

# **RADIO, TV and RECORDING** **TECHNICIAN-ENGINEER**



FEBRUARY, 1956



# RADIO, TV and RECORDING TECHNICIAN-ENGINEER

VOLUME 5 17 NUMBER 2

PRINTED ON UNION MADE PAPER

## The INTERNATIONAL BROTHERHOOD of ELECTRICAL WORKERS

GORDON M. FREEMAN International President  
JOSEPH D. KEENAN International Secretary  
FRED B. IRWIN International Treasurer

ALBERT O. HARDY

Editor, Technician-Engineer

## ... in this issue

<i>Pacific Telephone and Telegraph Agreement</i> .....	3
<i>The FCC Annual Report</i> .....	4
<i>The World Is Operating on a New Second</i> .....	5
<i>Progress Meeting Announcement</i> ..	6
<i>Human Problems of Automation</i> ..	7
<i>Questions and Answers on Coronary Ailments</i> .....	8
<i>Your Role with COPE</i> .....	11
<i>Radio Frequency Lamp Shines Brightly</i> .....	12
<i>Technical Notes</i> .....	14
<i>Station Breaks</i> .....	16

## ... the cover

Norman Woods, engineer with Radio Station WWDC, Washington, D. C., measures distortion on audio equipment in the station workshop. A member of IBEW Local 1215, Woods is a member of a 14-man IBEW crew which mans the 24-hour AM-FM operation. WWDC is the Mutual outlet in the nation's capital. It originates many news and public events programs for the Mutual net. The station combined most of its studio and transmitter operations last year, moving to a 29½ acre site in suburban Maryland.

## commentary

Professor A. G. Conrad of Yale University says: "In 1900 the horsepower per worker installed in U. S. factories was 2.5. By 1950 it had risen to 7.5. Evaluating a unit of horsepower as equivalent to ten times the power of a man, the average factory worker is now supported by the energy equivalent of 75 slaves. This is progress through engineering. During the past century man has increased the available power to the individual by a ratio of 100. He has increased the speed of communication by a ratio of 30 million. He can send a message around the world seven times a second. Unfortunately, it sometimes requires years to get this same information from the outside to the inside of a human skull. Over the last hundred years man has increased the speed of transportation 50 fold. He has increased his speed in making mathematical computations by a ratio of 25,000. The use of power in the world today is no longer secondary to the problems of food and shelter. Without power, to state a plain fact, the necessary food and shelter could not be provided."—*From the Phelps-Roberts Washington News Letter.*

## the index . . .

For the benefit of local unions needing such information in negotiations and planning, here are the latest figures for the cost-of-living index, compared with the 1954 figures:  
December, 1955—114.7 December, 1954—114.3

Published monthly by the International Brotherhood of Electrical Workers, AFL-CIO, 1200 Fifteenth St., N. W., Washington, D. C., for the men and women in the recording, radio and television industries. Entered February 20, 1952, as second-class matter at Washington, D. C., under Act of August 24, 1912. Subscription Price: U. S. and Canada, \$2 per year, in advance.

# West Coast Repeatermen And Toll Test Men *Successful After*

- 3 Years of Waiting
- 33 Bargaining Sessions
- Unfair Labor Practice Charges
- Injunctions and Diversions

**I**BEW Local Union 1011, representing the repeatermen and toll test men for the Pacific Tel. & Tel., reached an agreement with the company, an affiliate of A. T. & T., three years to the day from the time the agreement was opened for negotiation.

This group is well known to the broadcast men on the Pacific Coast, as this is the only place that they exist, but their counterpart, employed directly by A. T. & T., services the broadcast circuits in other parts of the country.

Local Union 1011 unit covers the entire Pacific Tel. & Tel. and Bell Telephone of Nevada. It is broken down into three units, one covering California and Nevada, the second Oregon, and the third Washington and the panhandle of Idaho.

The three years from the opening to the closing of an agreement is not only a record in time spent in negotiating a contract, but probably a record of maneuvering by an employer to destroy a union. However, the company was unsuccessful, and the local union probably established a record of its own by maintaining its organization at approximately the same strength it had when negotiations opened.

This was in spite of the fact that, first, the payroll deduction for union dues was cancelled by the company. This meant that the union had to set up machinery to collect the dues over the five states by shop stewards and direct pay.

Next the company cancelled its contract, and refused to process any grievances for a period of one year.

Then the company signed an agreement with a rival union (CWA), covering this group without benefit of bargaining! Still the members remained loyal to their organization, and as far as the officers know, there wasn't a single member who deserted the IBEW and went over to the rival camp.

There was much legal litigation to be resolved, including unfair labor practice charges against the company; injunctions by the NLRB appealed by the company to higher courts, and appeals by the company from

NLRB decisions—and, of course, countering appeals and legal action by the local union.

Maybe the people that are now faced with "right to starve" laws could take a leaf from this book. . . . The Washington and Idaho group probably was the outstanding example. There were five non-members in the area on February 2, 1953. Three years later to the day—February 2, 1956, the first agreement was reached by this unit and P. T. & T. Over this time, the company nearly doubled its force. Many of the members had been promoted to supervisory positions outside of the unit, and yet without benefit of contract or any recognition by the company, the local union maintained its organization and still had exactly *five* non-members in the area!

The Oregon and California-Nevada units more than maintained their membership in numbers, but did not equal the splendid record of the Washington and Idaho group.

The final NLRB action, preceding negotiations, issued in September, 1955. The Board, at that time, ordered the company to bargain with the union. (This is an oversimplification of the prolonged litigation, but the details are now unimportant.) (See September 1955, issue of the *TECHNICIAN-ENGINEER*, Page 9.)

It became necessary many times during the subsequent negotiations for the company to be reminded that it must have been 'way off base, because even the present, prejudiced NLRB upheld the union's position in the final decision.

After 33 sessions, carried on in three different states, three separate agreements were signed, one covering each of the units. This was one of the tragedies of the litigation: Three units were ordered, where the union had asked to consolidate the units. The company resisted, and where, before, the company had signed one agreement covering the three units, it now refused to bargain system-wide. This resulted in splitting the local union jurisdiction into three areas.

Negotiations were carried on on a high plane, al-

though there was much bitterness detected on both sides, and it appeared many times during the 33 sessions of negotiation that a third party would have to be called in in order to reach agreement.

The final agreement was reached at 4:15 a. m., after 15 continuous hours of negotiations in Portland, Oreg. During this session both sides had packed up their papers on a number of occasions and started to break off negotiations.

But despite all of this bitterness, and despite all that the company had done to liquidate this group of IBEW members, every member of the negotiating committee expressed himself before the company representatives, and said that he was not satisfied with the agreement; union participants still believed the company had negotiated from power and not from fairness, but notwithstanding this, they were going to recommend that the

agreement be accepted, and that they were going to do everything in their power to see that the agreement worked well.

Even to the final conclusion of this bitter struggle, the officers and members of the local union equaled the occasion, and were willing to give the company every reasonable opportunity to prove that it was wrong in accusing the union of wanting to deteriorate industrial relations in place of improving them.

There are many things to be said concerning the many problems that this band of IBEW members face, but we will reserve them for a future article.

There were so many people responsible for carrying on this successful fight, and we wish we could name them all. But knowing that we'd overlook someone at this time, we will just call them the officers, stewards, and committeemen of Local Union 1011.

## FCC Annual Report Shows Broadcast Growth

More than 90 Per Cent of Nation Now in Range of a Television Station

**A**T long last, the Federal Communications Commission Report for 1955 has been issued and printed. The Report, directed to the Congress of the United States, is the twenty-first and is a summary of Commission activity to the end of the fiscal year ending June 30, 1955. Chairman McConaughy transmitted the report by letter and noted in the letter of transmittal that it includes notations of developments subsequent to the close of the fiscal year, up to press time.

Some striking statistics are shown by the Report. For example, the Commission now has more than 1,400,000 authorizations in the field—an increase of some 200,000 since last year. These authorizations represent about 60 different kinds of land, sea and air radio services, as well as the operators who man approximately 300,000 transmitters involved. More than 1,100,000 radio operator licenses and permits are outstanding; more than 986,000 commercial and 136,000 amateur. Broadcast authorizations, for the first time, passed the 6,000 mark. More than 4,000 were for program outlets and the remainder were comprised of relay and link facilities.

The Report states that with 582 authorized commercial TV stations (458 of them on the air), over 90 per cent of the people of the country were within the service range of at least one station and about 75 per cent were served by two or more stations.

One hundred and forty-three new AM stations were authorized—making a total of 2,732 on the air, with 2,840 authorizations outstanding. FM continued to lose ground, from the standpoint of permits and licenses, since 552 were authorized and 540 were in actual oper-

ation. However, educational FM stations registered a gain during the fiscal year; 124 were operating—7 more than during 1954—of the 127 authorizations.

The Field Engineering and Monitoring Bureau continued to operate 10 primary and 8 secondary monitoring stations, among its many functions. Station inspections declined, compared with 1954, with a total of 4,202 inspections having been made of stations other than those in the broadcast and ship category. However, 661 broadcast station inspections were made during 1955 and 309 discrepancies were noted—as compared to 533 inspections and 181 discrepancies in 1954. Even with the 1955 increase in broadcast station inspections, the number of inspections taken together with the ever-increasing number of stations on the air present serious problems to the Commission. Personnel and budget limitations are thus emphasized by each succeeding annual report.

The Report covers the whole of the Commission's activities—it indicates that radio's use now extends "from the cradle to the grave." The effect of radio frequencies upon the populace can be gathered from the Report—mobile telephone and diathermy equipment is a part of the health and medical services rendered to Mr. Average Citizen; the Safety and Special Radio Services, Common Carrier Services and even the Research and Laboratory Services are related to the public interest.

The Report makes interesting reading—commended to your attention. Copies are available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at 50 cents each.



## The World Is Operating on a New Second

**T**HE basic bit of time isn't what it used to be. Astronomers have given the second a new length.

"Just a second . . ." you say, as you look at the studio clock. What is a second? A blink of an eye, a flick of time. The steady tick . . . tick . . . tick of a watch. Surer than death or taxes, the seconds go by.

Yet in 1956 the most fleeting dimension of everyday life will be slightly changed from what it was in 1955, the National Geographic Society reports.

Exactly stated, a second now is 1/31,556,925.97474th part of a year—a particular year that went by more than half a century ago.

The old familiar second was defined as 1/86,400th of a day, measured by timing the revolution of the earth. Most of the world's clocks still will tick away these seconds. But scientists who split the second into bits as small as billionths will henceforth work with a new time scale.

The trouble with the old humdrum second is that it won't stay the same length.

Day by day, world time is checked by observatories whose extremely accurate instruments mark how long it takes the earth to turn once on its axis. No clock or watch yet made can match the precision with which the planet revolves.

Even so, the earth doesn't turn at an exact and changeless rate. Early in each year it spins more slowly than it does toward the end of the year. Its rate wobbles over longer periods, too—as much as 30 seconds in 200 years. And very gradually, the earth is slowing down.

As it slows, the day lengthens slightly, and thus also

the hour, minute, and second. This change is so slight that even over 2,000 years it has amounted to only a few hours, but scientists must allow for it.

So long as time was measured by sundial, pendulum, or mechanical clocks, the planet's eccentric spinning was of little consequence. But for astronomers studying other bodies in the heavens, and for engineers working with speeds of light and electrons, the fluctuating second has caused more and more trouble.

Some years ago the International Bureau of Weights and Measures in Paris, world guardian of standards of length, weight, and time, decided the problem had become crucial. It began formulating a new second.

Late in August, 1955, the International Astronomical Union met in general assembly in Dublin. It approved a new definition of the second for world-wide use, the final outcome of a long series of meetings.

The new second is based not on the turning earth, but on the time it takes the sun to pass from vernal equinox across the skies and back to vernal equinox as the earth swings once around its home star in a year.

This is the "tropical year" of astronomers, the year of the seasons. It is similar, but not quite the same, as the "sidereal year," which is the actual time it takes the earth to follow its orbit around the sun. The tropical year is about 20 minutes shorter.

It was necessary, finally, to choose a particular tropical year as a master yardstick. For various reasons, including more accurate measurement, the tropical year for 1900 was chosen—new guide for the most nearly accurate time yet kept by man.

# *Annual Radio-Television-Recording* **PROGRESS MEETING**

MIAMI BEACH, FLORIDA • MAY 11, 12, 13, 1956

## EUROPEAN PLAN

\$6 Per Day,  
Single

\$7 Per Day,  
Double



THE MONTE CARLO HOTEL, OCEANFRONT AT 65th STREET

## AMERICAN PLAN

\$9 Per Day,  
Single

\$12 Per Day,  
Double

It'll soon be time, once again, for the annual progress meeting of the radio, television and recording engineers of the International Brotherhood of Electrical Workers. This year's session is scheduled for picturesque, relaxing Miami Beach. A full agenda of discussions and events is being drawn up. Registration information has been mailed to all local unions. This is a meeting your local officers and delegates should not miss.

**THIS IS YOUR MEETING • YOU SHOULD BE REPRESENTED**

# The Human Problems Resulting from Increased Automation Are Most Important, Says Keenan

IBEW Secretary Tells Delegates to Two-day Los Angeles  
Conference that Re-employment Guarantees are Needed



SECRETARY KEENAN

**A**CCCEPTANCE by union workers of automation will depend in great measure on the steps taken by industry and government to solve the problems of unemployment and industrial dislocations created by introduction of automatic machinery.

This was the point given the most stress by speakers at a two-day conference on automation co-sponsored by Los Angeles State College and the Central Labor Union and Industrial Union Council of the metropolitan area.

More than 450 AFL-CIO unionists from a variety of industries took a long look at the situation developing from the rapidly increasing trend toward automation.

## Income Security

Emphasis was also laid on the need to provide workers with income security and a share in benefits accruing from automation, the necessity for organization of engineers, technicians and white collar workers as factory employees are displaced by machines and the imperative need for keeping union leadership and membership fully informed so they may "roll with the punch" as the impact of automation increases.

The featured speakers were President Joseph A. Beirne of the Communications Workers, Secretary Joseph D. Keenan of the Brotherhood of Electrical Workers, and General Vice President Roy M. Brown of the Machinists. Dr. John A. Morton, dean of educational services at the college, was chairman.

Automation, Keenan reported, "will, by its very nature, involve a substantial displacement of labor in those industries in which it is introduced."

There is no guarantee, he continued, "that by the operation of some unseen hand or natural law, the jobs eliminated by the new technology will be automatically matched by an equivalent expansion either of total production in the automated industries or of employment opportunities in other industries and trades."

## Service of Mankind

It is not safe to assume, Keenan said, "as some in the ranks of management appear to maintain, that the job problem will simply take care of itself if left alone."

The end of technology is the service of mankind and industry exists for the ultimate benefit of human beings. It follows therefore, that the human problems associated

with automation are far more important than the merely technical ones, Keenan said.

"The instrument of collective bargaining together with an enlightened attitude on the part of management, are vital to the constructive solution of those problems, he said.

Keenan said there was no better method than the negotiation of wage increases to match improvements in productivity to assure that benefits from improved technology and efficiency are shared by workers and consumers.

## Attitude Important

Beirne made clear the position of most unions that they do not at present oppose automation, that in fact, they welcome it; that they believe in the fullest possible development and expansion of the introduction of machines to replace human effort and they think the ingenuity of man and his imagination make automation inevitable and desirable.

"There is no doubt," Beirne said, "that in the future we can employ such practices as the 30-hour workweek, improvements in pension plans, etc., to minimize negative long-run effects of automation. . . . The attitudes of the public, government, management, unions, education institutions and, of course, the workers themselves, are most important. The snowballing effects of a few million unemployed or a few dozen labor surplus areas must never be underestimated."

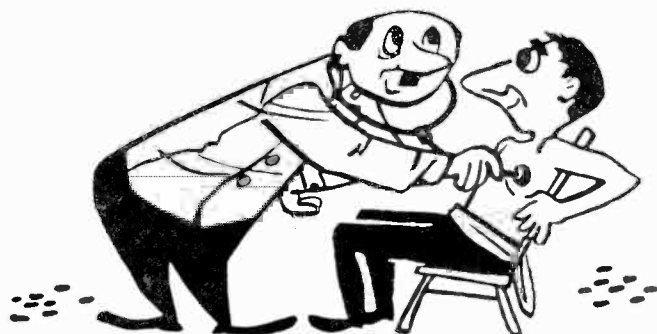
Labor hopes, Beirne added, "that as job opportunities disappear in certain industries, management will be receptive to the kind of corrective devices which labor unions have been advocating for many years. Nation-wide industries should embrace the idea of company-paid-for transfers.

"Multi-departmental industries should enthusiastically commence job retraining programs wherever a machine makes certain skills obsolete. Workers themselves must not resist job retraining or geographical transfers. They must use their energies and influence to place governmental and educational resources behind corrective programs."—*From the AFL-CIO News.*

# Questions and Answers

## on Coronary Ailments

February Is Heart Fund Month. The American Heart Association Is Reminding You that You Can Have a Long and Productive Life, If You Obey Certain Health Rules



### 1. What is coronary heart disease?

Coronary heart disease results from hardening or narrowing (arteriosclerosis) of the coronary arteries, which supply the heart muscle with blood.

### 2. Are men or women the more likely to develop coronary heart disease?

It is much more common in men up to the age of 50 and remains more frequent up to 70.

### 3. Do people who have coronary heart disease die suddenly?

Although sudden death is more frequent in coronary heart disease than in any other form, its occurrence even in this type of heart disease is uncommon. About 70 per cent or more of the people who suffer heart attacks survive them—very often into and beyond their normal life expectancy.

### 4. What is coronary thrombosis?

It consists of the blockage of a coronary artery or of one or more of its branches by the formation of a clot which develops on a thickened or roughened area in the lining of the vessel. Fatty deposits thicken the walls and narrow the channel of the artery or branch, reducing

the flow of blood to the heart. Blood clots readily when the circulation is slowed and eventually results in a heart attack.

### 5. What determines the severity and seriousness of a heart attack?

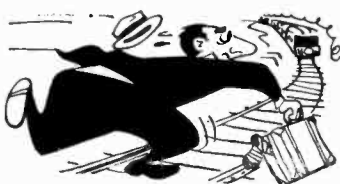
This depends largely on where the obstruction occurs. If only a tiny branch of an artery is blocked, the attack may not be severe. If the main trunk is affected, the attack will be severe and may be fatal.

### 6. Does this mean that nothing can be done to minimize the effects of a heart attack?

No. While we cannot know immediately how severe the involvement in many instances rest, pain relief and other medical treatment prescribed by the physician will permit the heart to maintain its function until healing takes place.

### 7. What can the individual do, before the doctor arrives, to help a person who suffers a heart attack?

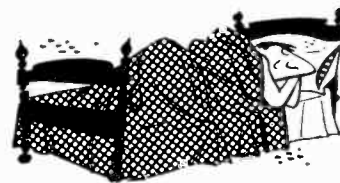
The victim of a heart attack should be kept quiet in whatever position is most comfortable. He should be given all possible reassurance, since heart attacks are often accompanied by extreme fear and apprehension.



Exercise in moderation, particularly if over forty. Strenuous activity will not harm a healthy heart. But danger is real if heart is diseased.



Worrying cures or prevents nothing. Don't be guided by old wives' tales. Know the facts about heart disease and your own heart.



Get the amount of sleep you know you require. Your heart works around the clock for you. When you rest or sleep its work load is lightened.

**8. Is every heart attack painful?**

There are occasional cases in which pain is entirely absent. In these, the most common symptoms are sudden weakness or collapse, or sudden intense shortness of breath.

**9. After a heart attack, what is the critical stage?**

When serious or fatal complications develop, they occur most commonly during the first 10 to 14 days after a heart attack. Patients who survive for three weeks almost always recover satisfactorily.

**10. Will the heart muscle heal with care and treatment so that a person may resume normal activities?**

Yes. In most cases normal activities can be resumed within a year; in many cases, earlier.

**11. How does the heart function after an attack?**

A portion of the area of heart muscle which has been deprived of its blood supply may lose its power to contract, and die. The remainder of the heart muscle continues to function as before. The dead muscle fibers are replaced gradually by scar tissue.

**12. Can an operation help patients who have coronary heart disease?**

Recent surgical procedures along the line of introducing a new blood supply to the heart wall muscle appear to offer promise but further study is required to judge their effectiveness.

**13. If one has heart disease, what rules can be followed in living with such a condition?**

The most important rule is to live a life of moderation, to obtain peace of mind and the amount of rest required by an ailing heart. It is also important to have proper medical attention and follow the doctor's orders.

**14. What causes coronary heart disease?**

This is one of the foremost enigmas of modern medicine. However, a number of leads are being pursued. Through research in hormones, biochemists are trying to find the abnormal chemical processes which permit fatty deposits to accumulate in the artery walls. It is also thought that the diet plays an important role, since the disease rarely occurs in areas of the world such as China, where little fat is consumed. Another factor may be the stresses and strains of life, as heart attacks occur most frequently among people who are under constant nervous tension. Other diseases that damage the arteries, such as high blood pressure, also may help cause coronary ailments.

**15. What progress has been made in diagnosis and treatment?**

A great deal. With the electro-cardiogram, physicians can now find evidence of relatively mild and clinically unrecognizable heart attacks that have occurred. Treatment has been aided by anti-coagulant drugs, which minimize the tendency of blood clots to develop.

**FEBRUARY, 1956**



Participants in station-union negotiations were, left to right, Tom Mussatt, president of Local 1292; Milton D. Friedland, WICS station manager, and Joseph Hodges, assistant director of the Illinois Department of Labor.

## Illinois TV Station Now IBEW Engineered

Local 1292, Peoria, Ill., recently entered into an agreement with Television Station WICS at Springfield which established an eight-hour day and a five-day week. On a second balloting, last year, WICS became a 100 per cent IBEW-engineered operation.

The contract entered into by the union and the station terminates a dispute of long standing over representation of technicians working with electronic equipment at the TV station.

In a representation election held by the NLRB in July, 1954, the ballots cast by WICS employees resulted in a tie vote—one half electing to be represented by the International Brotherhood of Electrical Workers and one half voting "no union." Under this twilight condition, whereby recognition and collective bargaining were neither prohibited nor assured, no agreement could be reached by the company and union representatives.

A subsequent election held by the Board in 1955, in which a 100 per cent vote for union representation was cast, cleared the way for the negotiation of an agreement by the two parties.

Joseph Hodges of the Illinois Department of Labor assisted the union in a peaceful settlement of the issues involved. He intervened in the negotiations at the request of the local union when it appeared that a work stoppage could not be avoided.

Noteworthy improvements in working conditions which the new agreement assures are the establishment of the eight-hour day and the five-day week. The scale agreed to represented an average five-dollar increase for the men involved. Shifts and schedules were regularized in the agreement, Robert K. Pratt, Local 1292 business manager, states.

## One Moment Please



Radio Station WNNJ, Newton, N. J., was chewed off the air for two hours recently by the station mascot, a dog named Honey.

Honey crawled around under the station building, gnawed through the cable which connects the studio to the transmitter, and thereby started studio technicians on a mad search for the break.

Once the station was back on the air, the engineers looked down at their mascot and wondered whether she was hungry or just expressing criticism of the station's air fare.

## What Happened to Wages in 1955?

According to the Bureau of National Affairs, Inc., most wage negotiations in 1955 resulted in substantially larger increases, on the average, than in 1954. Additionally, many more agreements made provision for future wage increases and there was a strong emphasis on fringe benefits.

The median increase amounted to 7.9 cents last year—compared to 6.1 cents in 1954. The upward trend is shown by the fact that the median figures rose from quarter to quarter throughout 1955. Settlements without a general wage increase were down from 1954 by 40 per cent. Only two agreements, according to *BNA*, one in apparel and the other in iron and steel, provided for a *decrease*.

As to fringe benefits, the frequency of insurance benefits rose only fractionally from the 1954 level—from 26 to 27 per cent—but pension plans rose substantially from 1954—reaching a figure of 11 per cent.

Based upon 4,329 agreements analyzed by *BNA*, in 18 manufacturing businesses and 8 non-manufacturing lines, wage increases of 4 to 6 cents per hour occurred in 34 per cent, 7 to 9 cents were provided for in 25 per

cent and 10- to 12-cent increases were noted in 18 per cent of the agreements. Eight per cent of the agreements provided for increases of 13 to 15 cents per hour and 4 per cent of the agreements featured increases of more than 15 cents.

## Local 253 President Dies in Birmingham

At press time we were advised of the passing of Brother C. M. Baker, Sr., at his home in Birmingham. Brother Baker was currently the president of Local Union 253 and was well known and widely recognized as a stalwart union member. Born January 11, 1912, he was initiated by Local Union 253 on October 14, 1933. He leaves a son, Chet, Jr., who has followed in his father's footsteps and is a member of Local Union 253. "Pop" will be long remembered for his good fellowship and his faithful stewardship.

## A Modern Parable For The Union Man

For many years a mining company out west employed a chinese cook and one evening after an unusually good dinner the superintendent decided to raise his wages. The next day was payday and the cook noted the extra money in his envelope.

"Why you pay me more?" he asked.

"Because," replied the superintendent, "you've been such a good cook all these years."

The cook thought it over, then said, "You been cheating me long time, eh?"

## As We Go to Press

On February 15 the National Association of Radio and Television Broadcasters filed a petition with the FCC, calling for the extension of remote control. A public notice, looking toward a proposal for rule making, has not been issued by the FCC, as we go to press. The Brotherhood will keep close tab on this development, and more details will be found in the March issue of T-E.



The political focus  
is on the nation's capitol  
this general election  
year . . . and on the  
right-to-work states, too.  
Here are Labor's  
political plans for 1956.

## *Your Role in an Election Year with*

# COPE

**W**HEN the AFL and CIO merged in New York City recently the political arms of both organizations were merged as well. As a result, the Committee on Political Education—or COPE—displaces the AFL's former LLPE and the CIO's former PAC.

The convention called on all affiliated organizations to render “all aid and assistance” to the Committee on Political Education.

The convention reaffirmed labor's “traditional policy of avoiding entangling alliances” with any party and stated, “We seek neither to capture any organization nor will we submerge our identity to any other group.”

Labor has been “forced to political education and activity,” the resolution declared, because “a small but powerful core of reactionary business groups” has sought to “punish” unions by legislation and to “destroy or render useless” their collective bargaining strength.

The enactment of the Taft-Hartley Act and 18 state “right to work” laws are a “dagger at the throat of trade unions and a threat to the living standards of every working man and woman,” it said.

The political activities of organization should be “expanded” under the AFL-CIO, the convention declared.

The parent organization itself promised “direction and coordination” to state, city and county federations and

councils and proffered “aid and cooperation” in the political education and action of national and international unions.

There should be a program to “place the voting records of our elected officials in the homes of each member,” the convention said, and AFL-CIO political activities should be supported financially by “an annual campaign for voluntary contributions” from union members.

All affiliated organizations were asked to give “every proper cooperation and assistance” in the financial campaigns.

The Committee on Political Education was specifically directed to “strengthen its program for integrating the family voter into the political program” and to establish women's divisions and training conferences.

Political activity among wives, sisters and daughters of union members was encouraged so that “their vast resources of skill, energy and devotion to good citizenship may be enlisted” in the program.

It is our firm belief, the convention declared, that our democratic government as set forth in the Constitution “is the best that has been devised to meet the needs of free men.”

“We pledge it unselfish and unstinting support and vow that our every effort shall be directed to its preservation.”



BRIGHT LIGHTS may be the reward of stardom, and the brightest of all incandescent lamps is explained to actress Dani Crayne by Sylvania engineer Richard H. Lindeberg (left). The new light source developed by Sylvania, is powered by radio frequency energy, similar to the signals transmitted by television and radio stations. It emits a bright, uniform light especially suitable for use in motion picture film printing. Looking on is Jack Thomas, head of Universal-International's special effects department.

## Radio Frequency Lamp Shines Brightly

New highly uniform light source, more brilliant than any other incandescent lamp, has applications in motion picture field.

USING the same type of radio signal that transmits sound to radio and television receivers, a new multi-purpose lamp was introduced by Sylvania Electric Products Inc. on February 2. The lamp transforms radio impulses into light so brilliant that it is brighter than any incandescent lamp ever devised.

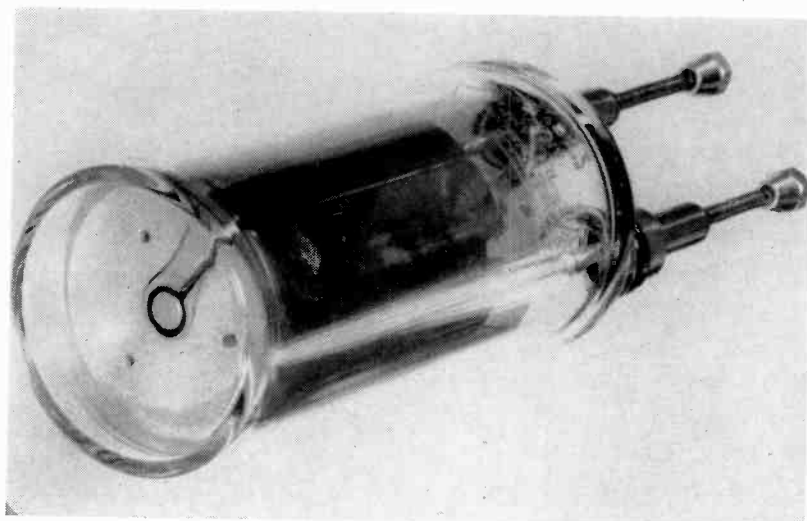
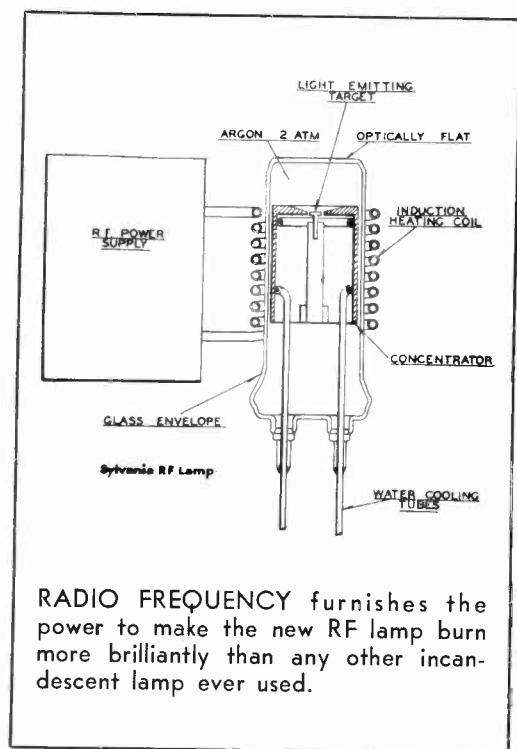
The lamp is not connected by wires to the source of its activating energy. Known as the RF (Radio Frequency) lamp, it was originally designed by Sylvania engineers, in cooperation with the Motion Picture Research Council in Hollywood, to overcome a number of motion picture printing problems. The RF lamp can also be used in color television tube processing, medical research, radar and air traffic control, computers, film projectors and many other fields.

Immediate advantage of these characteristics of the RF lamp is being taken by the motion picture industry which is already using the lamp in film printing operations. By using the RF lamp, the motion picture industry now can increase the speed of critical film printing operations up to eight times faster than it could using conventional methods. The speed with which Hollywood will now print these films is limited by the

mechanical speed at which the film can be run through the printing equipment rather than by the quantity of light available. In addition to these substantial savings in time in film printing, the uniformity of RF illumination has resulted in a noticeable improvement in the quality of the print.

First commercial installation of the RF lamp was made by Consolidated Film Industries. According to E. H. Reichard, chief engineer of Consolidated, the use of the light source in optical printing equipment resulted in increased uniformity of field, exceptional increase in light output, and greater lamp life. Eventual conversion of all optical printing equipment to RF light is predicted by Carl Hauge, quality control engineer for Consolidated. Mr. Hauge said he believed that the present usage of RF for color separations and negatives is only the initial stage in widespread laboratory applications.

Mr. Connor stated that Sylvania engineers now are working on the possibility of employing the RF lamp for studio set lighting. He pointed out that with the advent of wide-screen color motion pictures, many times



RF LAMP developed by Sylvania engineers is a new concentrated light source activated by radio frequency. The RF lamp has no direct electrical connections, yet is more brilliant than any incandescent lamp. It is being used to improve the quality of motion picture printing, and the new light source already has been found to have important applications in a wide variety of industrial and commercial fields, including color television, medical research, radar and air traffic control, computers and projectors.

more light is needed in filming to gain the necessary depth of focus. In supplying this quantity of light the temperature on the studio set frequently rises to a point at which it becomes a problem to both actors and technicians. The RF lamp, according to Mr. Connor, conducts out the heat which in other lamps is transferred into the air.

The RF lamp also permits radar images to be projected onto a screen, Mr. Connor said. This has found immediate application in an air-traffic radar device presently being produced under military supervision.

"In this fast moving jet age there is no longer time to plot the location of planes on a large board as has been the practice," Mr. Connor said. "Planes now move so fast that danger of collision can occur during the time the aircraft are being plotted. With the RF lamp, the radar targets can be projected directly on a ten-foot square screen and the movement of the planes observed immediately. Not only does this mean more safety for the flying public, but the application opens up many useful applications for the military," he said.

Mr. Connor said that this same principle was being applied in medical research. For example, with the use of RF illumination, scientists will be able to project microscope images of tissues on a large screen to determine whether cancer cells are present. The excellent uniformity and brilliance of RF illumination permits more perfect images than were possible previously.

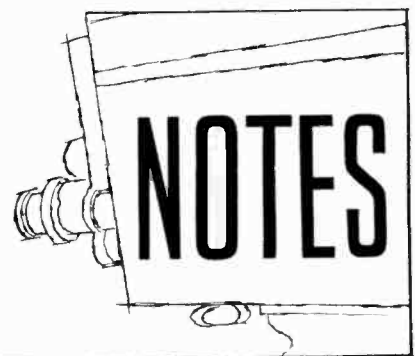
The RF lamp already has resulted in an important production improvement in the manufacture of color television picture tubes, Mr. Connor said. In manufacturing color tubes, the three phosphors which are used,

red, green, and blue, must be fixed by a photographic process. To do this, a bright concentrated light source is required. By using the RF lamp, it was found possible to cut in half the time required for this process.

In describing the construction of the new RF light source, Mr. Connor pointed out that the lamp represents a union of lighting and electronics. He said it opens the door to an entirely new field which might be termed "lumonics." He explained that the energy used to produce the light in the RF lamp is the same as that used in TV and radio broadcasting. In the case of the RF lamp, the energy is concentrated into a small disc about  $\frac{5}{16}$  of an inch in diameter, causing it to incandesce brilliantly.

The RF lamp, which is heated by induction, uses for the light-emitting source a disc of refractory material, according to Mr. Connor. Because the refractory material can be heated to a much higher temperature than the tungsten filaments of incandescent lamps, a great increase in light is attained. Also, because of the higher temperature, the light has a higher content of blue than does the incandescent lamp and provides more light emission in the visible range. With the use of a disc, as contrasted with the usual tungsten wire filament, the light from the lamp can be focused directly without complicated optics.

The RF energy is carried to the RF lamp by means of a copper coil wound around the outside of the lamp from a radio frequency oscillator. A DC voltage source is used and the brightness of the lamp can be controlled by varying the voltage. A water line can be connected to the oscillator to cool the lamp and coil.



## Tube Directories

Publication of an "Interchangeability Directory of Industrial-Type Electron Tubes," (Form 1D-1020A), and a "Picture Tube Replacement Directory" (Form KB106), with an accompanying chart of tube characteristics, was announced in January by R. S. Burnap, manager, Commercial Engineering, RCA Tube Division.

"The Interchangeability Directory," Mr. Burnap said, "lists 2,000 tube designations presented in a form that should be of maximum assistance to distributors, dealers, servicemen, broadcast stations, and individual tube users in selecting the proper RCA tube type as a replacement. Included in the listings are vacuum power tubes, vacuum and gas rectifiers, thyratrons, ignitrons, magnetrons, cold-cathode (glow-discharge) tubes, phototubes, oscillograph tubes, camera tubes and receiving type tubes for industry and communications."

Tubes of 26 manufacturers, Mr. Burnap added, are indexed in the "Interchangeability Directory."

"The Picture Tube Replacement Directory," Mr. Burnap said, "is divided into two parts. The first section lists the ratings and characteristics of 60 existing picture-tube types, including the 15GP4 and 21AXP22 color tubes, and 13 discontinued RCA types. The second section lists recommended RCA replacements for more than 150 industry types."

Copies of the publications may be obtained from RCA tube distributors or from Commercial Engineering, RCA Tube Division, Harrison, N. J., at a cost of 20 cents a copy.

## Frequencies Exceeded

Altec Lansing Corporation is affording circulation to an unusual announcement, revealing the fact that the frequencies originally attributed to the company's new line of loudspeakers employing concentric compliance design have now been considerably exceeded, following special production techniques.

The Altec data which marked the introduction of the 408A 8" biflex speaker guaranteed a frequency extension range of 13,000 cycles. The new announcement states that this speaker now has a guaranteed range of from 60 to 16,000 cycles, while the 412A 12" speaker

now provides from 40 to 15,000 cycles, and the 415A 15" speaker offers from 30 to 14,000 cycles. All of these speakers feature Altec's multiple concentric compliance design.

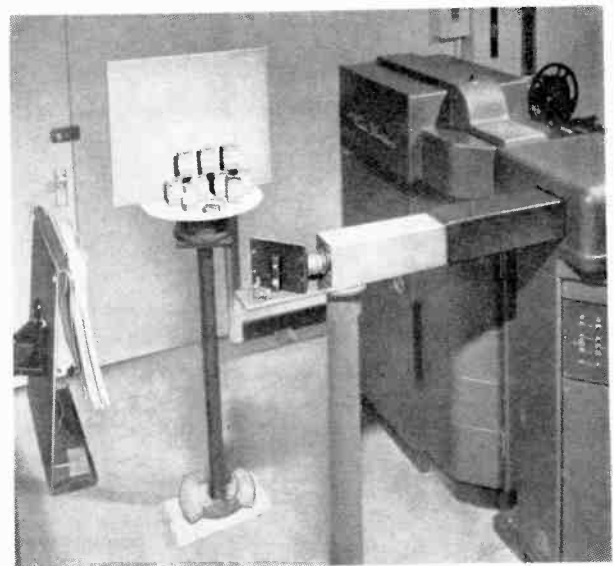
Measured in Altec's anechoic chamber, these ranges, supplanting those originally announced, are guaranteed by Altec, and result from new methods of production and control.

## Live Color Pick-ups

RCA engineers have worked out an extension lens system which can be used with any RCA "3V" Camera to pick up all kinds of product displays, live, in action, in color. And the same system can be used for televising color opaques.

Products to be colorcast are set up on a small, fixed stage. Any type of action which can be carried out in a limited area is practical. You can turn products around, upside down, etc. . . . show liquids foaming . . . real bottle pouring . . . use of tools . . . appliances in operation . . . wind-up toys in action . . . all kinds of animation.

Color opaques can be artwork, charts, maps, diagrams, magazine pages, comic strips. They can be mounted on



The "3V" Color Film System as arranged for pickup of color opaques and live action commercials with studio cameras.

an easel, on a flip-over stand, or held in the hand. You can use artwork or catalog illustrations and thus avoid making slides. Color rendition is nearly perfect; there are no density problems as with color slides.

Both products and opaques are televised in the open . . . in fully lighted rooms. No need for light covers or strobe lights. Pictures have high resolution inherent in vidicon type camera. Picture quality and color is equal in every way to that attained with studio type color cameras.

Development of a push-button operated 4-input multiplexer makes it possible to use an RCA "3V" camera for televising "live" color commercials, color opaques, color transparencies, color slides and color films.

### Warranty Increased

Increased dependability and longer service life of the RCA-5820 image orthicon camera tube, resulting from years of experience in its design and manufacture, have made it possible for RCA to liberalize substantially the adjustment policy covering this widely used TV camera tube, D. Y. Smith, vice president and general manager, RCA Tube Division, has announced. The new policy, he said, is in effect as of January 16, 1956.

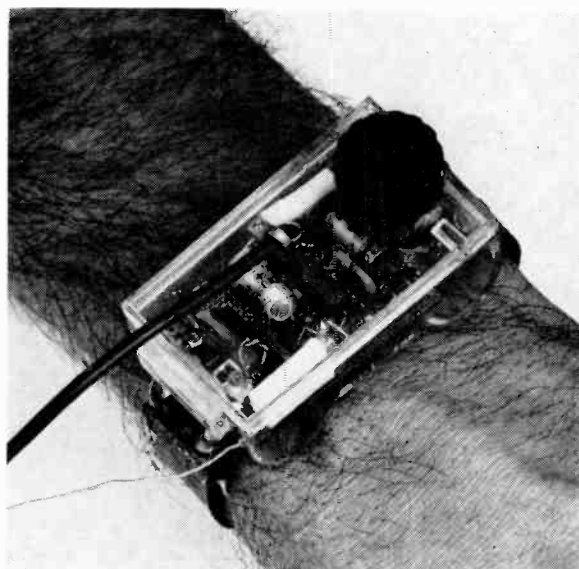
"Under the new policy," Mr. Smith said, "the 5820 will be covered by full adjustment up to 50 hours and pro rata up to 500 hours of service. The new policy supersedes the previous coverages of 15 and 350 hours, respectively.

"In those cases where full adjustment is granted, the dollar savings under the new policy, as compared to the previous one, may be more than \$170; for pro rata adjustments, the saving can be as much as \$360"; Mr. Smith stated. He pointed out that this more liberal adjustment policy is a direct reflection of RCA's insistence on product improvement, through continuous research and effective quality control techniques.

### Miniature Wrist Radio

This is the experimental wrist radio able to pick up broadcasts within a range of 40 miles. Developed by Army Signal Corps Engineering Laboratories, Fort Monmouth, N. J., as a means of further exploring the possibilities of miniaturization, it has been dubbed the "Dick Tracy," although it does not transmit.

The two and five-eighth-ounce radio is worn on the wrist in the same manner as a watch. The set is contained in a plexiglass case two inches long, one-and-an-eighth inches wide, and three-quarters of an inch thick. Its lilliputian size is made possible through replacement of the conventional vacuum tube with five tiny Germanium-veined parts designated as transistors and by other



Perched on a hairy wrist is this model of the Signal Corps' "Dick Tracy." Through a plexiglass covering can be seen the miniature components which enable this gadget to pick up broadcasts 40 miles away.

miniature components. In addition to the advantages gained from the small size of the transistors, their low power requirement makes it possible to power the set with a mercury battery little larger than the tip of a pencil. The "wiring" in the chassis is made up of printed circuits produced by an etching process.

A short antenna wire and a cord connecting the radio with the hearing aid type of receiver worn on an ear are concealed up the user's sleeve. A miniature switch is pushed to turn the radio on. A knob on the face is used to select stations or frequency. The set has been operating on a tuning range of 1,000 to 1,500 kilocycles, or approximately one-half the standard broadcast band.

### Continuous Movies

An independent TV station in New York City announced plans to launch this month a new idea in film showings. WABD (TV) inaugurates "Tune in Anytime Theater," a daily series which will feature one two-hour film running on a continuous basis from 10 a. m. to 4 p. m., with brief newscasts and commercial spot announcements being the only interruptions.

### KTLA to Regular Color

This month, KTLA (TV), Los Angeles, begins a regular weekly schedule of colorcasting for one and a half hours, with RCA underwriting an unspecified part of the extra transmission costs. Klaus Landsberg, station vice president and general manager, said that RCA's participation was prompted by a desire to stimulate sales of color sets. Engineers at the Los Angeles station who will feed the colorcasts are all members of IBEW Local 45, Los Angeles.

# Station

# Breaks

## Workshop Routine

The return of the "CBS Radio Workshop" after an absence of ten years reminds Guyon Madison, a CBS writer, of some of the complex engineering stunts pulled by the show's predecessor, "Columbia Workshop."

He recalls, for example, the time "Columbia Workshop" presented Archibald MacLeish's "The Fall of the City." The show needed 60 microphones and 11 broadcast engineers.

The engineers who worked on the "Columbia Workshop" were a meticulous and ingenious lot, says Madison. Among other things, they were called upon to produce (and did) the sounds of a trapped fly buzzing against a window; an automobile factory, from drop forge to the chug of a completed vehicle; loading and firing torpedoes from a submerged submarine; five hundred bombing planes in action; and a plane in a tailspin. They also developed such technical advances as a high-and-low-pass filter for voices and effects, and a labyrinth-type echo chamber.

## AFL-CIO Publications

The AFL-CIO Department of Research is issuing two new monthly publications of value to union members. One covers economic problems, and the other reports news of collective bargaining.

*Labor's Economic Review* includes a discussion of an economic problem and a review of economic trends and developments, and may be had for \$1.50 a year.

*Collective Bargaining Report* examines major bargaining issues and developments, contains information of interest in negotiations, and lists NLRB and court policy decisions. The subscription price is \$1 a year.

Both may be ordered from the AFL-CIO at 901 Massachusetts Avenue, N. W., Washington 1, D. C.

## Teleradio Merged

As of January 1, 1956, General Teleradio, Inc. was merged into RKO Radio Pictures, Inc. and the company is now known as RKO Teleradio Pictures, Inc.

The company operates WGTH-AM-TV Hartford, Conn., KHJ-AM-FM-TV Los Angeles, KERC San Francisco, WOR-AM-FM-TV New York, WHBQ-AM-TV Memphis and WNAC-AM-FM-TV Boston.

## Translator Stations

Chairman George C. McConnaughey said, early this month, the FCC is about to do something for small communities that have been geographically isolated from television.

McConnaughey explained that the Commission expects to announce on March 5 regulations for construction of "translator" stations, which will pick up a signal from a parent station and re-broadcast it. He said the translators cost about \$1,000. Installation can start right away if the new regulations go through as the Commission proposes. Interested parties have 10 days to comment on them.

The matter came up at television hearings of the Senate Interstate Commerce Committee, where members of the Commission were witnesses.

McConnaughey said the "temptations" of TV are so great that some so-called "booster" stations are now operating illegally, especially in Washington. A booster station re-broadcasts the signal on the same frequency and constitutes serious interference with existing stations, he explained. A translator station changes the frequency.

The committee hearings are particularly concerned with the problem of ultra high frequency television. Many stations authorized on these frequencies have gone out of business.

McConnaughey pointed out that only a small proportion of the TV receivers now being manufactured are equipped to receive UHF as well as the more common very high frequency broadcasts.

"Don't these manufacturers have any sense of public service at all?" inquired Sen. A. S. Mike Monroney (D-Okla.).

McConnaughey replied that competition is at the root of the difficulty. One producer may start to get out a UHF-VHF receiving set, he said, but if his competitor insists on selling the cheaper VHF model the higher priced set is forced off the market if no UHF stations are broadcasting in the area.

## Technician-Engineer