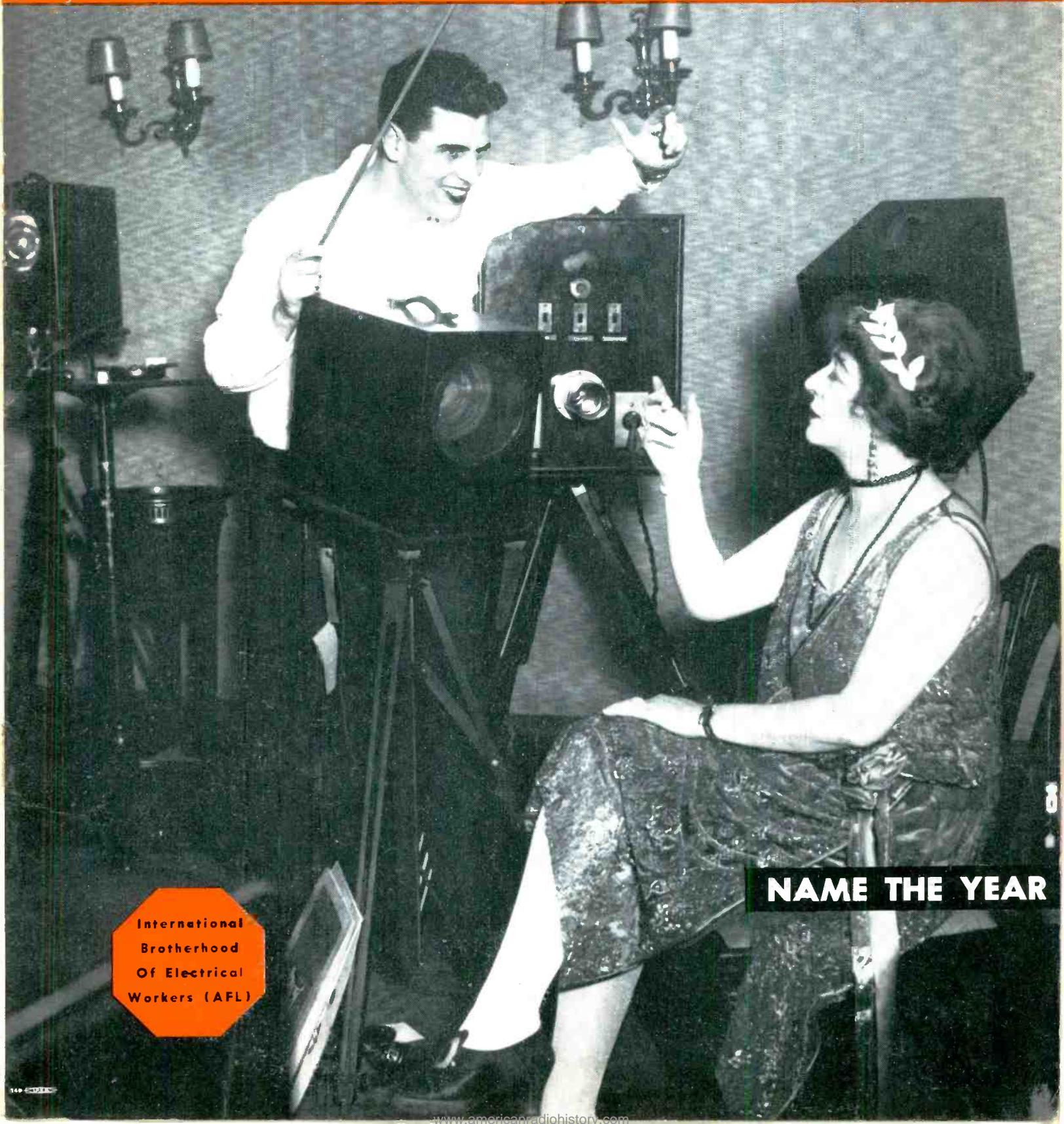


RADIO, TV and RECORDING



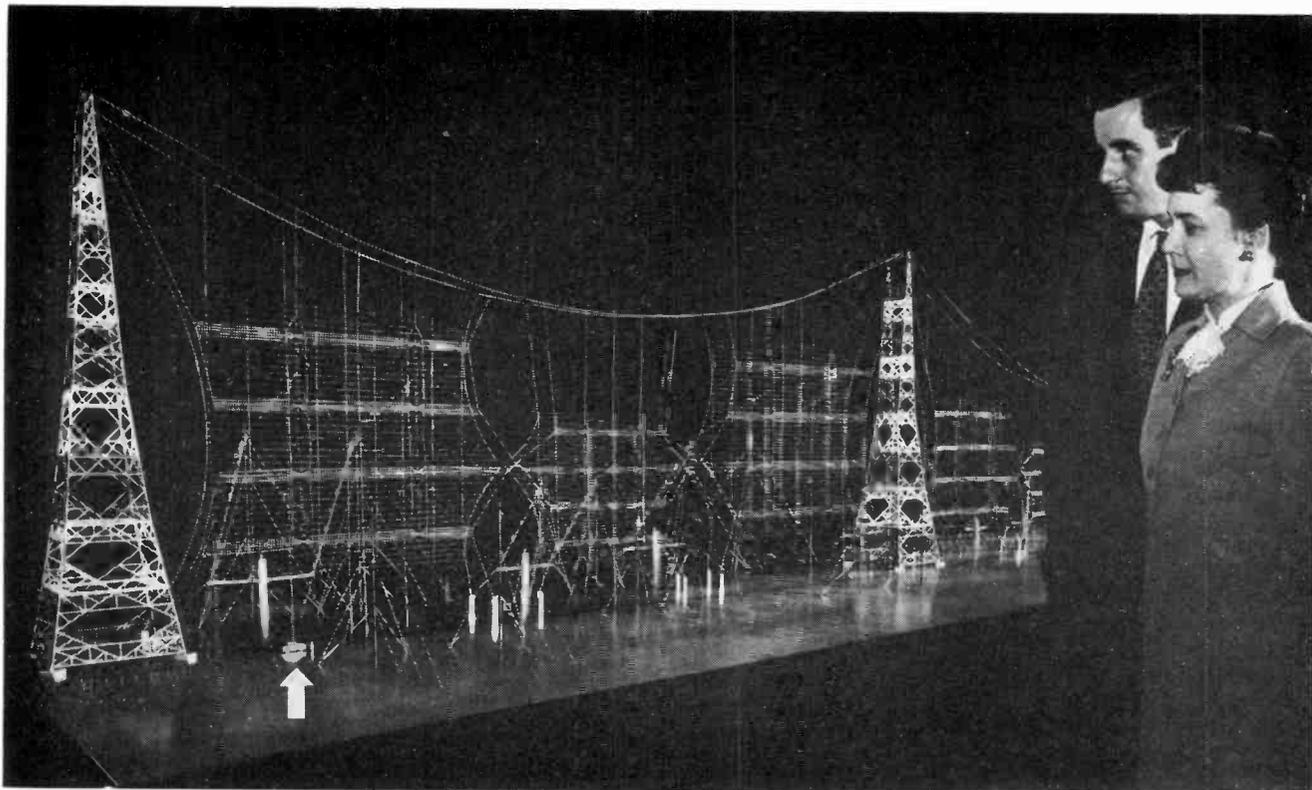
# TECHNICIAN-ENGINEER

MARCH, 1952



International  
Brotherhood  
Of Electrical  
Workers (AFL)

NAME THE YEAR



## More Power to Pierce Iron Curtain

**N**OW building near Seattle, Wash., and Wilmington, N. C., are two \$7,000,000 stations for the Voice of America that will be 10,000 to 20,000 times more powerful than any others in the world. Listeners in Vladivostok, Siberia, will be able to tune in Voice programs just as easily, officials say, as they pick up local Communist stations. The new stations are expected to be in operation in about 17 months.

The Kremlin has been using 250 huge "Skyway" transmitters, 1,000 local jammers and even poor trolley connections in an effort to drown out Voice broadcasts. However, the Voice has been getting through with some regularity with its present facilities, but the jamming has cut down and sometimes blotted out reception.

The new transmitters, it is expected, will send clear signals through the jamming with such force that static-free programs can be picked up on even the most inexpensive Russian radios.

It is estimated that it is costing Russia five times as much to jam broadcasts as it costs the Voice to produce them.

Moscow is still beaming twice as

many broadcasts to the free world as the United States is sending behind the Iron Curtain. Every week, it broadcasts for 700 hours, compared with the Voice's 350 hours. The Voice broadcasts in 46 languages over 40 United States and 40 overseas transmitters. It is using 60 per cent of its equipment to penetrate the Iron Curtain. Forty per cent of its programs are beamed in the same direction, with the rest directed toward countering Red propaganda in friendly countries.



### Our Cover

### Name The Year

It was the first complete "drama" to be transmitted by television and was broadcast from the laboratories of the General Electric Co. at Schenectady, N. Y.

That is Actress Izotta Jewel before the camera, and the man directing the performance is Mortimer Stewart. Note the lighting and camera equipment, the "latest thing" of the day. The date? September 11, 1928.

# If FCC Relaxes Operator Requirements, It Jeopardizes Jobs and Stations

By D. W. Tracy, *President, International Brotherhood of Electrical Workers*

**O**NCE again, some employers in the broadcasting industry are attempting to push through a cheap labor set-up, hoping to hire technicians and engineers of lower-than-IBEW calibre at lower-than-IBEW salaries.

Although there seems little chance that the Federal Communications Commission will ever establish a permanent "cheap labor" policy for the industry, organized engineers of IBEW must continue to be vigilant in the face of this threat. A quiet, behind-the-scenes move has been underway for some time to get the FCC to issue an order similar to Order 91-C of World War II days, when the supply of \$20-a-week men ran out.

Operator requirements for the radio-TV industry must remain high, if skilled engineers are to maintain their present wages and working conditions, and expand them further.

Several members have written to Washington to find out the IBEW's stand on this problem. Our answer is that the Brotherhood will always press for high standards in the craft.

The National Association of Radio and Television Broadcasters recently proposed to reduce operator requirements for low power broadcast stations, and, as a result, it stirred up a rash of comment.

The general manager of Station WLBB, Carrollton, Ga., said that the NARTB proposal failed to take into account the fact that "broadcasting has progressed a long way from the day when the engineer assembled the transmitter at sign-on time every day and operating the 250 w transmitter required more adjustments and controls than the 50 kw of today."

## Cook-Stove Controls

"Operating the low power broadcast transmitter has been reduced in complexity to a point where the controls to be adjusted actually number less than on some electric cook stoves, but the FCC license requirements have advanced to such a state that the 250 w transmitter operator must know how many interlaced scanning lines cross the mosaic of a TV camera tube, or how many microseconds long a blanking pulse or sync pulse is."

There is some justification, perhaps, for declaiming some elements of the FCC licensing requirements, but the main consideration for the individual engineer is his job security.

The NARTB proposal and similar suggestions would

surely result in lower engineering standards. If the FCC should accept such a "money-saving" petition, it will probably allow the average station to fire as many as three first-class engineers. The unemployment of many radio engineers and combination men is bound to result.

The loss of only one or two engineers can be an extreme hardship to a station. It could jeopardize the station's ability to operate its facilities and comply with FCC requirements. The loss of three or four engineers at a large station could have the same result.

Broadcasting operations depend completely upon electronic equipment, technical knowledge, and technically-trained manpower, as industry leaders know too well. Trained and experienced engineers are necessary for this work.

## Station Operation Affected

To relax the licensing requirements for engineers would not only take away the job security of the individual engineer, but it might seriously affect operation of the station for a long period.

Industry-wide experience has shown during recent months that trained engineers are almost impossible to find. To meet this situation, the FCC has granted special license waivers to certain specific station cases.

To meet the existing problem of manpower, the industry must neither glut the stations with inexperienced men nor undertake piecemeal measures which will have no long-run value.

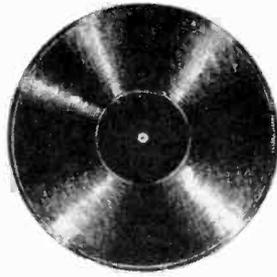
What is called for is a determined effort to anticipate needs . . . now.

Radio and television is a greatly expanding field. Once the Big Freeze on station allocations is lifted, there will be a need for additional technical personnel. But because the thaw after the freeze may cause the work of many engineers to be temporarily spread thin, there is no reason to relax the standards under which they operate.

It has been predicted there will be 100,000 jobs in television alone by 1962. To meet this employment challenge to our industry we must encourage the further training of highly-qualified personnel, not open the floodgates to unskilled workers.

Along with the challenge of the industry is a great urgency for broadening the organizational work of the International Brotherhood. It will take a united strength to achieve the wages and working conditions of engineers throughout the nation.

# the RECORD SPEAKS . . .



## IBEW Protective Features Bring Shreveport Gains

Before Local Union 1178 came upon the scene, radio-employment conditions in Shreveport, La., were among the nation's worst. Transmitter Engineers pay ranged from \$40 to \$55 per week. Announcer-Technicians pay was slightly higher—ranging from \$45 to \$60 per week. The higher figures were received by a minority. Some Shreveport radio stations did not pay overtime for hours worked over 40 per week. No station had a holiday plan. No station had a definite pay plan. Few had definite vacation plans. Sick leave was at the discretion of the employer. The employe held his job in uneasiness—knowing that his employer could discharge him immediately for any reason, or NO reason. Employers promises were usually as empty as were the employes pockets.

April 3, 1950, the Charter for Local 1178 was issued. Twenty names were on it. Shortly thereafter, an NLRB election was held to determine if the employes wanted to be represented by the Union. We did. After fruitless negotiation, we were on strike at Radio Station KRMD by September 19, 1950. Our strike ended, our first agreement was signed November 15, 1950. Later, contracts were signed with KENT, KTBS, and KCIJ. The station wattages are: KRMD-250, KENT-1,000, KTBS-10,000, KCIJ-5,000. KWKH, 50,000 watts, has been fighting an Unfair Labor Practices charge since the Fall of 1950. After IBEW received a victory in the case from the Board, KWKH has filed exceptions.

After 2 years with IBEW, here are the conditions in Shreveport now:

### Said the Master Control Engineer To the Remote Control Engineer

"Though your troubles are intense,  
Can't you modify your bray?  
Have you only one defense:

'It's leaving here okay.'"

—Thanks to CBS' Under Control.

# RADIO, TV and RECORDING TECHNICIAN- ENGINEER

Published monthly by the International Brotherhood of Electrical Workers (AFL), 1200 Fifteenth St., N. W., Washington, D. C., for the men and women employed in the recording, radio and television industries.

D. W. TRACY  
President

J. SCOTT MILNE  
Secretary

VOLUME I



NUMBER 3

Application for second-class mail privileges under the Act of Aug. 24, 1912, (Sec. 34-20, Postal Laws and Regulations, 1948 edition) pending.

PRINTED ON UNION MADE PAPER

Pay: KRMD—\$70.00 Engineers (Plus Cost of Living)  
—\$73.00 Announcers (Plus Cost of Living)

KENT—\$70.00 Engineers (Plus Cost of Living)  
\$75.00 Announcers (Plus Cost of Living)

KCIJ—\$75.00 Engineers, Announcers  
\$85.00 Chief Engineer

KTBS—\$80.00 Engineers  
\$62.50 Control Board Operators (Unlicensed)

Holiday Plan: 6 holidays or Double Time, if worked.  
(All stations)

Vacation Plan: KRMD—3 weeks KTBS—2 weeks  
KENT—3 weeks KCIJ—2 weeks

Call-Backs: KRMD—3 hours, 6 on day off  
KTBS—3 hours, 6 on day off  
KENT—3 hours, 4 on day off  
KCIJ—3 hours, 6 on day off

Sick Leave: 3 weeks, all stations

The Agreements, of course, contain all the standard IBEW protective features.

Local Union 1178 is indeed grateful to IBEW; Brother Lawson Wimberly; Brother E. R. Carle; and especially to Brother O. E. (Ernie) Johnson—the International Representative whose tireless efforts and personal sacrifice have guided the steps of the Local all the way. Our members all realize that our better working conditions are the result of painstaking work by the Brotherhood and the abovementioned Brothers.

LEIGH CARDWELL,  
Vice President, L. U. 1178,  
IBEW, Shreveport, La.

**Technician-Engineer**

# IBEW Scores Smashing Victory in CBS Election

**E**ARLY last Spring the Columbia Broadcasting System was notified of the desire of the Brotherhood that the CBS-IBEW agreement be opened for renegotiation. This presented the opportunity for a question of representation to be raised by the National Association of Broadcast Engineers and Technicians (CIO), under NLRB rules, and a petition was filed with the Regional Director of the NLRB in Chicago. This action has been responsible for nearly 10 months of delay in CBS-IBEW negotiations and was the opening gun in a typical CIO campaign to raid, disorganize and confuse organized labor. The IBEW has represented the technical employes of CBS since 1939.

When the representation petition was filed, the American Federation of Radio Artists (AFL) intervened to protect their interests in sound effects work at Chicago, the American Federation of Musicians (AFL) intervened to protect their work in turntable operation at St. Louis and Chicago, the International Alliance of Theatrical and Stage Employes (AFL) became an interested party because of their members who handle lighting and special visual effects at New York and Los Angeles and the IBEW was of course an interested party because of its long history of bargaining with CBS.

## Chicago Hearing

A hearing on the petition was held in Chicago and was recessed to further hearing in New York. Some 27 days and 614 pages of testimony later, the NLRB hearings were closed and briefs were filed. In the meantime, AFRA and the AFofM withdrew from the case, satisfied that their interests were going to be protected. During the latter part of the hearings, however, IATSE Local 776 filed a petition for representation of the film editors and cutters employed by CBS in its Los Angeles operation. A hearing was held in Hollywood on this petition and the record was incorporated in the record of the hearings on the "overall unit".

On December 17, 1951, the National Labor Relations Board issued its decision on the consolidated cases. Affecting some 880 eligible voters who work for the company in Boston, New York, Chicago, St. Louis, Minneapolis, San Francisco and Los Angeles, the Board

### The Box Score

Voting by CBS Technical Unit	
Percentage of Eligibles voting .....	96.56
Percentage for IBEW...	75.76
Percentage for NABET...	21.77
Percentage for "No Union" .....	1.72

found the overall technical unit heretofore represented by the IBEW to be an appropriate unit for future bargaining. A second unit, composed of 30 professional engineers employed in research and development work in New York was given the choice of union membership, and a third unit composed of 6 film cutters and editors in Los Angeles was also given an opportunity to vote for or against union membership.

To make a long story short the election was held in all the cities affected on January 24, 1952. Because of days off, leaves of absence, vacations and military leaves it was found necessary to have a portion of the voters cast their ballots by mail. Because of the delay of the mailed ballots, all ballots were counted in the office of the Regional Director in Chicago, Illinois, on January 31, 1952.

### Remarkable Turnout

The vote turnout was quite remarkable—96.56% of the eligible voters had cast ballots! Of a total of 844, 815 votes were counted by the NLRB. Only 2 of the 815 were void, 6 were challenged and 14 votes were cast for "no union".

The overall technical unit voted more than 3 to 1 for IBEW. The IBEW received 75.76% of the votes, NABET-CIO received 21.77% and 1.72% voted for neither union. The professional engineers declined to be represented by any union, casting 17 votes for "no union", 11 for IBEW and none for NABET-CIO. The Los Angeles film editors and cutters chose to be represented by the IATSE, voting 5 ballots for that organization, none for NABET-CIO and none for neither union. The IBEW withdrew from participation in this latter ballot, prior to the date of the election.

It is quite obvious that the result of the CBS election is a very substantial victory for the IBEW—and for the AFL. And it is quite significant that the people in the industry do not consider the CIO as being an acceptable union. The CIO-patterned vertical unionism which NABET has attempted to set up in radio and television broadcasting is impractical, unwieldy and not in the best interests of the workers themselves. Because this organization was born as an independent (company) union in the NBC and ABC networks, its main strength

is composed of the men who work for those companies. Any informed observer can see that it is only a matter of time until these strongholds will fall.

All A F of L members can rejoice in the results of the CBS election—the forerunner of complete organization of the broadcasting industry. The IBEW is very appreciative of the support of the other A F of L unions and can be justly proud of the record set by its own Local

Unions 1212, 45, 1228, 1217, 1220, 202 and 1216, in the most significant victory in the radio and television broadcasting industry in many years.

We have adopted the NABET-CIO campaign slogan, coined during the CBS program—“As CBS goes, so goes the nation.” That is the only worthwhile contribution that the CIO has made to organized labor in the history of its efforts in broadcasting.

## Chicken Pox or No, On with the Show!

WASHINGTON, D. C., is becoming a suspicious, if not hardened, city. With six of eight investigating committees searching for clues to corruption, other committees investigating investigating committees, Senator Joe McCarthy calling everybody a Communist, and a committee seeking to impeach Senator McCarthy, a masked man appearing before a group investigating a Russian massacre, it is small wonder that the other day apartment residents at 2301 Cathedral Avenue gasped at what they saw in the corridor.

A man was squatting quietly against the wall. He had on earphones and was intently twisting knobs on a machine and listening. Here was one of those rumored Washington wire tappers at work!

Curiously enough, nobody called the police. And so John Strong continued his work.

Strong, an IBEW engineer for Station WWDC in the nation's capital, was actually doing a remote for a regular WWDC AM broadcast. In the room beyond his equipment Bob Wolff, WWDC sportscaster, was down for the count in a bout with chicken pox, and Strong was taping his daily sportscast.

Wolff's little boy came home one day with a mild case of the childhood disease. The family hardly knew what was up until the master of the house and a second son went down with it. Then the baby caught the bug, and only mama was left to manage the spreading little spots which dotted the cheeks of the family.

WWDC Program Director Norman Reed found himself with a two-or-three-weeks blank in the sports schedule. It was finally decided to set up a recorder outside the Wolff door, hand the mike to Mrs. Wolff as quickly as possible, and run like mad back to the Magnecorder. Wolff, with a face towel covering most of the mike, did his daily stint from the bedroom.

This occurred so regularly at 4 p.m. each day, that neighbors' suspicions were quieted, and Wolff's sports comments went on each evening at 6, thanks to courageous IBEW engineers.



IBEW Engineer John Strong with his recording equipment outside the Wolff's door. Mrs. Wolff's hand reaches out, and the WWDC microphone moves off into the shadows for its daily pick-up.



The fallen sportscaster reading his script to a swaddled mike, two hours before he goes on the air. Usually, Wolff had an audience of four—three children with chicken pox and an untiring wife.

## International Representatives Hold First Meet



The eight international representatives of the Radio, Television, and Recording Division of IBEW met February 27 and 28 at IBEW Headquarters in Washington to discuss organizational plans and study legal and administrative problems. At the conference table were Taylor L. Blair, Jr., Chattanooga, District 12; Harold J. Becker, St. Louis, District 11; Russell D. Lighty, Boston, District 2; Marvin L. Larsen, San Francisco, District 9; Al Hardy, Division Director; Forrest C. Conley, Fort Worth, District 7; O. E. Johnson, Birmingham, Ala., District 5; Franklin A. George, Glan Ellyn, Ill., District 3; and Freeman L. Heard, Oak Park, Ill., District 6.

## Rayburn Bars Radio, TV; FCC Eyes 'Racecasts'

INSIDE of a week during the month of February, the government struck hard at broadcasting and television activities at two extremes.

Speaker of the House Sam Rayburn made his debate-stirring announcement that he would not permit live or transcribed broadcasting or televising of committee hearings. And, a couple of days later, the FCC took a swing in another direction, announcing hearings had been ordered into the time given by 12 radio and three television stations to horse race information.

While having no connection, the two developments brought into sharp focus the mounting importance of radio and television on the national scene and an increasing interest of the government in the booming industries.

Rayburn's decision brought a storm of protest from throughout the industry. Housewives, who developed a sharp taste for the drama of committee hearings during Senator Kefauver's crime-storming tour, joined in the howl. And, Republicans in Congress, quick to recognize a popular issue, jumped on Rayburn with all fours. They were joined by a few Democrats who urged a clarification of House rules to permit broadcasting and televising of hearings. Those who favor this step propose to leave

the decision of TV or not TV up to the committee conducting the hearing.

In the matter of the FCC action on the horse race broadcasts, it was announced that licenses of the 15 stations affected would not be renewed pending completion of the hearings. Dates for the inquiries were not announced immediately.

Two other stations, WANN, Annapolis, Md., and WMEX, Boston, voluntarily dropped the racing broadcasts, and their licenses, which had been held up temporarily, were renewed.

The FCC, in its announcement, claimed the horse race information as aired by the stations could be helpful to "illegal bookies."

Stations affected by the hearings are:

KHBS, KSAN and KYA, of San Francisco; KWKW, Pasadena, Calif.; KLAC-TV, Los Angeles; WMIE and WWPB-FM, of Miami; WJZ-TV, WPIX (a television station) and WBNX, of New York City; KVSM, San Mateo, Calif.; WWBZ, Vineland, N. J.; WRIB, Providence, R. I.; WGPA, Bethlehem, Penn., and WITH, Baltimore, Md.

# Coy's Resignation Causes Unrest

*Informal Request for Interview With President Truman  
Precedes Departure of FCC Chairman as 'Free Agent'*

Surprise gave way to worry among broadcasting industry leaders when the full significance of the resignation of Wayne Coy as FCC chairman struck them.



Wayne Coy

the commission's most turbulent years. His tenure saw television come of age and adoption of the CBS field sequential color system after one of the hottest debates in industry history. The emergence of TV during Coy's reign is emphasized in these figures: When he became commissioner there were seventeen TV stations on the air; when he resigned there were 108 stations and nearly 500 applications for TV permits.

## Freeze Thawing

The FCC was and is just winding up a 41-month freeze in TV. It is expected to begin taking action on permit applications sometime this year. During the long freeze period Coy refused to talk terms or make deals, while holding an official office with the Commission. He could have taken many offers from private business for positions paying far more than the \$15,000 he was earning as Commission chairman, but he preferred to resign first. He wanted to be a free agent to negotiate for a private position without the involvements of holding public office. His high sense of ethics prevented a definite commitment before he had tendered his resignation to President Truman.

Coy's resignation came in an informal request to the President on the morning of February 21. The Presi-

The industry magazine, *Broadcasting • Telecasting*, gave this fidgeting summation in its lead article on Coy's decision:

"Uncertainty, unrest and near pandemonium pervaded broadcast circles recently with the sudden resignation . . ."

Indiana-born Coy had served as FCC chairman over four of

dent was host to several hundred fellow members of the Masonic order, including the FCC commissioner, who sat at the head table. During the occasion, Coy told the Chief Executive he'd like an appointment later in the day.

Scarcely an hour later—11:15 a. m. by the secret White House list of "unlisted" Presidential appointments—Wayne Coy slipped into the Executive Offices by a side door, a trick he learned during World War II while serving as Franklin D. Roosevelt's special assistant.

At 11:40 a. m. Coy emerged from the meeting, leaving this time via the route normally used by visitors on the publicly-announced White House appointment list.

## Seat of His Pants

He told reporters as he left the White House that "the seat of my pants is out . . . I resigned to negotiate for a job. It's for economic reasons . . . It costs money to educate kids. I have a boy in college and one in prep school. People in government have a hard time."

He also made another comment: "A lot of licensees think they are getting a license to declaim against the Commission."

Interim chairmanship of the Commission immediately fell to Vice Chairman Paul A. Walker. With Coy's departure, the only Democrat left on the Commission is Frieda B. Hennock, the strong advocate of generous reservations for TV facilities for non-commercial educational stations.

## ILGWU Closing Last of 3 FM Stations

The International Ladies' Garment Workers Union, AFL, has closed the last of three frequency modulation radio stations it originally owned. WFDR in New York City went off the air February 15.

"We have found it impossible to get public acceptance of FM as a separate unit, where it is not combined with AM broadcasting," said Frederick F. Umhey, executive secretary of the union and president of WFDR Broadcasting Corp. "Operating costs are so high that we can't continue."

WFDR began broadcasting in May, 1949, a year after the union opened FM stations in Los Angeles and Chattanooga. Last year the Chattanooga station closed, and the Los Angeles outlet was sold to an AM broadcaster.

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# We Can Point with Pride!

By **ALBERT O. HARDY, Director**

**Radio, TV and Recording Division, IBEW**

I AM taking this opportunity to address each member of our division of IBEW, to explain to each of you a little of what has been going on and what the International Office plans for the future. Some of the membership and some of the local unions may feel that they have been neglected during the past several months; an article on the CBS battle in this issue should give you some idea of the activity which has demanded so much of our time since early last Spring.

Many issues in a series of "Fact Sheets", which were specifically prepared during the CBS campaign, were mailed directly to the CBS men at their home addresses. The task of keeping the mailing lists current was quite a job in itself. The necessity of constant liaison with the local unions, the hearings, briefs and all the attendant technicalities were tremendously time-consuming. Now that the election has been held, the time and effort can certainly be said to have been well spent. No small part of the result of the election is the interest displayed by the members of NABET who work for NBC and ABC—more and more time will be spent by our staff and our local unions in this field. But the general membership will receive more attention from now on than has been available in the past few months.

## **Representatives Meet**

We have been planning a conference of your International Representatives, as was contemplated in the report in the last issue. Their time is and has been limited and the meeting had to be set up so as to fit in with their schedules of organization and negotiation. All eight of them who work in the field have been working under extremely tight schedules. We were finally able to settle on February 27th and 28th for this conference.

As this issue goes to press, the Representatives are meeting at the International Office—comparing notes, laying plans for the future and exploring ways and means to better and more efficiently serve you, the members. Since these men come from and work in all parts of the country, I am hopeful that we will be able to get a little closer to the solution of the problem of where and when our national progress meeting will be held. More on this subject in the next issue.

On the somewhat lighter side—but nonetheless important—the mailing lists for THE TECHNICIAN ENGINEER still suffer from the lack of information. Many local unions have not furnished us with mail addresses of their members. Happily, other local unions have sent us lists and, from time to time, have sent supplemental lists and changes. Since our lists are maintained entirely separate and apart from those for the "JOURNAL", there is no possible way for us to get the interested members' addresses unless they are sent to us for the "T-E" magazine. This is a matter that each local union should look into, immediately.

## **Looking for Material**

We are still looking for articles, diagrams and pictures. Budding authors and camera bugs are cordially invited to contribute material for publication. Because you live so close to the forest you may not be able to see the trees—but almost every local has a story about itself, its members and their activities which will be interesting to the members of other locals. Get your press secretary busy—elect or appoint one, if you don't have one—and start blowing your own horn. Let's make the magazine grow and grow and GROW!

Let me close by blowing someone's horn for them. Locals 45, 202, 1212, 1216, 1217, 1220 and 1228 have done an outstanding job on the CBS front. The activity and interest of their officers and the demonstrated loyalty of their members has been invaluable. Running battles with the CIO have been going on in other places, too. Local Union 49 in Portland and Local Union 77 in Seattle are doing fine pieces of work in the Northwest. Local Union 1216 has been battling on a strike front, materially aided by other branches of the trade represented by 160 and 292 and by other A F of L unions affiliated with the Minnesota State Federation of Labor.

While we've grown up, we're still growing—while we're educated, we're still learning. That's progress. We're building steadily on a sound foundation and the product of our work will be a structure of enduring permanence. That's a fact in which we can all take pride this month, this year and in every year to come.

# THE OLD SCHOOL

by James Thurber



(EDITOR'S NOTE: We are indebted to Mr. James Thurber for the article and illustration and to Bill Shudt, Jr., on whose now-defunct CBS program "Going to Press," way back in 1930, it was originally given as a radio talk.)

**W**HENEVER I am to broadcast, which fortunately for everybody concerned, isn't often, I always arrive at the studio anywhere from two hours to 24 hours ahead of time. On this particular occasion I got here yesterday and have been hanging around, resting and practicing and getting in people's way for a whole day and night. This has given me a chance to get quite an insight into the psychology of broadcasters.

There are two schools of broadcasters, the old school and the new school. The new school consists of those men who make broadcasting a career. They take it all very calmly, and *never* arrive 24 hours ahead of time. They arrive at the building about 17 seconds before they are to go on the air, ride up the elevator in a leisurely fashion and reach the microphone just as it is time for them to begin talking, or singing, or playing a steel guitar.

The broadcasters of the old school, however, have not yet learned to take it as a matter of course, and probably never will learn. They sleep very lightly the night before, usually on a davenport in the reception room just outside the studio, and in the morning they call up their friends and say goodbye. These broadcasters labor under the pathetic delusion that somewhere around 75,000,000 people are going to listen to them when they talk. That is sheer egotism, I know that not more than 35,000,000 people are listening to me.

Now, opening off of the big reception room I told you about are some 10 or 12 studios, and you can always find in the reception room anywhere from 10 to two-dozen nervous broadcasters waiting for their hour to strike. Every time an attache of the broadcasting company opens a door and enters the reception room,

from 10 to 20 speakers, cellists, sopranos, and Hawaiian stringed trios leap up and ask him "Is it time for me yet?" This, of course, causes a great deal of confusion among the employes of the place.

It is only fair to say, however, that the speakers cause less trouble than the cellists, because every time a cellist leaps up he takes his cello with him. The cello is a large, clumsy stringed instrument, which is all right in its place, but is very disturbing when it is pushed or thrown at you. If it happens that there are five or six cellists waiting to go on the air and they all leap up at once, you can picture the confusion. It's very easy to get tangled up in a cello. In fact, with the exception of the bass drum and the xylophone, the cello is the most dangerous of all instruments. A cello can throw a man in much the same way that a horse can. This is particularly true if the cello is lying on the floor, and you don't see it. In stepping on the instrument, one may easily be thrown headlong. Stepping on almost any instrument, except a very small cornet, is likely to result, if not in injury, at least a severe nervous shock. Cello shock is, in fact, quite common among people who work in broadcasting studios.

There used to be an even greater menace than stepping on a cello and that was stepping on an accordion. An accordion squeals or shrieks when you step on it, and for this reason is more annoying than a slide trombone, for a slide trombone merely reaches out and snaps at you without making any noise, unless of course someone is lying on the floor blowing in it, but this is very rare. It might be interesting to mention that when an orchestra lies down to play it takes up two and a half times as much space as an orchestra which is sitting upright, and, furthermore, it is always difficult to get some of the instruments, particularly the piano into a position where anyone can play it when he is prone on the floor. For this reason almost all orchestras sit up, or stand, when they play.

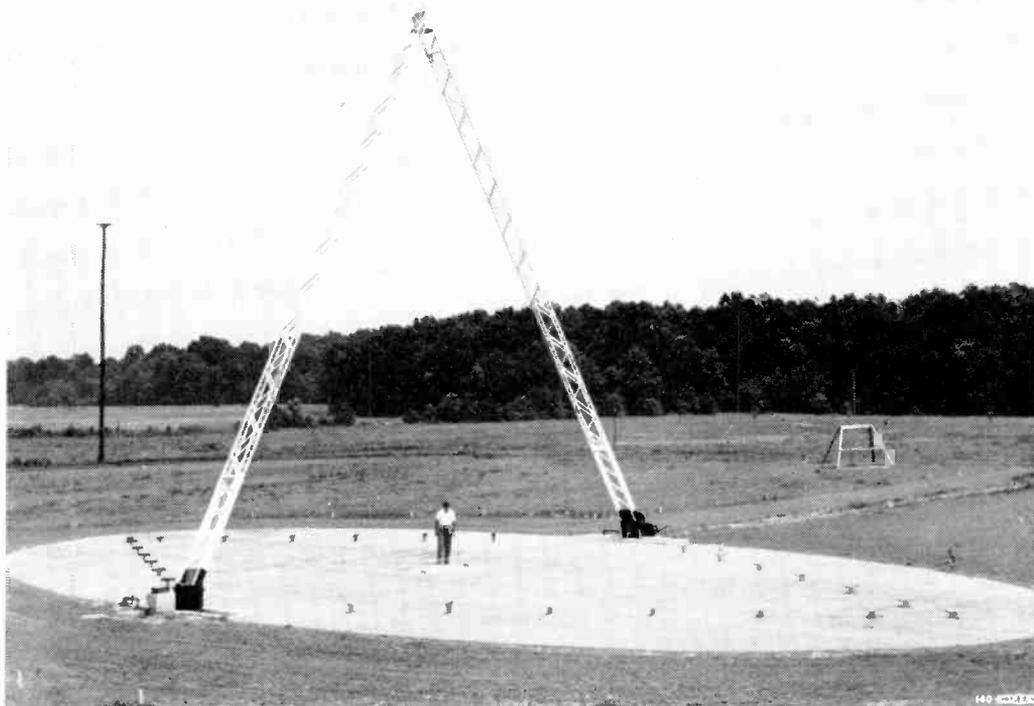
This technical discussion of musical instruments has taken us pretty far afield, but I trust that it has been instructive enough to be worthwhile. It is always nice to be able to tell one instrument from another, and if you are going to play one, it is practically essential.

Broadcasters from out of town often have considerable trouble in finding the studio building, and a few remarks on how to get around town might prove helpful. If, in looking for the broadcasting studio, you should find yourself in a railroad station marked Flushing, it is safe to say you are lost. The thing to do is to keep cool. Don't run around the station shouting that you are lost, because this may set everyone else in the station to running around and shouting that they are lost too. That kind of thing often leads to a panic and somebody is likely to get hurt.

The thing to do is call up some newspaper and say

(Continued on page 14)

With a target transmitter in its inverted-V structure, the range plots radiation in the 1-to-25-mc region while operating between 60 and 1500 mc.



**A**N effective method of measuring antenna radiation patterns in the vertical plane has been developed by the National Bureau of Standards at Washington.

And it doesn't require balloons or aircraft to accomplish its results. Instead, NBS engineers have constructed a complete model antenna range, duplicating to scale all of the factors of a full-sized transmitter and antenna. They have considered all factors of location, atmosphere, and wave lengths, and developed precise formulas for obtaining accurate radiation patterns.

The range is believed to be the largest ever designed for this purpose. It is composed of an inverted "V" type structure which supports a test or target transmitter more than 50 feet above a ground plane. In the center of the ground below, a model antenna is placed for testing.

The range was designed and built under the supervision of H. V. Cottony at the NBS Radio Propagation Station, Sterling, Va.

The antenna investigations are particularly concerned with the high-frequency band from 3 to 30 Mc, in which the major portion of long-distance communication is carried on. At these frequencies the wave length varies between 300 and 30 feet; consequently measurements of full sized antennas would require a site several thousand feet long. This presents a problem when merely ground plane radiation patterns are desired; but, when the pattern in a vertical plane is required, the problem becomes even more complex. Some investigators have utilized free-flight balloons and

## **RADIATION PATTERNS From Scale-Model Range**

aircraft to carry the test or target transmitter aloft, but the results have been only partially satisfactory. The NBS model antenna range was set up to provide a more reliable means for such studies.

The model techniques employed in these studies are similar to those used in the investigation of mechanical, hydraulic, and aerodynamic structures. The principle is known as electrodynamic similitude. As applied to an antenna, an equivalent performance is obtained from a model  $1/n$ th as large as the prototype antenna if its operating frequency is made  $n$  times the prototype frequency. As the model frequency is increased, the free-space wavelength is decreased proportionately, and the distance between the transmitting and the receiving antennas can then be reduced by the same scaling factor,  $n$ . Thus it becomes possible, by using a sufficiently large scaling factor, to mount a target transmitter on a rigid structure, to move it over and about the model antenna under test, and to obtain radiation patterns substantially the same as the true long-distance radiation patterns of a full-scale antenna. (The term "radiation pattern" of the antenna is used here synonymously with the receiving pattern of the antenna. This interchange of terms is justified by the law of reciprocity, which states that the "radiation" and the "reception" patterns of a given antenna are identical.)

The measurement of antenna radiation patterns are very complex, especially when the antenna system is intended for long-distance operation. Several restrictive problems must be overcome before actual transmitting conditions can be simulated. For example, the wavelength intercepted by the antenna to be tested must be essentially plane, and the phase relationship of the voltages induced in it must appear as though the wave had originated at a distance large compared to the size of the antenna. Also, a separation of at least several wavelengths must exist between the target transmitter and the test antenna in order to minimize the surface wave component of the radiated field.

In recognition of these restrictions, a scaling factor of  $60(n=60)$  is employed in many of the applications. Thus, a prototype frequency between 1 and 25 mc is represented by model-transmitter frequencies between 60 and 1500 mc. At these frequencies, it is comparatively easy to arrange a model transmitting-receiving system so that it satisfies both of the previously mentioned limitations.

### Conductivity Multiplied

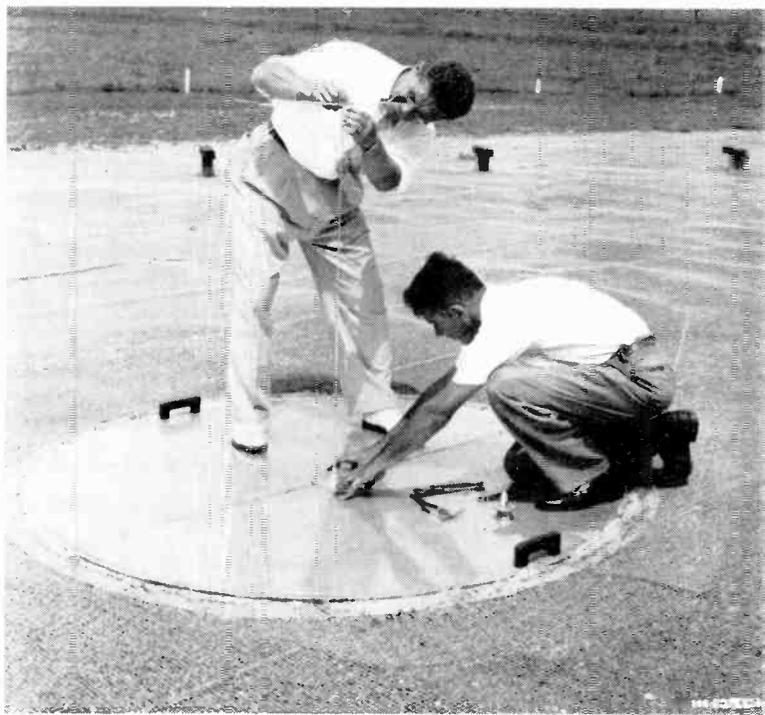
In addition to dividing the physical dimensions of the model by the scaling factor,  $n$ , and multiplying the frequency by the same factor, it is necessary to multiply the conductivity of the antenna and the ground by  $n$ . Fortunately, in most practical HF antennas the copper losses are small, and the conductivity effects may be ignored without introducing any serious error. On the other hand, in considering ground conductivity certain factors must be recognized: in a given location, the conductivity as well as the dielectric constant of the ground varies with weather conditions; and the ground constant varies from one geographical location to another. Consequently, it becomes necessary to specify a "standard ground" for certain operating conditions. Ideally, if different values of scaling factor are to be used, the material forming the ground plane of the model range should be changed so that its conductivity would be that of the "standard ground" corresponding to the new scaling factor. One type of ground which does not require a scaling factor is a perfectly reflecting surface. Communication sites located on salt marshes and over sea water have practically this type of ground. For the purpose of the model range, the problem of scaling the ground was, therefore, resolved by simulating a perfect ground by placing a ground covering consisting of a metal hardware cloth.

The target transmitter is supported by two open-truss beams, each 60 feet in length, fastened together at one end to form a 60-degree angle. The other two ends of the beams are mounted to two horizontal colinear axes located just high enough above the

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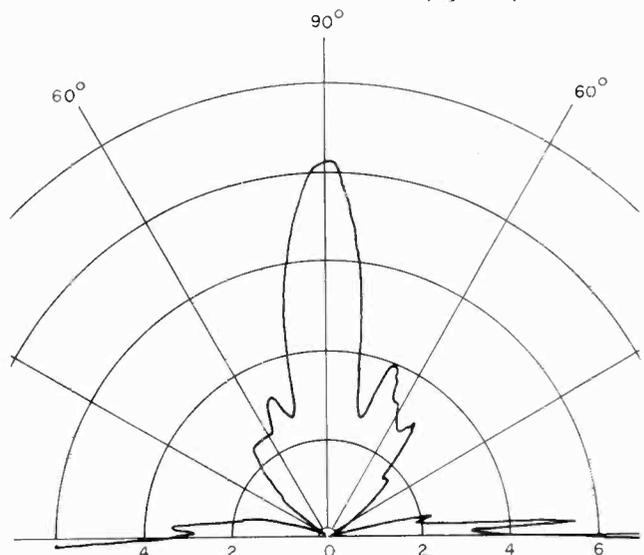


Checking the operating frequency of the target transmitter. Power for this self-contained unit comes from wet-cell batteries.



Above: Adjusting a high-frequency test antenna at the NBS range.

Below: Radiation Pattern from a 5-element yagi array.



# TECHNICAL NOTES

## Trans-Oceanic Television?

Trans-oceanic television may not be far off, Dr. Ernst F. W. Alexanderson, of the General Electric Company's General Engineering Laboratory says, and he offers a method to accomplish it.

Dr. Alexanderson, who helped make possible the first trans-Atlantic radio broadcast 45 years ago, has suggested a method of crossing the ocean with television whereby events in Europe or other foreign countries might be telecast in this country within an hour or two after they take place.

He explained that such events could be recorded on motion picture film and the film then transmitted by radio facsimile to America. When the movies are received here, the film would be processed and televised.

The suggested system was first used by Dr. Alexanderson during early television demonstrations in 1926, in which he slowed down transmission of pictures by facsimile and then by processing the films, speeded them up to motion picture projector rate for television broadcasts.

One of the nation's most prolific inventors, Dr. Alexanderson has a total of 320 patents. Listed among them are the famous "alternator," which gave America its start in the field of radio communication. This high-frequency machine for powerful continuous wave transmission resulted in the first trans-Atlantic radio broadcast on Christmas Eve, 1906. He is also responsible for the development of the first home television receiver, which he demonstrated for the first time in 1926.

## Mobile Television—Army Style

The U. S. Army Signal Corps is adding television to its repertoire and has already staged experimental shows for military classroom instruction.

The Corps announced recently that it was starting experiments with a mobile television system capable of transmitting pictures from relatively remote field activities to military classrooms. It has the equipment to conduct a high-class experiment. Its mobile unit is housed in four special buses, each 31 feet long, which were conceived at the Signal Corps Engineering Laboratories at Fort Monmouth, N. J., and built by RCA. Included in the equipment are three field TV cameras, 10 receivers, a large-screen TV projector which will show life-size pictures, intercommunication radio facilities, power units, and complete microwave transmitting, monitoring, and receiving equipment.

The unit will be based at the Signal Corps Photographic Center at Long Island City, N. Y.

For some time, the Army has been interested in television for its value as an adjunct to training, a Corps spokesman states. Early in 1950 the Signal



The Signal Corps Mobile TV Unit in action.

Corps produced for the Army Field Forces a series of experimental television training programs that were broadcast by a commercial network. The programs were aimed primarily at the Organized Reserve Corps and the National Guard.

The mobile unit will be used extremely to investigate its tactical possibilities—piping pictures of field maneuvers to observers and umpires. Signal Corps engineers are studying the possibility of its use in actual wartime communications and command.

## Patent for Push-Button Scents

About a year ago Emery I. Stern of Jackson Heights, N. Y., received Patent No. 2,540,144 for a device by which television viewers would receive "appropriate scents" along with the picture and sound.

The device will "automatically release predetermined scents at predetermined phases of the action," the inventor stated. The appropriate odors will be released from containers at the receiver by light signals accompanying the radio waves.

Substances to provide various odors are added to a harmless gas and put in containers at the television receivers. The light signals sent from the broadcast station will be of different frequencies, each frequency attuned to release the gas and odor from a particular container. The pressure of the gas will disperse the scent through the room.

The whole idea is intriguing, and we are still waiting anxiously for some manufacturer to take it up and demonstrate.

*(Continued next page)*

## ONE MOMENT, PLEASE . . .



Those little red lights which indicate when a TV camera is "taking" have frequently been a mental hazard for cameramen. Recently, a new man on the job at NBC found them downright exasperating.

During a tense moment in a dramatic show he was panning, he looked up from his finder and suddenly noticed an extra red gleam, where there should be only one. He counted again, and there was still one too many.

Quietly he slipped to his hands and knees to investigate—then found himself face to face with a mirror on the set. The sneak crawl and the cameraman's startled discovery were all faithfully recorded over the air.

**EDITOR'S NOTE:** Every station has its own tales of last-minute were . . . unexpected breaks of silence . . . listener complaints . . . and the like. Send them to the **TECHNICIAN-ENGINEER**. We'd like to have the best illustrated and passed on to the membership. Send your humorous items to One Moment Please, **THE IBEW TECHNICIAN-ENGINEER**, International Brotherhood of Electrical Workers, 1200 Fifteenth St., N. W., Washington, D. C.

## THE OLD SCHOOL

(Continued from page 10)

"I am lost." The newspaper will tell you that they are very sorry but that they can't print a story about you being lost, unless you happen to be an old lady aged 119 or the six-year-old heir to a great fortune, or unless you have been riding around on the subway for three days and nights without getting off. This is known as human interest, and the average lost person is of course not of any human interest at all.

## TECHNICAL NOTES

(Continued from page 13)

Here are a few of its possibilities:

• A special pre-mealtime appetizer just after Howdy-Doody, with the network engineers pressing fried chicken and ice cream buttons, encouraging the youngsters to hurry to the kitchen table (It might be tough getting sponsors for the next 15 minutes.)

• You might have the smell of cherry blossoms for a travelogue on Washington in the spring; the scent of orange blossoms at the Orange Bowl football game, and appropriate stable smells for the Cisco Kid leading his horse to the stall.

• But what will happen if an engineer monitoring a wrestling match presses the perfume button by mistake? Then, realizing his error, stumbles over bourbon and honey buttons, causing the receiver audience to be vaporized with a compound chemical formula of  $c$  over 2 minus  $x$  under  $Ch$  to the 10th power?

## RADIATION PATTERNS

(Continued from page 12)

ground to permit a 180-degree movement of the structure. In the vertical position, the structure resembles a giant inverted "V." The structure is counter-weighted so that it requires very little power to move it through its path. The target transmitted is fitted into the vertex of the inverted V, and the model antenna is located at the center of the ground plane.

The radio energy intercepted by the model antenna is rectified and the signal voltage is transmitted along underground cables to a recording pen attached to an automatic pattern plotter. Synchrogenerators, connected to the axis of the V-frame, transmit its position to the turntable of the pattern plotter. Thus an automatic record of the radiation pattern is plotted as a function of the angular displacement of the transmitter moving above the antenna. All of the recording equipment is located in a shelter 200 feet from the antenna site.

A series of target transmitters which derive their operating power from small storage batteries within the unit are employed. This obviates the necessity of using connecting cables and wires which could reflect or otherwise disturb the radiated field. To prevent reflections that would be setup by a conducting material, the truss beams forming the V-frame are made of nonconducting hard plywood. Except at the base, all joints are sealed by synthetic resin glue; the structure is painted with white lead. The frame, with the exception of the counterweights, is comparatively light, and its maximum deflection due to its own weight is approximately 0.5 degree about the center of the range.

## West Coast Bargaining Brings Raises, Benefits at 5 Stations

Five IBEW contract negotiations were settled amicably in the San Francisco-Oakland area last month.

KECC, Pittsburg, Calif., went off the air for several hours following a strike of its three-man engineering staff. The men walked off shortly before noon, and, that evening, management personnel tried to handle the station operation. By morning management agreed to recognize IBEW Local 202 as bargaining agent, and the strike was called off.

Local 202, meanwhile, settled four other contract negotiations. Contracts with wage increases were signed by KYA and KJBS, San Francisco, and KROW and KLX, Oakland.

At KJBS the engineer-combination men won \$10 weekly raises, bringing their scale to \$115. KYA and KROW won \$7.50 weekly raises, bringing the KYA scale (for a 5 kw station) to \$112.50 and the KROW scale (a 1-kw station) to \$105. KXL engineers also got a \$7.50 weekly increase, and management agreed that when the station goes from its present 1 kw to 5 kw power, as planned, the engineers' scale would automatically be raised to the prevailing level for that power.

However, the increases at all stations will not be granted in lump sums but must come as cost-of-living raises based on the bi-annual Bureau of Labor Statistics Index. Because of this, the engineers will receive less than half of their increase immediately. The current index allows them only a 2.9 per cent increase, retroactive to November 1. They will be eligible for a second increase on May 1, equal to the cost-of-living rise but not exceeding the total of the wage increases agreed to in negotiations.

Local 202 also won health and welfare insurance benefits, the premiums to be paid by the stations.

Leading the way in these West Coast negotiations were Jack Dunn, business agent for Local 202, and Marvin L. Larsen, IBEW International representative.

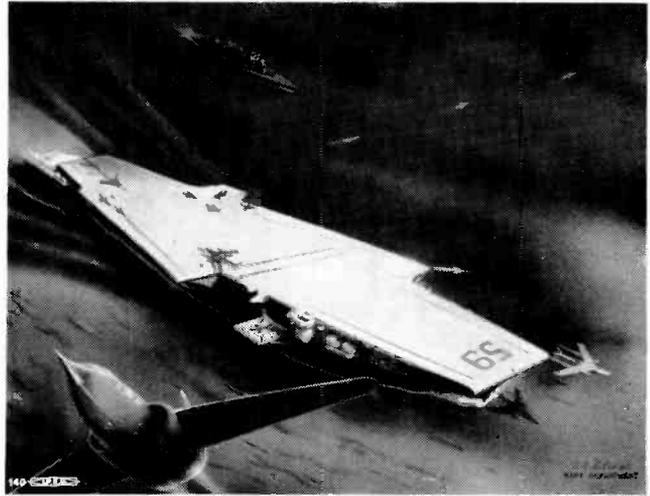
## Westinghouse to Sponsor Political Coverage over CBS

Westinghouse Electric Corp. has signed for a package sponsorship deal with CBS which calls for full nationwide coverage of both political party conventions in Chicago, a 13-week non-partisan "Get-Out-the-Vote" campaign, and election returns the night of November 4.

Engineers at the hundred largest population areas covered by the CBS network will hook up this first national TV convention coverage.

The 13-week "Get-Out-the-Vote" campaign will start in August and continue until the night before the election. It will offer equal time to both major parties.

## Landings by Television



The Navy's super aircraft carrier, the Forrestal (CVB-59), which will take three years to complete, will use a secret television system to help planes land on its flush deck. The Navy has disclosed that the vessel's huge flight deck will handle many types of planes, including those capable of carrying atomic bombs. The 59,000-ton ship will cruise at 30 knots.

J. M. McKibbin, Westinghouse vice-president, says his company has planned this comprehensive program "to help produce the biggest turnout of well-informed voters in the history of American elections."

Elaborate plans have been made for coverage of the conventions in the International Amphitheater in Chicago, the Republican convention beginning July 7 and the Democratic convention July 21. There will be a minimum of 20 hours of coverage of each convention by both CBS TV and CBS radio.

In general, the Westinghouse-sponsored convention programs will embrace five types of TV shows:

- All important events from the convention floor will be televised with accompanying analysis from the CBS studios in the International Amphitheater.

- Commentary, interview, and discussion programs will be originated in the convention hall.

- Special events coverage in the Chicago area will be handled by on-the-spot mobile CBS television crews at press conferences, demonstrations, candidates' headquarters, and other events of high interest to viewers.

- On the Sunday night before each convention, viewers will be acquainted with on-the-ground conditions at the convention site by means of special programs.

- Human interest shows built around candidates' wives, delegates, party officials and technicians at the convention hall. This will include daytime programs designed for women's audiences.

Radio coverage will include the use of many different studios in various locations, mobile transmitters, and walkie-talkies from the convention floor. A staff of approximately 200 people will handle the coverage.

# Station Breaks



## **Please Speak Louder, Young Man!**

Union engineers at Radio Station KNCM, Moberly, Mo., have developed a hobby of collecting unusual letters from listeners. The prize for 1951 went to Si Willing, an announcer, who happily exhibited a postcard from an elderly lady who asked him to speak louder on his program, because the battery on her radio was very weak.

## **More Engineers for the IBEW Ranks**

There is still a large potential IBEW membership in our industry. More than 3,000 radio, FM, and TV stations are now operating in the United States. The Federal Communications Commission records a total of more than 20,000 engineers employed by both network and independent stations.

## **Canada to Produce Components**

Calling 1952 "another year of progress" for Canadian industries, the Canadian Minister of Trade and Commerce and of Defense Production, Mr. C. D. Howe, reported recently that Canada, during the current year, will be producing such electronic components as tubes, condensers, and resistors. He promised that Canadian engineers will be learning new techniques in the wire assembly of electronic equipment that will be useful in the television and telecommunications field.

## **Lower TV Channels Have Range**

Long-range reception of television during 1951, normally within a 50-mile radius, was better between channels 2 and 6 than for 7 and above, according to *Radio-Electronics Magazine*.

Peak reception months were May through July, with a high in June, and with minor peaks in December and January. Some of the reception reports had the signals going a thousand miles or more.

## **Moves to Boss' Chair**

A member of IBEW Local 49, Portland, Oreg., will take over the boss' desk now. Rodney F. Johnson, an engineer at KWJJ, Portland, has bought the sta-

tion from Wilbur J. Jerman for a reported \$200,000. FCC has approved the sale . . . Johnson is also owner of the Rex Recording Co., Portland.

## **More Stations Join Liberty**

Two radio stations with IBEW agreements have joined the Liberty System. LBS has announced the adding of five stations to its string of 448 in the U. S., Alaska, and Hawaii. Two of the five have IBEW engineers—KOME, Tulsa, in agreement with Local 1287, and WPEO, Peoria, Ill., a Local 1292-staffed station.

## **March is FM Month for D. C.**

IBEW Engineers working the boards and handling the other facets of FM broadcasting in the District of Columbia will get a boost of public support this month. March has been declared FM Month in Washington. IBEW Local 1215 has members at WTOP-FM, WARL-FM (Arlington, Va., across the Potomac), WWDC-FM, WOL-FM, and WCFM.

## **NLRB Volume Available**

Volume 93 of decisions and orders of the National Labor Relations Board is now available for purchase from the Government Printing Office.

The new volume, priced at \$4.50, covers the period from February 2, 1951, to April 24, 1951. Orders should be addressed to: Superintendent of Documents, Government Printing Office, Washington 25, D. C., accompanied by cash, check or money-order.

## **Early-Birds at WBAP-TV**

The chief engineer at WBBM, Chicago, George Sherman, has transferred to CBS Radio in New York. He will manage tape operations at the network center.

## **WBBM Chief to CBS**

Local 1234 engineers on the staff of WBAP-TV, Fort Worth, Tex., have added a half hour to their daily stint, starting programming at 9:50 each morning. The station is now on the air 95 hours a week.

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