Department of Labor. The day-to-day working relationship with other Bureaus handling related functions is proving to be mutually beneficial. The resources of all the Bureaus of this Department have been geared to assist the BES in emphasizing placement instead of the payment of unemployment benefits. This emphasis will, in the long run, mean putting unemployed people to work faster, and it will therefore strengthen the entire economy. Our actual experience has underscored the soundness of this recommendation.

The workers have the same stake in reorganization of the Government as other groups of citizens. As taxpayers, they have a stake in governmental economy. As a user of Government services, the working citizen has a direct interest in the efficiency of Government operations.

—o—

The Engineer . . .

Let's take a look at the engineer in general, and the studio engineer in particular. First at his working day—does he work seven hours like the rest of the people in the company? Oh no, he works eight hours. Why that extra hour? Is he less intelligent? Is he so menial? Why is he discriminated against? Is he not entitled to the same treatment as office personnel?

Now look at the people he works with—the announcers, sound men, production men. Their work day starts with their first show, and ends with their last; but how about the engineer? He starts at a certain hour and finishes nine hours later, regardless of when his first show is, or when his last one is. Why? Is he less responsible? Is he a different sort of an animal? However, if there is trouble on the program, the engineer is charged with the error and is logged for it. He is always told that he is supposed to think for everybody else. Incongruous?

Now promotions. Ever hear of an engineer going to sales, station relations, or any other department? Why not? Why can't promotions be made from engineering? Do people still believe in the myth that the engineer is a bad businessman?

Now for the man who works at night. He has to buy his dinner five nights a week, with an outlay of at least $1.50 per night. Does he receive a differential to take care of the added expense? Of course not! Did anyone in the company ever try buying their dinner in a restaurant every night? Or schedule themselves in to work at a different hour each time? I would like to see them do it for a few weeks and then see if they thought a differential was justified.

On an average program where a "Name" personality is used, the talent fee for that person may run from seven hundred to fifteen hundred dollars for each show. The director may get from three hundred and fifty to six hundred dollars for that same show. Now let's see what the engineer gets, assuming a five-hour rehearsal. It approximates the grand sum of fifteen dollars! But wait—if the man is not in the top bracket, he may get as low as nine dollars! Unbelievable? Seems so, doesn't it? There it is! Justice? I don't think so.

What are we doing about all this? Moving very slowly, of course. LET'S MOVE!

We can only do it with a *STRONG NABET!*

MU—February 14, 1950.

—o—

Main Street Becomes Times Square

American cities are finding that the sins of the past do catch up.

In city after city it is being found that the down-town areas are being choked to death by the very growth of their surroundings. They are being destroyed by their own bulk.

In many cities retail business is trying to cure the situation by establishing suburban branches. Thus, shopping centers are growing in outlying sections to accommodate those who will no longer fight the traffic involved in a trip down-town.

Obviously, this is a patch-work remedy. Perhaps there is no complete remedy. However, if there is one, it is in the adoption of city planning, so set up that it is proof against both political and economic pressures.

Some cities have realized this and are going in for complete, over-all city planning. It involves heroic measures, plenty of sacrifices, but lots of ultimate gain on every hand.

* * *

There is a popular song of the moment that has to do with the "dear hearts and gentle people" of the home town, who never let you down.

But some of the municipal messes that have come about by reason of helter-skelter growth have just about made maniacs out of the "gentle people."

I have never been able to figure out why every little town wants to become a great big town. But Chambers of Commerce get busy, promoting and dragooning until the little towns get big—and all snarled up. Not many little towns have made for themselves a plan of municipal growth before they set out to bring in multitudes of new people, factories, etc.

The character of little towns becomes the victim of a combination of massacre and cancer. Finally, years later, a major operation is required to restore order and to save the pumped up down-town values from collapse.

* * *

Nobody can sit back and say "this doesn't concern me," for it does concern everyone.

When cities start to decay at the heart we find that the tax structure is affected; then the wage structure is endangered. Businesses have to move and wage earners have to follow where the businesses go. Transportation bcomes fouled up, communications systems are affected. It would be difficult to find any part of the population that can be said to have no interest.

And the building trades are affected in a big way.

Some are helped; some are hurt. But the hurt is almost sure to hit more persons than they help.

It must be remembered that only so many persons can get into a given congested down-town area. There is a limit and many a city has reached that limit.

Of course, not only does normal growth itself create the condition of destructive congestion; the automobile, changing our whole mode of getting from place to place, has been a tremendously important contributing factor.

* * *

When Mrs. Jones goes down town she also takes a car with her and the car requires space for parking.

The whole business is like a person who tries to swallow so much that the person chokes to death on it. Only so much can go down, whether it be a person's gullet or a city street.

There you have it.

It would be to the great credit of labor if it were to take the lead, wherever possible, in demanding the adoption of sound, expert, properly safeguarded city planning.

Cities can be so planned, even if it is late, that growth will be orderlly, without patch-work and so as to avoid the self-destruction of unregulated and unplanned over-growth.

In too many of our cities "it is later than you think."—CMW.

(CMW is Chester M. Wright, nationally famous labor writer, in semi-retirement in Florida, and editor and publisher of the widely known condensations of the national conventions of the A. F. of L, and the CIO; this in response to several queries about the identity of "CMW."—EdS.)

Non-Communist Affidavits Ruled Prerequisite To Bargaining

The National Labor Relations Board has ruled that an employer has no legal obligation to bargain with a labor organization unless it has already complied, at the time it seeks to bargain, with the filing and non-Communist affidavit requirements of the Taft-Hartley Act.

The Board held further that an employer may make a wage increase without consulting a non-complying union, even though it represents a majority of his employees.

However, the Board made it clear that this ruling applies only to the rights of unions. It does not permit employers to discriminate against employees for membership in a non-complying union or to interfere otherwise with the rights of individual employees under the act.

It was the first ruling on these points.

The ruling was made in a case involving the Andrews Company, a Spartanburg, S. C., ball-bearing manufacturer, and the American Federation of Labor.

Not Violation

A three-member majority of the Board held that the company did not violate the act by refusing to bargain with the AFL when the Federation had not yet met the affidavit and filing requirements, although it complied shortly thereafter. The majority held also that the company did not violate the act by making a wage increase during this period without consulting the Federation, because "there was no exclusive representative then in existence which the (company) was obligated to recognize."

The Federation made no new request for bargaining after it filed the financial reports and affidavits required by the act, but thereafter filed charges with the Board. The majority held that this later compliance did not make the employer liable for failure to bargain when the union was not in compliance.

The majority—composed of Board Members James J. Reynolds, Jr., Abe Murdock, and J. Copeland Gray—declared that, "absent this element of noncompliance," they would have found the employer had illegally refused to bargain.

Chairman Paul M. Herzog and Board Member John M. Houston dissented, on the ground that the employer should have raised the issue of the union's noncompliance at the time of the refusal to bargain. They would have held the company liable for unlawful refusal to bargain because "its refusal was based on a broad rejection of the collective-bargaining principle."

The Board unanimously found that the company illegally discharged 27 employees who went on strike February 2, 1948, and then offered unconditionally to return to work the next day. The Board ordered the company to reinstate these employees with back pay for any wages they may have lost as a result of the discharges.

Coerced Employees

The Board, also unanimously, found that the company had engaged in restraint and coercion of its employees in violation of the law. Specific violations included a speech of the law. Specific violations included a speech in which the president of the company threatened to close the plant if a union were organized and circulation of a questionnaire asking the employees whether they were in favor of shorter hours and a bonus plan, or "would you rather be unionized?" The Board ordered the company to cease discouraging membership in the AFL, or any other labor organization, and to cease interfering with its employees' right to self-organization.

The Board said unanimously that noncompliance of a union could not be used by an employer as a defense against any unfair labor practices involving the rights of individual employees.

NLRB Rules Employers May Not Ask Workers About Unionism

An employee's wearing of a union button does not open the way for an employer to question him about his union affiliations or sympathies, the National Labor Relations Board ruled unanimously.

The Board declared:

"Whenever an employer directly or indirectly attempts to secure information concerning the manner in which or the extent to which his employees have chosen to engage in union organizations or other concerted activity, he invades an area guaranteed (by both the Wagner-Peyser and the Taft-Hartley Acts) to be exclusively the business and concern of his employees."

The Board rejected a contention by the employer that the

questioning of employees wearing union buttons did not constitute a violation of the acts because they had already demonstrated that they had no fear of disclosing their union affiliations.

Of this contention,the Board said:

"This argument loses sight of the essential character of the restraint involved. The subtle pressure created by interrogation results from the realization by the interrogated employee that his employer is concerned with his union affiliation or activities and will, therefore, act to the employees detriment. The restraint and coercion are in no way dissipated, because the employee knows that, by observing the union button, the employer, if he cared to, might have obtained the same information without direct interrogation."

This was the first ruling by the Board on this particular point although, since the early days of the Wagner Act, the Board, with the approval of the courts, has held interrogation of employees about their union or other concerted activities to be illegal. The Board's opinion also contains a summary of its rulings on the questioning of employees.

The ruling was made in a case in which the Board found the Standard Coosa-Thatcher Co. of Ridgedale, Tenn., guilty of discouraging union membership among its employees, discriminating illegally against two employees because of their union affiliations, and interfering with the rights of its employees to self-organization. The Board ordered the company to cease its illegal activities, post a notice announcing cessation, and to reimburse the two employees for any loss of pay they suffered as a result of the illegal discrimination. One employee was laid off for three days and the other was discharged, the Board found. The Board ordered the latter reinstated immediately to his previous job or to an equivalent one. The charges against the company were filed by the Textil Workers Union of America (CIO).

The Board found the company guilty of 11 instances in which supervisors questioned employees about their union affiliations or sympathies. Most of the questioning occurred prior to an NLRB election which the union lost by a tie of 413 to 413.

The decision was signed by Chairman Paul M. Herzog and Board Members John M. Houston, James J. Reynolds, Jr., and Abe Murdock. Board Member J. Copeland Gray did not participate.

Summarizing its rulings on interrogation of employees, the Board pointed out that the law expressly guarantees "the exercise by workers of full freedom of association, self- organization, and designation of representatives of their own choosing for the purpose of negotiating the terms and conditions of their employment or other mutual aid or protection."

Citing the fact that the Board has consistently held espionage and surveillance of employees' union activities to be illegal, the Board added:

"Interrogation by an employer invades the employee's privacy and thus constitutes interference with his enjoyment of the rights guaranteed to him by the act. Its effect on the questioned employee, like that of open surveillance of union activity, is to 'restrain' or to 'coerce' the employee in the exercise of those rights. The employee who is interrogated concerning matters which are his sole concern is reasonably led to believe that his employer not only wants information on the nature of his union interests and activities but also contemplates some form of reprisal once the information is obtained. The finger which espionage might merely direct to him as actually pointed at him by the inquiry. He fears that a refusal to answer or a truthful answer may cost him his job."

Wage Terminology

Modern procedures in collective bargaining have added hundreds of wrods and phrases to the language. A glossary of many of these terms, prepared by the Department of Labor's Statistics for its field staff, begins with "across-the-board-increase" and covers the field to end with "waiting time."

A "split shift," for instance, is a work schedule in an industry, such as local transportation, where equipment and personnel are concentrated during rush hours.

"Push money" has no relation to "mad money," which isn't even in the book. "Push money," which the glossary abbreviates as "P. M.," is described as an incentive payment to sales personnel in retail trade to push and sell items on which the margin of profit is large, to dispose of slow-moving items, or to clear out old stock.

"Dead time" is that time for which a worker is paid, but which is lost to production because of a lack of materials, a break-down of machinery, or from other causes beyond the control of the worker. An incentive worker usually receives his guaranteed or base rate during this period.

A "kick-back" is where the pay envelope is not what it appears to be. BLS describes it as a practice by which an employer or his representatives arrange with workers for a return of a part of their wages as a condition of employment. It's an illegal practice on public construction work or any work financed wholly or in part by Federal funds so declared by law in 1934.

"Merit increase" is a phrase which came into more common use during the war under regulations of the War Labor Board. It is an increase in the wage rate of an individual worker because of outstanding performance or service.

"Peg point" had a similar origin. It is an occupational rate for a key semiskilled or skilled job, establishing an equitable differential within the wage structure. The term was first used in the NLRB decision on wages in the cotton textile industry in 1945 (see WLB 882) and since then has been applied to the wage structure through collective bargaining.

"Runaway rate" is a term and a condition which management seeks to avoid. It is a piece rate or other incentive rate which results in earnings that are out of line with earnings in other jobs of similar requirements. This situation may occur because of changes in methods of technology or from faulty rate setting and may cause earnings to reach levels beyond normal expectations.

"Swing shift" is an extra shift of workers required in establishments where continuous or 7-day operations are scheduled, to provide the other crews with days off. The "swing crew" usually rotates among all the other shifts. The term also applies to the practice of one of three rotating shifts staying on the job for two-shift periods, thus "swinging" the shifts into their new assignments.

"Tip," a long time ago, was a gratuity given by a customer or patron in recognition of satisfactory personal service, or through custom. When the origin of the meaning was lost, however, the Bureau of Internal Revenue ruled that tips are compensation, and therefore taxable income. They are received mostly by workers nowadays in hotels, restaurants, steamships, and barber and beauty shops.

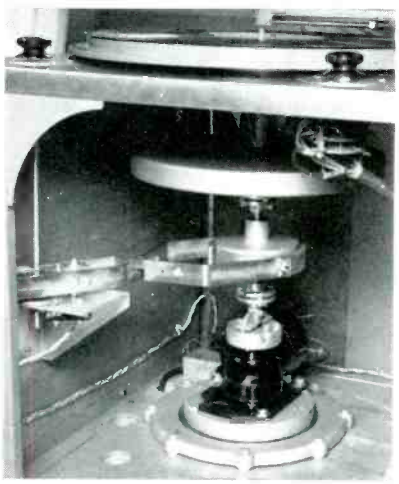
There are 22 types of "wages" described in the glossary. Its nomenclature was gleaned from thousands of collective-bargaining agreements signed in all sections of the country. A limited number is available from the Bureau of Labor Statistics or at regional offices of the Bureau.

Old-Age Security Economic Problem

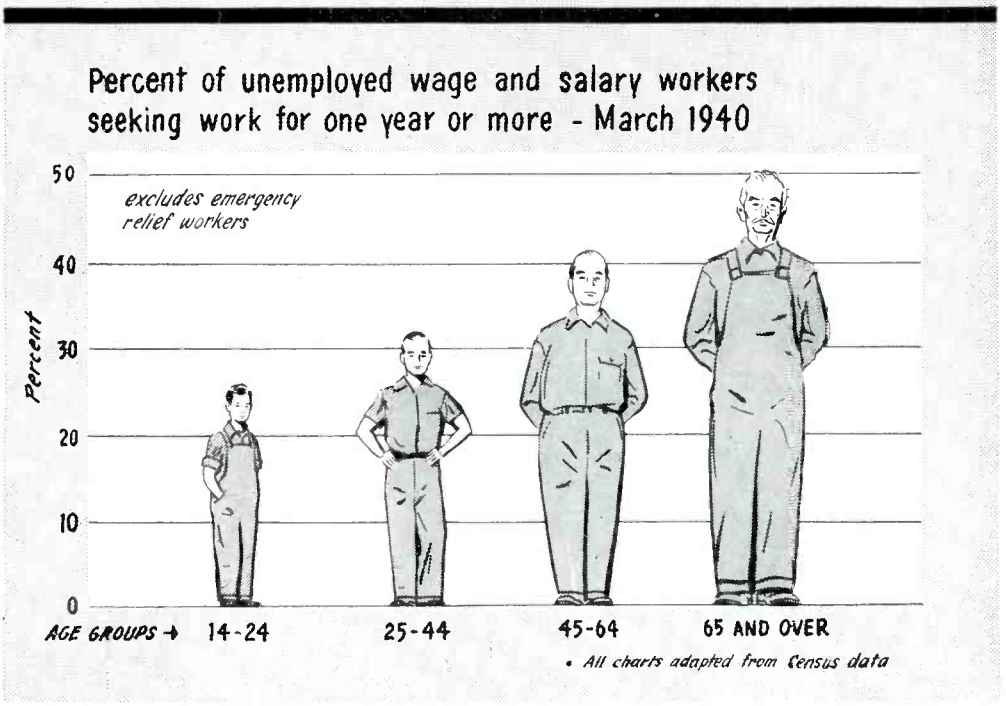
Old-age security has become a major long-run social and economic problem in this country.

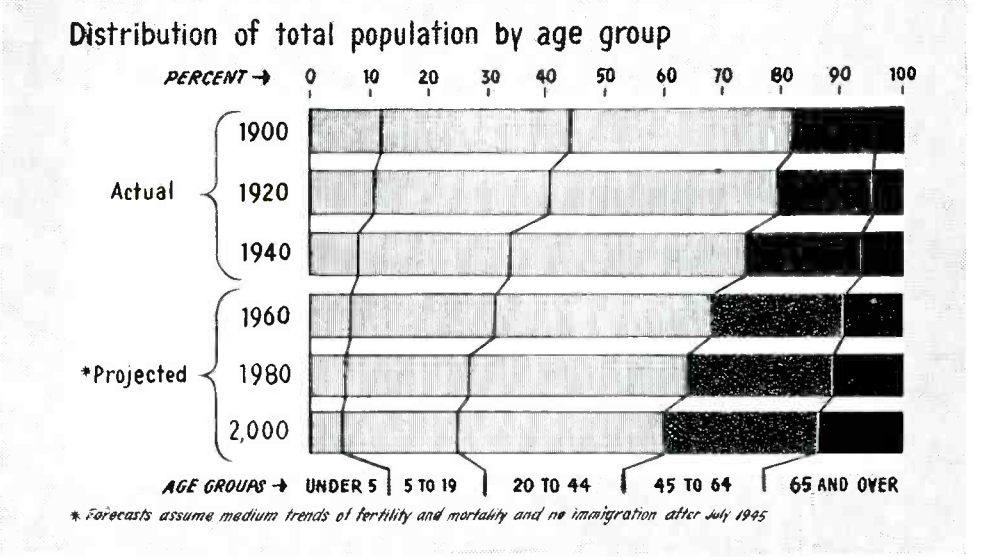
In 1900 there were only about 3 million in the 65-or-over age group. At present 11 million, or 1 out of 13, are in this age group. A declining proportion of them has been able to remain in the labor force. Many employers are reluctant to hire older workers.

The social security program of 1935 was an effort to provide the answer, based on certain fundamental principles: (1) That pensions are a matter of right and so without a means test; (2) that whatever the exclusions, the system applies to all workers in the covered industries; and (3) that pensions are financed by contributions from both employers and employees. Experience has shown that these principles are sound, but it has also shown flaws in the system. Certainly the problem of how best to meet the needs of retired workers is an issue of prime importance.



Interior view of the RCA Type 70-D Transcription Turntable fitted with RCA's new MI-11883 45-rpm conversion equipment for broadcasting of the new 45-rpm records. The conversion kit consists of a switch and cam shaft assembly, dial plate, and adapter hub. Switch and dial plate are mounted on cabinet top at upper left, cam shaft leads from switch above to microswitch and brake arm assembly mounted in cabinet at left center of photo. The brake arm surrounds the clutch assembly, which, with couplings above and below, is mounted in the main drive shaft.





WJZ-TV, ABC New York Station, Starts Full Power Transmission From Top of Empire State Building.

WJZ-TV, New York key station of the American Broadcasting Company's television network, began full power transmission of its regular program schedule from its new site on top of the Empire State Building on *Thursday, Feb. 9.*

The 26-block move, from the top of New York City's Hotel Pierre, to the present location on the world's tallest building was accomplished with no interruption or dislocation of WJZ-TV's regular program schedule.

In its new location, WJZ-TV will continue to be seen and heard on channel seven and now will present an unexcelled signal to viewers in this area. The new added height gained by the move to the Empire State Building will give new clarity and brilliance to the WJZ-TV pictures.

Since January 26, WJZ-TV has been testing from its new transmitter location with temporary equipment pending the dismantling and moving of its 5,000 watt transmitter from the Pierre. Testing with the 5,000-watt transmitter began on Monday, Feb. 6.

In order to facilitate and speed the installation of WJZ-TV's transmitter in its Empire State Building home—3200 square feet of space which the network has leased on the 85th floor —ABC engineers completed the necessary wiring, duct work and installed the transmission line in advance of the unit's mile and a quarter move. Thus, all that remained to be done when the transmitter arrived at the 85th floor of the world's tallest building was connect it to the lines already in place. Normally, all wiring and connections of this type have to be installed when the transmitter arrives at the site.

WJZ-TV begins operations with a single element superturnstile antenna from the existing pole on the Empire State Building. When the new 199-foot tower is built on top of the Empire State Building, WJZ-TV will move its antenna onto it. Meantime, during the period when the existing pole is removed from the Empire State Building and the new 199-foot tower erected, WJZ-TV will operate with a second new antenna specially designed by the ABC engineering department and constructed by RCA. Consisting of a number of individually connected antenna segments this second antenna will have a diameter of 14 feet. When television transmissions begin from the new tower, WJZ -TV will retain the second or ring antenna for emergency or standby use.

WJZ-TV made its formal premiere on August 10, 1948 from the Hotel Pierre transmitting site in New York City as the first of ABC-TV's five owned and operated video stations.

ABC also owns and operates television stations in Chicago (WENR-TV), Detroit (WXYZ-TV), Los Angeles (KECA-TV), and San Francisco (KGO-TV).

DUES PAYMENTS PROTECT WORKERS IN UNION SHOPS

The National Labor Relations Board has ruled that the Taft-Hartley Act prohibits the discharge of an employee under a valid union shop if he tenders payment of his union dues and initiation fees, even though the employee may decline to fulfill other requirements for union membership.

It was the first ruling by the Board on the limitations of the act's union-shop provisions.

The ruling, by a three-to-two vote, was made in a case involving the Union Starch & Refining Co. of Granite City, Ill., and Local No. 1 of the Grain Processors Independent Union, which has since become Local No. 153 of the American Federation of Grain Millers.

The Board found that both the company and the union violated the act in the discharge of three employees who offered to pay a sum of money equal to the union's initiation fee and two months' dues, but declined to attend a union meeting at which they were to be voted on and were to take the obligation of union membership. Two of them were unwilling to take the oath because of religious scruples.

The majority opinion was signed by Chairman Paul M. Herzog and Board Members Abe Murdock and J. Copeland Gray, Board Members John M. Houston and James J. Reynolds, Jr., dissented but did not immediately file a dissenting opinion. They said they will do so later.

The Board ordered the company to reinstate the three employees in their former jobs or ones equivalent. It ordered the company and the union jointly and severally to reimburse the three employees for any loss of pay they suffered.

Interpreting the limitations on valid union shops, the majority opinion said:

"Provisos to section 8 (a) (3) spell out two separate and distinct limitations on the use of the type of union-security agreements permitted by the act. Proviso A protects from discharge for non-membership in the contracting union any employees to whom membership is not available for some discriminatory reason. Proviso B protects employees who have tendered the requisite amount of dues and initiation fees and been denied membership for *any other reason,* even though that reason be nondiscriminatory.

"At first blush the provisos appear to involve duplication. More careful analysis, however, readily discloses that provisos A and B have ample independent scope. For example, it is clear that proviso B requires a tender of dues and fees, whereas proviso A protects any employee discriminatorily excluded from membership whether or not such tender is made.

"We therefore read proviso B as extending protection to any employee who tenders periodic dues and initiation fees without being accorded membership. If the union imposes any other qualification and conditions for membership with which he is unwilling to comply, such an employee may not be entitled to membership; but he is entitled to keep his job. Throughout the amendment to the act, Congress evinced a strong concern for protecting the individual employee in a right to refrain from union activity, and to keep his job even in a union shop. Congress carefully limited the sphere of permissible union security, and even in that limited sphere accorded the union no power to effect the discharge of non-members except to protect itself against 'free rides'."

When is a dot not a dot?

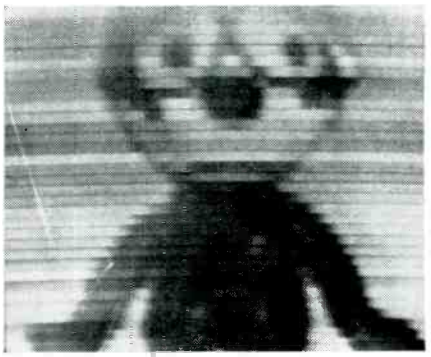
Look carefully at the pictures on this page, to see how television creates an image

•

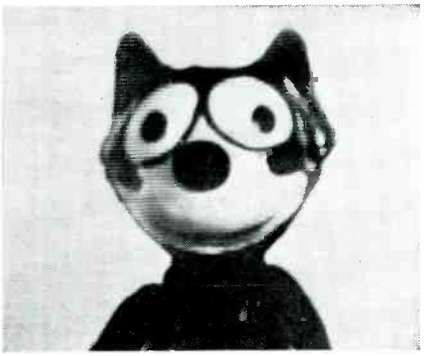
No. 2 in a series outlining high points in television history

•

Photos from the historical collection of RCA



Felix the Cat was the "stand-in" when this 60-line image was made *mechanically* in tests at NBC's first experimental television station.



Improved definition is obvious to anyone in this *all-electronic* 120-line image of Felix—transmitted in the early days of NBC television.

By increasing the number of scanning lines to 441 lines in each picture frame, RCA scientists gave us a sharper, clearer television image.

And here you see the deep blacks, clear whites, and subtle halftones as transmitted by NBC with our present 525-line scanning system.

• As parlor magicians say: "The hand is quicker than the eye!" But modernize the statement so that it becomes: *Television magic is quicker than the eye*—and that's why you see a photographic image in motion . . . where actually there is only a series of moving dots!

To explain this to laymen, ask them to examine a newspaper picture through a magnifying glass.

Surprisingly, few people know that newspaper pictures are masses of tiny dots "mixed" by the eye to make an image. Even fewer know that the same principle creates a television picture . . . and, when picture after picture comes in rapid succession, the eye sees motion.

Devising a successful way to "scan" an image—to break it into dots which could be transmitted as electrical impulses—was one of television's first basic problems. Most of the methods dreamed up were *mechanical*, since electronics was then a baby science. You may remember some of the crude results transmitted mechanically.

Television as we now know it, brilliant images on home receivers, begins with the invention of the *iconoscope* tube by Dr. V. K. Zworykin of RCA Laboratories. First all-electronic "eye" of the television camera, this amazing tube scans an image—"sees" it even in very dim light—translates it into thousands of electrical impulses which are telecast, received, and re-created as sharp, clear pictures in black-and-white—on the phosphorescent screens of today's home television receivers.

And, just as the first flickering "30-line" pictures—produced mechanically—eventually became our present sharp 525-line images, so the iconoscope itself was improved until it became today's supersensitive RCA image orthicon television camera. All-electronic, the image orthicon peers deep into shadows, needs only the light of a candle to see and transmit dramatic action.

But every single television development made by scientists at RCA Laboratories depends, in the end, on a basic physiological fact: When the human eye sees a series of swift-moving dots on a television screen, it automatically "mixes" them into a moving photographic image!

Radio Corporation of America
WORLD LEADER IN RADIO—FIRST IN TELEVISION

BROADCAST ENGINEERS' JOURNAL—MARCH, 1956

A "Brand New" SOLUTION TO YOUR AUDIO MEASUREMENT PROBLEMS

Daven's Moderate Priced Transmission Measuring Set

This is the instrument for which you have been waiting! For accuracy and efficiency, the Daven Type 11 A gain set will fill your bill. Incorporating many of the features employed in more expensive models, this unit may be used to make all the precise measurements required by the FCC. This is a direct reading instrument, entirely eliminating time-consuming computations.

A new design feature permits the servicing and inspection of all components from the front of the panel, with a maximum of ease and a minimum of time.

It is no longer necessary to use makeshift equipment for determining the transmission characteristics of audio systems. The Type 11 A gain set has been priced low enough to place it within the reach of the most limited budget.

FEATURES

FREQUENCY RANGE:
20 cycles to 20 KC.

ACCURACY:
Accuracy is ± 0.1 db, from 20 cps to 20 KC.

OUTPUT LEVELS:
Ranges of output levels: +4 to —110 db and —10 to —124 db in steps of 0.1 db.

ACCESSIBILITY:
All components accessible from front of rack panel—for ease of servicing.

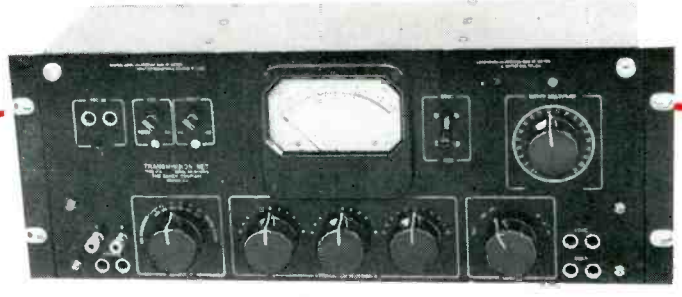
IMPEDANCE RANGES:
(a) *Source Section*— 600-150 ohms internally terminated. 600-250-150-30 ohms unterminated.

(b) *Load Section*— 600-250-150-16-8-4 ohms.

APPLICATIONS

- AUDIO GAIN MEASUREMENTS.
- AUDIO LOSS MEASUREMENTS.
- MEASUREMENTS OF MATCHING AND BRIDGING DEVICES.
- COMPLEX CIRCUIT MEASUREMENTS.
- MEASURING MISMATCH LOSS.
- FREQUENCY RESPONSE MEASUREMENTS.
- CHECKING CABLE LOSS.
- TELEPHONE REPEATER MEASUREMENTS.

WRITE TO DEPT. BE-5 FOR ADDITIONAL INFORMATION.



ALWAYS SPECIFY DAVEN FOR PRECISION EQUIPMENT

THE DAVEN CO
191 CENTRAL AVENUE
NEWARK 4, NEW JERSEY