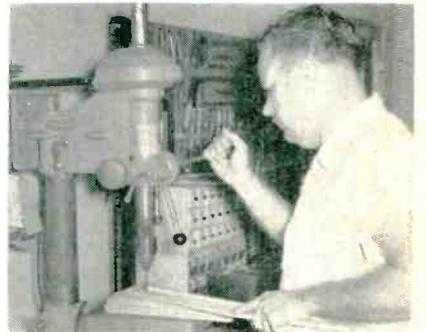
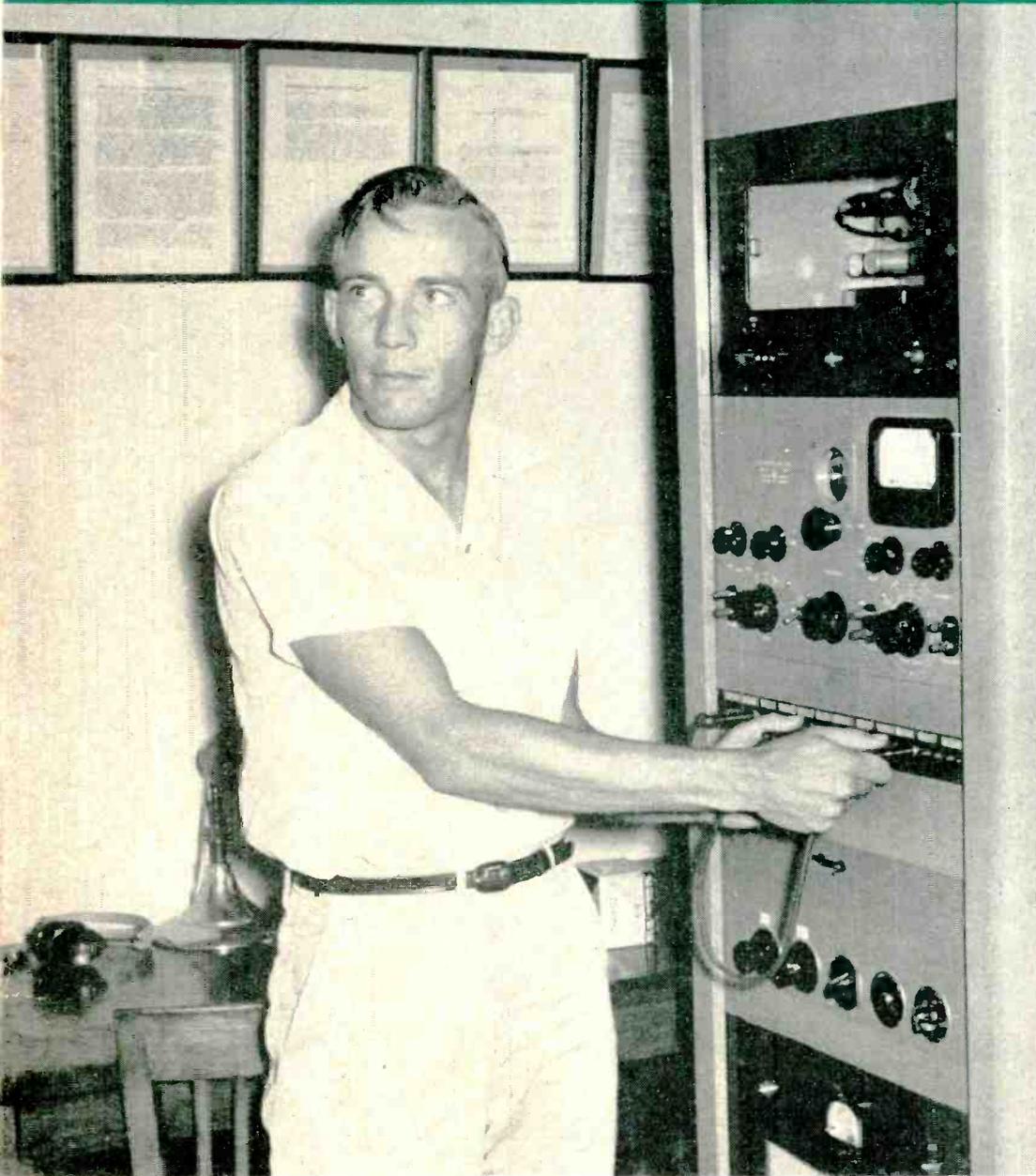


RADIO, TV and RECORDING



TECHNICIAN-ENGINEER

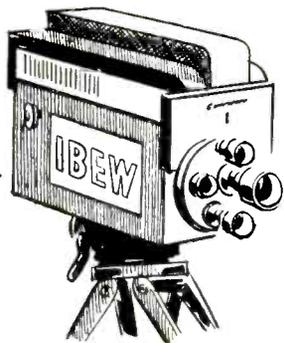
AUGUST, 1954



DEEP SOUTH LOCAL
See Story, Page 3



International
Brotherhood
Of Electrical
Workers (AFL)



COMMENTARY

They're Done It Again

WE need not elaborate on the anti-labor actions of the National Labor Relations Board during the past several months; one precedent after another has toppled, as a result of rulings of the Board, leaving confusion to reign where responsibility, stability and logic once existed. One of the Board's most startling actions, however, is contained in a recent statement of policy, in the form of a brief item covering an important subject:

"The Board announced that it would assert jurisdiction over radio and television stations only if their gross revenue amounts to \$200,000 a year and newspapers only if their gross revenue amounts to \$500,000 a year. The former standards placed no limit on jurisdiction of broadcast stations or newspapers if their operations affected interstate commerce."

In its inimitable way, the Board has exercised its administrative discretion and has largely negated the intent and purpose of the National Labor Relations Act in terms of the two industries affected. The Act aspires to high principles, espouses protection of "employees who do not possess full freedom of association or actual liberty of contract," encourages "friendly adjustments of industrial disputes" and restores "equality of bargaining power between employer and employe." While we strongly oppose the Taft-Hartley amendments to the Act which are fundamentally detrimental to ordinary human rights, we do believe that laws and regulations of a government should apply equally to all persons and that an arbitrary limit of income should not determine the applicability of law.

Only a few states have election and certification machinery in the labor relations field comparable to that of the Federal Government. The Wisconsin Employment Relations Board has been quoted as believing that it can handle cases refused by the NLRB and the New York State Labor Relations Board is "ready and eager" to take such cases. One further bright spot in an otherwise gloomy picture is a statement from a high official of the

Federal Mediation and Conciliation Service to the effect that the Service will not accept or deny cases on the basis of the standards set up by another governmental agency under another law. The Service obviously intends to apply its own tests as to whether an employer is involved in interstate commerce.

The NLRB has created questions of applications of its policy in several respects. No definition of jurisdiction is yet available on multiple ownership, joint ownership of newspapers and stations, or newly established stations. We take the position that the question of application of jurisdictional standards is not a private matter between the Board and an employer. We can, therefore, state that we have a legal right of access to authentic records and statements of income. Upon occasion, we may be forced to request the Board to grant a subpoena to produce and make available information on gross revenues of employers. It is our contention that under Section 102.58 (c) of the Rules and Regulations of the Board, such subpoena must be issued, upon request.

It is clear that when the NLRB refuses jurisdiction, organizational strikes, secondary boycotts and unfair labor practices will be subject only to local—in most cases, State—laws. We believe, however, that companies which operate businesses under Federal regulation and in accord with licenses which can be issued ONLY by the Federal Government should be subject to uniform standards and should be recognized as being in interstate commerce, for all administrative purposes. It is our opinion that the Board has gone far afield from the authority granted by the language of Section 6 of the Act. In terms of the public interest and the public policy the Board has acted contrary to both. It has been well said, "If a man takes upon him a public employment, he is bound to serve the public as far as the employment extends, and for refusal an action lies."

The special position of the publicly enfranchised radio and television stations has been ignored completely by the National Labor Relations Board.

RADIO, TV and RECORDING
TECHNICIAN-ENGINEER

VOLUME 3 17 NUMBER 7
PRINTED ON UNION MADE PAPER

Published monthly by the International Brotherhood of Electrical Workers, AFL, 1200 Fifteenth St., N. W., Washington, D. C., for the men and women in the recording, radio and television industries.
J. SCOTT MILNE, *President* • JOSEPH D. KEENAN, *Secretary*
ALBERT O. HARDY, *Editor*

Entered February 20, 1952 as second-class matter at Washington, D. C., under Act of August 24, 1912. Subscription Price: United States and Canada, \$2 per year, in advance.

In The Land of Cotton, Oil and Low Broadcasting Wages

Surrounded by low-paid broadcasting employes, the members of IBEW Local 1178 surmounted many odds to obtain bargaining agreements with management. Now they're organizing their luckless brothers.



A 6-tower directional array operated by KTBS at Dixie, Louisiana. In the foreground a field of cotton in bloom.

IF YOU were to draw a 50-or a 100-mile circle around Shreveport, La., you would encompass scores of small AM broadcasting stations feeding a three-state area a mixture of hillbilly, western, and spiritual music. Occasionally, to satisfy the younger listeners, there is a smattering of popular recordings.

Feeding this mixture into the ether, along with a lot of special offers if you write today, are many two- and three-man teams of announcers and engineers who answer ads which read: "Wanted by Deep South station,

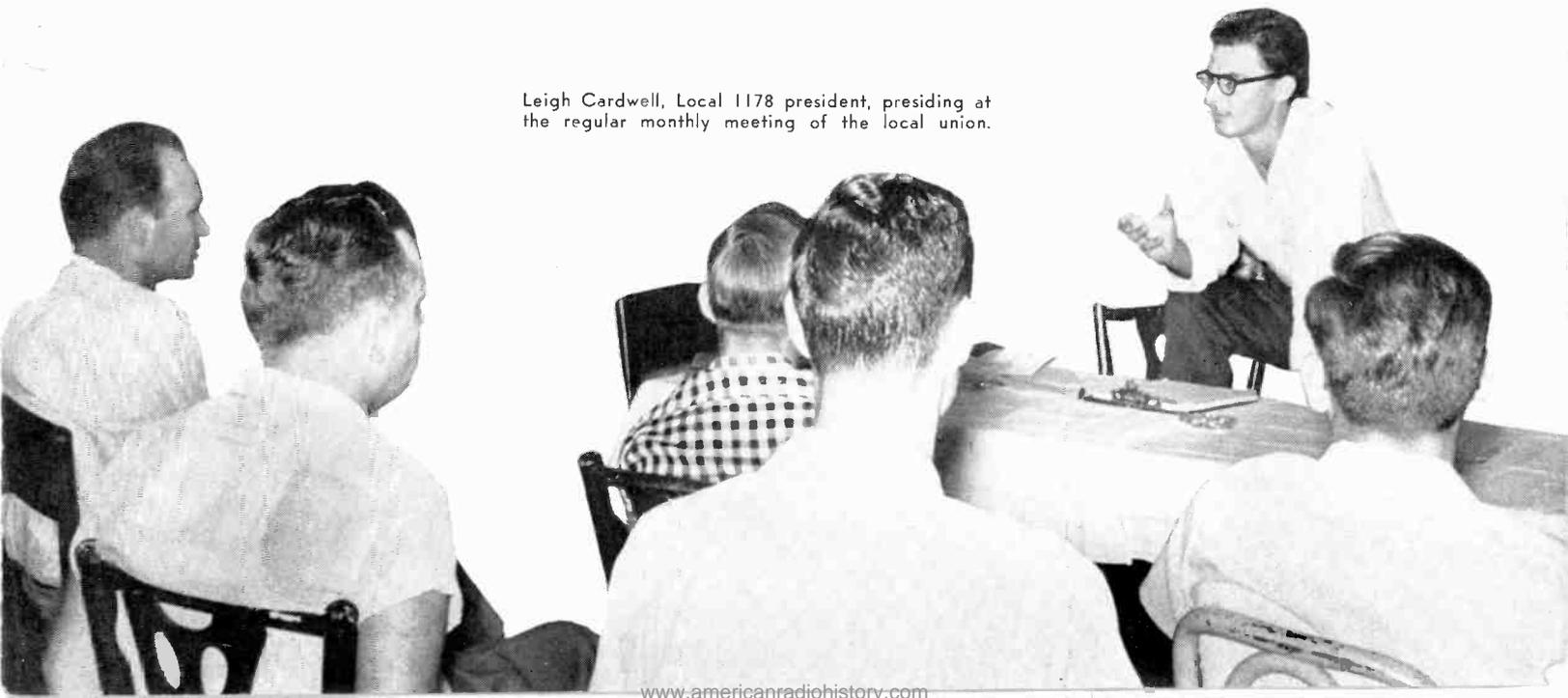
energetic engineer with first class license. Must be sober, diligent. Salary, \$40 a week. Box 123."

. . . or maybe: "Wanted: announcer-engineer who knows complete station operation. Drifters need not apply. Future salary commensurate with ability. Forty dollars to start."

Even in Shreveport itself, a city of 156,000, there are engineers and announcers who work for such low wages. As late as 1950, the average technician in this northwest Louisiana city was paid approximately 92c an hour. The average announcer received \$1.05 per hour. In other words, the radio worker in Shreveport earned between \$35 and \$45 a week.

Some stations worked their men seven days a week at this wage . . . others, six days. Some stations completely ignored the overtime law, which requires time-and-one-half after 40 hours. Some workers were fortunate enough to receive a 7-day paid vacation. Others received NO vacation at all. Rest periods were unheard of. Many men signed off at 12 midnight and opened up again at 6 the next morning.

Leigh Cardwell, Local 1178 president, presiding at the regular monthly meeting of the local union.



The employer fired whoever he wanted, and whenever he wanted to do so. One employer informed a station worker of his immediate discharge one Christmas Eve for a vague reason which would not be tolerated today.

Employees called back after regular working hours were often lucky to receive even straight time. The present-day call-back guarantee was unknown. Workers got no holidays. Holidays were worked for regular pay, the same as any other day. There were no guarantees of sick leave. Long hours and low pay were the rule of the day.

All of which sounds like Little Eva and the Bloodhounds to a Yankee enjoying union scale in New York or Chicago. But, be that as it may, there are many cities in the Southland where these very conditions exist today among broadcasting employees, and it would probably still exist in Shreveport, if four years ago a small group of station employees had not decided to organize for their common benefit.

This small group, meeting quietly, asked the International Brotherhood of Electrical Workers to accept them as members.

Their request went to a receptive organization, and at a midnight meeting early in 1950, the employees of our Shreveport stations were sworn in as members of the IBEW. Among the charter members of Local 1178 were W. J. Wilkinson of KRMD; Sam Contonis, a KRMD announcer; Charles Ellis, Marvin Perry, and Ernest McDonald of KTBS; and others.

Other workers joined as the local union became established.

Then came many months of bitter legal battles with employers. The seasoned experience of the IBEW came

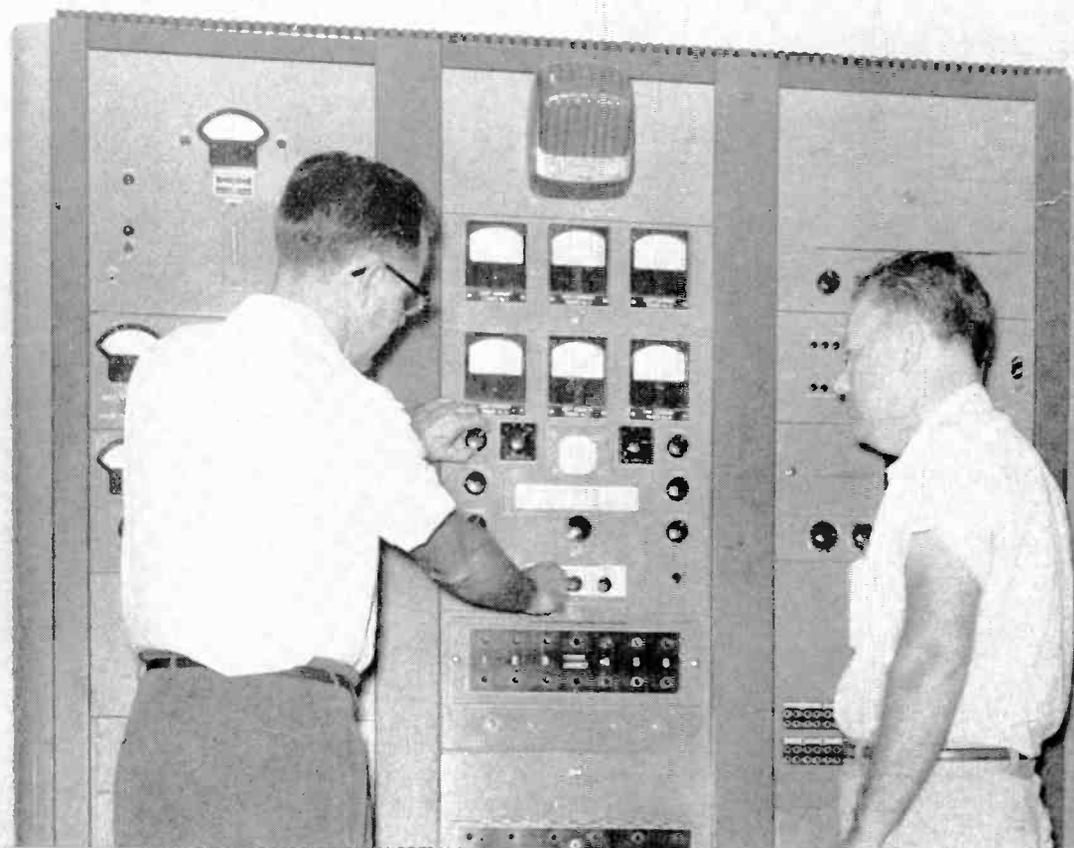


Two KRMD engineers, Ross Babigian and James T. Davis, in a huddle at the monthly business meeting of the Shreveport local.



Wm. Gartrell, KENT engineer, listens intently to the reports given at the August meeting of Local 1178.

Jack Murray, Local 1178 business manager, left, and Charles Ellis check the phases at the monitor of the KTBS 6-tower directional array, one of the few such elaborate antenna layouts in the nation. KTBS is the NBC outlet in Shreveport. Murray, originally from Colorado, has been with the station 2½ years. Ellis has been with the station since 1942 and with Local 1178 since it was organized in 1950.



to the aid of the new local, and all legal obstacles were overcome. Federally supervised elections were held, and the IBEW became bargaining agent at four stations.

The local's first contract negotiations found the employer agreeing to nothing, seeking to test the mettle of the new union. Employees finally were forced out on strike from mid-September through mid-November of 1950, as the local's first contract was finally signed. All other stations promptly recognized the union, and Local 1178 was officially in operation for the welfare of its members.

Now, for the first time, employers, under the impact of binding contracts, were forced to deal with their employees collectively. At first, there were many trivial disagreements over contract interpretation, as both employer and union members felt their way along under the contract arrangement. Today, however, misunderstandings are few and far between.

Four years have now passed since IBEW Local 1178 was founded. Its work is far from done. Of the eight major Shreveport stations, four are organized—KCIJ, KENT, KRMD, and KTBS. Four are unorganized—KWKH, KSLA-TV, KANV, and KJOE. (The last two stations are recent daytime AM grants.)

The local has 25 members, including nine announcers—four at KRMD, four at KENT, and one at KCIJ.

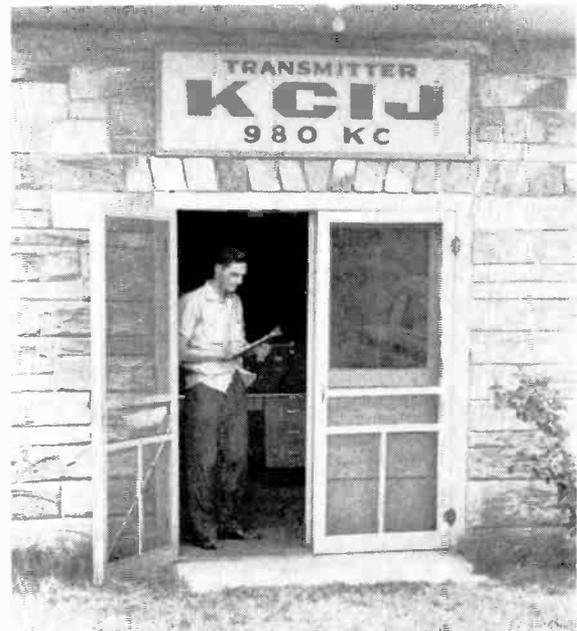
The potential membership is great, with those many small platter-spinning stations still waiting out there among the pines and the oil rigs for an organizing drive.

But, meanwhile, much has already been accomplished for the members of 1178. The pay of the average technician in Shreveport today is \$2.10 per hour; the average announcer, \$2.20 per hour. Members of the union now work a five-day week. Overtime is strictly observed for all hours over 40 by all employers. Members at contract stations can now get as much as three-weeks vacation, depending on length of service. Every employee must now be given a 12-hour rest period between his daily tours of duty.

The union now plays a part in *all* discharges by the employer. If the union feels that the discharge is unjustified, appropriate steps are immediately taken to restore the employee to his job without loss of pay. Workers called in after their regular days work is done are



Last year, members of the union walked a picket line, as the local sought a new contract. Carrying the sign, here, is John Woodall. With him are Robert Long, F. M. Moses, and Jack Pulwer, all waiting their time for duty.



John Woodall at the KCIJ transmitter on Blanchard Road, two miles past the Shreveport city limits. Woodall has been an IBEW member since the local began in 1950.

W. J. Wilkinson, financial secretary of the local, on duty at the KRMD transmitter, located in a downtown hotel.

Leigh Cardwell, president of Local 1178, announcing a nighttime platter show in the KRMD broadcasting studios.



guaranteed at least three hours work credit at time-and-a-half. If called in on their day off, at least six hours of work is guaranteed.

Members now receive double time on six holidays—New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas.

Members now have regulated sick leaves and are allowed a maximum of three weeks with full pay per year.



Local President Cardwell discusses Shreveport problems with International Representative O. E. Johnson, who serves this region of the South.

With a pumping oil derrick as a backdrop, Joe Williams of KENT checks the day's work sheet at the transmitter.



Work schedules must now be of a continuous nature—quite unlike the past, when many technicians and announcers worked split shifts and were either going to work or coming from work from sunup to sundown.

Local 1178 members operate the transmitters of KCIJ, KENT, KRMD, and KTBS and handle the announcing duties at KCIJ, KENT, and KRMD and the control board duties at KTBS.

The regular monthly meeting of the local is held on the second Monday of each month. Every two years new officers are elected. Members nominate in May and vote in June. Officers recently elected include: Jack Murray, business manager; E. L. Cardwell, president; E. J. McDonald, vice president; W. J. Wilkinson, financial secretary; G. Osborn, treasurer; F. A. Ledbetter, recording secretary; and an executive board consisting of J. T. Davis, N. L. Keys, F. M. Moses, E. J. McDonald, and W. A. Gartrell.

In addition to its IBEW affiliation, the local is a member of the Central Trades and Labor Council of Shreveport and the Louisiana State Federation of Labor.

Still Face Obstacles

Though the Shreveport members have progressed tremendously since their organization four years ago, they face many obstacles still. Already one full remote operation is conducted by a non-union Shreveport station. With the NARTB proposal to place all transmitters up to and including 50 kw directional under remote, there is a growing menace of cheap, inefficient broadcasting.

At nearby Texarkana, another remote is functioning. It displaced three men, who, according to the chief engineer there, "just scattered" without the station offering to help them find another job.

Louisiana is one of the most recent states to pass an oppressive "right to work" law. Last month, Governor Robert Kennon happily signed this union-busting bill.

Nearby East Texas, where countless broadcasting employes are working for cotton wages, is under a long-standing anti-union law passed by the Texas legislature.

When 1178 representatives approach workers at a non-union station, workers there often plead with them to go away. They are afraid the boss will fire them for talking to a union man.

The young Shreveport local is in the bargaining position of several Southern IBEW locals. Consider the fact that the owner of KRMD also owns four other radio stations and two television stations. Only KRMD is a union station. This makes bargaining very difficult. And yet it indicates the potential salary scale which can be obtained in this region for non-union stations, if they will only organize.

The Economics of Television

FCC report shows that UHF television stations are successful when 50 miles from nearest VHF and lose money when otherwise

THE Economic Division of the FCC has issued a report based on questionnaires sent to 101 "post-freeze" stations, before networks and television equipment manufacturers as of August 1, 1953. At that time the average station had been on the air for five months, most stations included were the only stations in their community and only two of the UHF stations were in markets with pre-freeze stations.

Among the notable items are that the eight profitable UHF stations were all more than fifty miles away from the nearest VHF stations and nine out of ten of the UHF stations which lost the most money were within fifty miles of at least two VHF stations. Overall profit was reported by eight VHF and eight UHF stations of the 83 stations which responded to the FCC's questionnaire.

Twenty additional stations (12 VHF, 8 UHF) reported at least one profitable month, despite an overall loss for the period included. Fifteen (7 VHF, 8 UHF) were approaching the break-even point on a monthly basis and the remaining 32 (15 VHF, 17 UHF) showed continued substantial losses in each month of operation. The eight profitable VHF stations averaged monthly revenues of \$26,000, average monthly expenses being \$20,000. The eight UHF stations reporting a profitable operation had monthly revenues averaging \$26,400, \$20,300 expenses. The age of the average profitable

station was 8.6 months for VHF stations, 6.8 months for UHF.

Stations in larger markets were, generally speaking, better off than those in smaller ones. All eight profitable UHF stations were in markets over 100,000 while four of the eight profit-making VHF outlets were in similar markets. In markets of 100,000-300,000, seven of 37 (19 per cent) reported profit; in markets of less than 100,000 only four of 32 (12½ per cent) were in the black. Some 80 per cent of the UHF stations reporting and 43 per cent of the VHF stations were in markets over 100,000. Of stations in operation less than six months, average compensation from the networks totaled \$37,000 for VHF, \$82,000 for UHF. Those which had been operating more than six months reported \$40,000 compensation from networks to VHF stations, \$30,000 to UHF stations. The average station received 13 per cent of its total revenue from the networks; the average for VHF stations being 10 per cent and the average for UHF stations 15 per cent.

An additional interesting note is made in the report to the effect that the set saturation in the majority of UHF markets was below 25 per cent (as of October, 1953) and no UHF market had more than 50 per cent. Of the eight profitable UHF stations, four were in markets having between 25 per cent and 50 per cent saturation, two were in markets having less than 25 per cent and information on the remaining two was unavailable.



Live-Wire Meeting

As this issue of the *TECHNICIAN-ENGINEER* reaches you, delegates to the Third Annual Progress Meeting of the Radio, TV, and Recording Division will be on their way to Chicago. Holding sessions August 27, 28, and 29 in the Hotel Sheraton, the delegates will be considering many topics of vital interest to members of IBEW locals concerned with broadcasting. It'll be a live-wire meeting . . . fully reported to you in the September issue of the *TECHNICIAN-ENGINEER*.

Service Book for RCA Color TV Is Issued

Complete circuit diagrams of the RCA Victor CT-100 home color television receiver, plus latest data on test instruments and techniques required for installation and maintenance of color sets, were made available in May to the television service industry by the Radio Corporation of America.

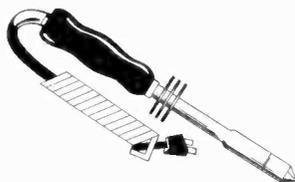
The information is contained in a second edition of "Practical Color Television for the Service Industry," RCA's comprehensive servicing book, first published late last year. The new edition was prepared by the RCA Service Company and the RCA Tube Division, and will be available at \$2 per copy from RCA tube and parts distributors, or direct from RCA Commercial Engineering, Harrison, N. J.

Larger and more detailed than the original version, the new edition provides 80 pages of text and four-color photographs to describe field-tested techniques for installing, trouble-shooting, and servicing home color sets. An important section of the book is devoted to newly-developed RCA test equipment for color servicing. Text material details the requirements and applications of all types of test equipment required in color television service.

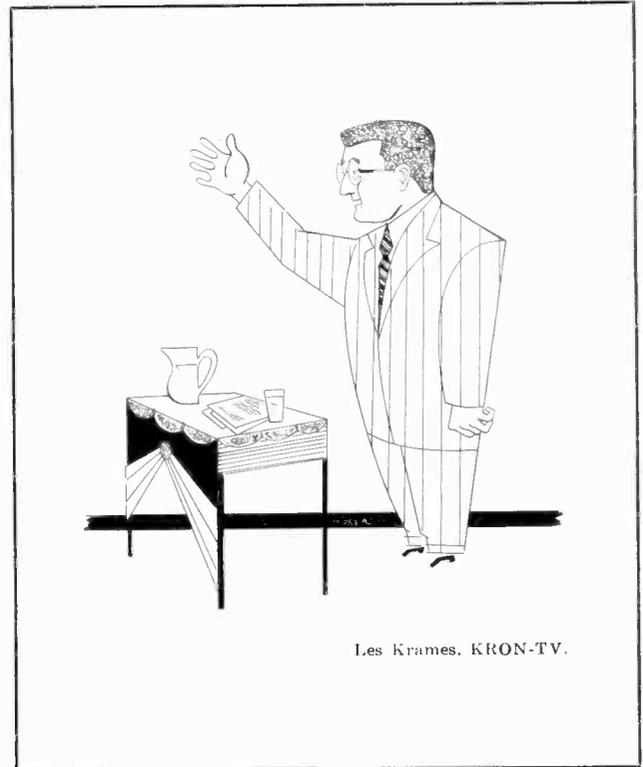
New WGN-TV Antenna For Chicago Building

Plans have been announced for the erection of a new WGN-TV Chicago transmitting antenna on top of the \$40 million Prudential Insurance Building every next summer, and the start of operation there in early 1956.

The building, now under construction, will be 41 stories high, and the antenna will rise 925 feet above street level. WGN-TV, the *Chicago Tribune* outlet, has acquired a 10-year lease for 3,000 square feet of floor space, with occupancy slated for December 1955. Frank P. Schreiber, manager and treasurer of WGN Inc., has applied to the FCC for the moving of the transmitter to the new structure.



A day's work is a day's work, neither more nor less, and the man who does it needs a day's sustenance, a night's repose and due leisure, whether he be painter or ploughman.—GEORGE BERNARD SHAW.



Les Krames, KRON-TV.

3rd Annual Progress Meeting in Chicago

The Third Annual Progress Meeting of the IBEW Broadcasting Division convenes at 9:30 a. m. on Friday, August 27, and runs for three days. Advance registrations indicate that the 1954 meeting will be the most successful yet.

The meeting immediately precedes the opening of the International IBEW Convention, which opens August 30 in the giant International Amphitheater in Chicago.

The division meeting will be held in the Hotel Sheraton, where many delegates to the convention will be housed.

Also of interest to delegates to the meeting and to the International Convention is the Electrical Workers Benefit Association Convention, which will take place on September 2, beginning at 2:30 p. m.

Among the topics to be discussed at the annual division meeting will be the increase of remote operations at transmitters, the inequity of wage scales in the smaller cities, the difficulties in NLRB procedures, and various jurisdictional and organizational problems.

Last year, the Second Annual Progress Meeting, which met in Kansas City, was attended by the representatives of 36 local unions. A total of 50 delegates and 15 representatives from the International staff participated. President J. Scott Milne is expected to speak to delegates and stress the growing responsibilities of the division in the broadcasting industry.

Non-Communist Oath For Radio Technicians

If a proposed Federal Communications Commission rule goes through, radio operators and technicians will have to take a non-Communist oath in order to be eligible for a license.

The FCC is studying rules, applying both to amateur "hams" and to commercial operators, which would prevent the granting of licenses to any member of the Communist Party or any organization which has been required to register as a Communist-action or Communist-front organization under the 1950 Internal Security Act.

The first step in the rule-making process, in which the Commission was required to announce the proposed rules and accept comments upon them from interested parties, ended on July 19. The FCC is currently analyzing the many comments it has received, to determine whether a hearing on the pros and cons of such a rule is in order.

Agreement at Sarnia Has New Provisions

An agreement with CHOK, Sarina, Ontario, which was negotiated last month by Local Union 530 has been approved by the International Office. The certification of representatives by the Ontario Labor Relations Board is very interesting:

"All employes of the employer, save and except station manager, persons above the rank of station manager, program manager, chief engineer, bookkeeper, sales manager, salesmen, and persons regularly employed for not more than 24 hours per week."

We are very pleased to welcome our new members and can see that the agreement was very carefully written to fully cover the entire operations of the station.

Among the provisions which are somewhat novel are those which provide that persons shall be employed without discrimination because of race, color, religion, union membership or non-union membership and the allotment of space on two bulletin boards furnished by the company at two locations on the premises for the purpose of posting notices regarding meetings and other matters pertaining only to the union. A concise solution to the problem of retroactive pay is evident in the provision for all present employes to "be paid \$20 forthwith" in lieu of retroactive pay. Persons engaged in custodial duties work six hours per day on six days per week and the standard working day for other employes is seven hours. All employes are granted a quarter hour rest period before and after lunch—a provision to this effect is almost unique in the industry.

AUGUST, 1954

VIDEO VETERAN MOURNED



OLD AGE RETIREMENT—Chief Engineer Lee Berryhill (left) and Transmitter Supervisor Roger Woodruff take a last look KRON-TV's 8D21 tube retired for old age. This tube had 15,646 hours of service, a world's record, before being laid away. Next closest in length of service was a similar tube which gave up at KING-TV after some 8,000 hours.

Two Mid-West UHF Stations into Limbo

Two more TV stations joined the 26 already in limbo when KSTM-TV, St. Louis, and KVON (TV) in Lincoln suspended operations recently. KSTM-TV found that a UHF station cannot operate in competition with established VHF service in the same area, according to a letter sent to the FCC by its attorney. The station has been operating on Channel 36. KVON (TV) was licensed to operate on Channel 12, after KOLN-TV moved from Channel 12 to Channel 10 as the result of the purchase of KFOR-TV—the latter having been sold recently for \$300,000 to John E. Fetzer. KVON (TV) was eventually to have been operated by the University of Nebraska.

Notre Dame Games Will Be Broadcast by Mutual

Local and regional sponsors will be offered the Notre Dame football games this year by the Mutual Broadcasting System. Mutual will carry all the games—at home and away.

The first game is scheduled for September 25 and the last will take place on December 4.

Reading Time

Subminiaturization Techniques for Low-Frequency Receivers, National Bureau of Standards Circular 545, 64 pages, 44 figures, 2 tables, 50 cents. (Order from the Government Printing Office, Washington 25, D. C.).

This publication covers the second phase of a continuing program for the development of miniaturization techniques applicable to airborne military electronic equipment. The work was carried out by the General Miniaturization Group, Engineering Electronics Section of NBS under support of the Bureau of Aeronautics, Department of the Navy.

Earlier NBS work was reported in Office of Technical Services PB 100 949, covered miniaturization as applied to high-gain fixed-tuned intermediate-frequency strips in the very high-frequency band. This combines with the present developments to provide practical engineering treatment of a wide variety of electronic miniaturization problems over the radio frequency spectrum between 100 kilocycles and 100 megacycles.

Miniature Intermediate-Frequency Amplifiers, by Robert K-F Scal, National Bureau of Standards Circular 548, 36 figures, 46 pages, 40 cents. (Order from the Government Printing Office, Washington 25, D. C.).

Size and weight reduction of electronic equipment is becoming increasingly important for many applications, particularly in military equipment. Continuing program for the development of miniaturization techniques and their application to airborne electronic equipment has been carried out at the National Bureau of Standards under the sponsorship of the Bureau of Aeronautics and the Bureau of Ordnance, Department of the Navy. One phase of this program, the miniaturization of radar com-

ponents, has resulted in a number of innovations in electronic miniaturization technology. The purpose of this Circular is to make the results of some of this work more readily available to the electronics industry.

Three miniature high-gain, high-frequency, intermediate-frequency amplifiers (20 to 100 Mc) were developed with particular emphasis on the use of circuit elements suitable for maximum design simplicity, circuit flexibility, and ease of manufacture. The units are about one-eighth the size and one-half the weight of the equipments they supersede. The circuitry was designed with emphasis on the use of subminiature tubes and their application in low-noise input circuits. Some units are hermetically sealed for protection against contamination and moisture, and to provide for operation under the extreme temperature range (-65° to 200° C) required for such equipment.

AFL Research Report, American Federation of Labor, Department of Research, 901 Massachusetts Ave., N. W., Washington 1, D. C. \$1 per year, issued monthly.

Many Local Unions will find items of interest contained in the monthly *Research Report* issued by the American Federation of Labor. General items of information on rulings of the NLRB, opinions of the Administrator of the FLSA, employment statistics and the like should find a welcome place on Local Union agenda.

A feature item on the subject of life insurance provisions appeared on page 1 of the July issue. severance pay provisions were covered in a like feature in June and industry wage comparisons were discussed in the May issue.

Research Report is available, on subscription basis at the rate of \$1 per year, to Local Unions and their officers. Subscriptions and inquiries should be addressed to the American Federation of Labor, Department of Research, 901 Massachusetts Avenue, N. W., Washington 1, D. C.

State Right-to-Work Laws, The Bureau of National Affairs, Inc., 1231 24th Street, N. W., Washington 7, D. C. 20 pp. \$1.

The Bureau of National Affairs, Inc. has published a twenty-page pamphlet which contains the exact language of the various state statutes and constitutional amendments which relate to right-to-work laws in the 17 states which prohibit union shops.

The pamphlets are available at \$1 each or at 50c each in quantities of 100 and over. Orders may be addressed to: The Bureau of National Affairs, Inc., 1231 24th Street, N. W., Washington 7, D. C.



By Les Krames, KRON-TV, Assistant Art Supervisor.

1,374½ Man-Hours to Produce TV Drama!

Members of the CBS staff in New York recently made a survey of the number of man-hours which go into its major network dramas in an effort to make a cost analysis of television. Then Frank Stanton, CBS president, took a tabulation from the single half-hour show and presented it to a Congressional committee studying problems of broadcasting. The senators were amazed, just as the general public would be, by the amount of work which goes into their half hour of entertainment in front of the home TV set.

| | Man-Hours |
|--|---------------|
| Program staff, 7 men | 280 |
| Organist, 1 man | 6 |
| Casting, 1 man | 15 |
| Writer, 1 man | 80 |
| Cast, 15 actors | 330 |
| Scheduling administration, maintenance, 5 men | 4 |
| Estimating coordinating, 2 men | 4 |
| Trucking, 3 men | 12 |
| Scenery design, 1 man | 20 |
| Scenic construction and painting, 24 men | 52 |
| Trucking, 3 men | 1½ |
| Special effects, 2 men | 15 |
| Trucking, 3 men | 12 |
| Props, 1 man | 12 |
| Program conference, 5 men | 10 |
| Story conference, 3 men | 5 |
| Budget cost control, 2 men | 10 |
| Studio operations, 13 stagehands | 195 |
| Wardrobe handling, 2 men | 12 |
| Trucking, 3 men | 1½ |
| Costume design, 1 man | 15 |
| Lighting, 1 man | 15 |
| Makeup, 2 men | 12 |
| Graphic arts, 1 man | 6 |
| Film service, TVR distribution, 4 men | 4 |
| Network operations administration, 6 men | 3 |
| Stage manager, assistant director, 2 men | 21 |
| Three cameras, 10 men | 90 |
| Master control, 3 men | 3 |
| TVR, 3 men | 1½ |
| WCBS-TV, 2 men | 1 |
| Technician, scheduling, administration and maintenance, 12 men | 15 |
| Building service, security, 7 men | 105 |
| Telecine, 3 men | 6 |
| TOTAL | 1,374½ |

'Right-to-Work' Bills Threaten Many States

In the past few years many state legislatures have yielded to industrial lobbyists and passed laws, varying in form but similar in purpose, to forbid union security clauses in collective bargaining contracts. In order to sell these bills to their constituents, the state representatives have apocryphally labeled them "Right to Work" laws.

The Acts, of course, do not give anyone the right to work. They merely allow an individual employe to remain aloof from union affiliation, while he receives the benefit of any advantages a union may obtain for the bargaining group in which he works. The object is, plainly and simply, to weaken union strength by weakening its membership.

These laws have been passed principally by Southern states. Their direct purpose has been to woo large anti-union industries away from the North. The indirect purpose is to erect just one more roadblock in the endless battle against organization of wage earners.

As we go to press, active lobbies have sprung up in three more states to try to force "right-to-work" laws through their legislatures. The states are Missouri, Maryland, and Kentucky. The issues will be debated in next November's elections, and the lobbyists will start to work in earnest as soon as the 1955 state lawmaking sessions begin.

Run-down of States

Seventeen states currently have "right-to-work" laws. The original thirteen were Arizona, Arkansas, Florida, Georgia, Iowa, Nebraska, Nevada, North Carolina, North Dakota, South Dakota, Tennessee, Texas, and Virginia. Within just the past few months, Alabama, South Carolina, Mississippi, and Louisiana have been added to the fold.

In addition, five states have, through their legislatures or in their Constitutions, passed laws which restrict union security agreements to some extent, but not to a degree that justifies the "right-to-work law" label. These are Colorado, Kansas, Maryland, Massachusetts, and Wisconsin.

The labor movement, however, has made some gains itself in this area. Through the efforts of organized labor, these union-restricting Acts have been repealed since 1947 by six states. Three of the states, Maine, Massachusetts, and New Mexico, struck down the laws through public referendum in 1948. In the other three, Delaware, New Hampshire, and Louisiana, the Acts have been repealed by legislative action since 1949. As already noted, however, in 1954 Louisiana's legislature slid back into the labor-weakening business.

FM Drop-Outs Show Need For Multicasting Rules

FM broadcasters have been going off the air at a rate of more than a station a week since 1952, a situation which paradoxically may prove to be one of the strongest arguments to support multicasting rules proposed by the Federal Communications Commission.

The latest count of 554 FM outlets now on the air is down from an all-time high of 733 in 1949, and a drop of 62 stations since the end of 1952. Although there were over 1000 FCC authorizations for FM stations outstanding in mid-1948, there are now fewer than 575 authorized.

FM adherents apparently have a convincing argument for the FCC in pointing out that FM requires the stimulus of vast new revenues such as will be provided through commercial storecasting, hi-fi music, functional music and myriad other uses of multicasting which allows for transmission of four different programs over a single FM station simultaneously. The FCC's proposed multicasting rules are expected to be made final this summer.

FM's unique situation is pointed up in a survey of FM broadcasting by the National Association of Radio and Television Broadcasters. The survey, aimed to document successful FM operations as a guide to broadcasters, has proved inconclusive due to a small response from FM operators. However, according to John H. Smith, Jr., NARTB's promotion and FM director, numerous successful operations of FM have been demonstrated despite the medium's difficulty in getting established with the public. Whatever success has been apparent, independent programing has been predominant with special emphasis on hi-fi music broadcasting and local coverage (*The Billboard*, December 12, 1953; September 6, 1952).

NARTB's experts believe that most of outlets quitting the air have been either AM affiliates who weren't selling FM separately or stations broadcasting in AM-saturated areas. Chief problem of FM-ers, according to Smith, has been getting FM sets into the hands of the public, a situation which has been echoed in UHF television's struggle to compete with VHF.

The NARTB will continue to push its FM sets promotion and will continue to stress the value of separate programing of hi-fi, news and local events for which time cannot be cleared on AM. The programing trend in the last year, according to Smith, has been heavily toward music, with retail dealers offering FM sets as "hi-fi" receivers.

A major difficulty in getting a clear picture of FM, said Smith, has been the inability of most outlets which have AM affiliates to give financial data on their operations since books usually are not kept separately.

FCC's figures show that the decline in FM outlets may

be leveling off somewhat this year. FM's worst year was 1950 when 57 stations went off the air, but last year was almost as bad, with 56 going silent. The situation is relatively better so far this year, six stations having dropped out in the first two months. The commission's figures show that 554 FM stations were broadcasting as of March 1, a decline from 616 at the end of 1952, 637 at the end of 1951, 676 at the end of 1950 and 733 at the close of 1949, FM's biggest year.

One Moment Please

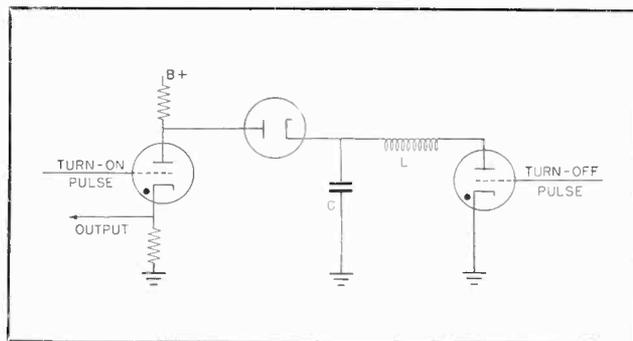


Television announcers have had troubles with mattresses on two occasions which we can recall.

One fellow wanted to demonstrate how wonderful a particular mattress was, so, first, he cut through an inferior mattress with a knife to reveal its cheap inner material. Then he tried to cut through his own mattress. But he had blunted the blade in the initial experiment, and he could make no impression at all on the mattress he was selling. It is said that neither he nor his sponsor rested well that night. The public roared, however.

But then there's the case of the other mattress huckster. This fellow also hacked away at a mattress (his sponsor's) to show how well it was padded . . . how well it was lined. When this drum beater arrived home that night, he found his own mattress scattered about the room. His enterprising youngster had been watching pop on TV and tried the experiment too!

EXTERNALLY TRIGGERED Electronic Power Switch



Its output waveform has rise and cut-off times of less than one microsecond

A RELATIVELY transient-free externally-triggered electronic power switch has been devised by J. Sargent of the National Bureau of Standards. The output waveform of this switch has rise and cut-off times of less than one microsecond. Over a frequency range from zero to 10,000 cps, the "time-on" interval can be varied from one microsecond to the maximum of about microseconds less than the repetitive period.

During a study of spark recorder transformers, it was found that the usual cross-coupled thyatron power switches which use two thyratrons had several disadvantages for this application. They are wasteful of power since one thyatron is conducting during the entire "off" period of the switch. Moreover, this type of circuit is not sufficiently transient-free for the pulse excitation of the transformers in this study. The conventional circuit has been modified so that the turn-off tube is self-extinguishing, and the undesired transient has been removed with the addition of a diode between the two thyratrons. The new design also provides an output voltage of rectangular waveform with negligible overshoot, leading and trailing edge times of less than 0.25 microseconds, and a wide duty-cycle range.

The electronic switch utilizes three tubes—two thyratrons and a diode rectifier. A condenser is connected to the plate of the power-delivering thyatron through the diode, and to the plate of the turn-off thyatron through an inductance. The other side of the condenser is returned to ground. The condenser is normally in a charged state when the circuit is in use. The output voltage appears across the cathode of the power tube.

The switch is turned on in the usual way by applying a pulse to the grid of the power tube. When the circuit is to be turned off, a pulse is applied to the grid of the turn-off tube, which then begins to conduct and discharges the condenser through the inductance. The L-C series circuit provides an oscillatory discharge whose frequency is determined by the condenser and the inductance. The thyatron, however, conducts in but one direction and current flows for only one-quarter of a cycle, but this is sufficient time to discharge the con-

denser completely. The rapidly decreasing voltage of the condenser appears on the plate of the power thyatron, thereby cutting off the flow of current through the tube and at the same time extinguishing the turn-off tube. After the thyratrons have deionized and the condenser has become recharged, the cycle may be repeated.

An experimental model of this circuit, built at the Bureau, is capable of delivering 50 watts into a 200-ohm resistive load, at as much as a 95-percent duty factor or as low as desired. Leading and trailing edges of the output rectangular waveform are less than 0.25 microsecond, and there is no appreciable distortion from transient voltages when the switch is pulsed on or off.

Flexibility in design of the NBS electronic power switch is possible using the large variety of thyratrons available. The circuit may readily be adapted for a wide range of applications.

REFERENCES

- Theory and applications of electron tubes, by H. J. Reich, McGraw-Hill Book Company, Inc., New York, p. 478 (1944).
- General Electric Review, by A. W. Hull, 32, 399 (1929).

WAGE EARNER REQUIRES \$5,500 A YEAR FOR ACCEPTABLE STANDARD OF LIVING

According to a new budget study made by the Heller Committee of the University of California, a wage earner with three dependents requires an annual income of \$5,405 to \$5,762 to maintain a "commonly accepted" standard of living. This estimate is based on prices in the San Francisco area in September, 1953.

In weekly terms, the Heller budget would require wages of \$104 to \$111 (assuming 52 weeks of work a year). The lower figure is for the home renter and the higher one for the home owner.

The fact that the total cost of the budget exceeds the income actually received by most wage-earner families demonstrates that existing wage levels are insufficient to enable workers to maintain a socially acceptable standard of living.

Technical NOTES

Raytheon Announces Portable Radio-Direction-Finder Combo

A new portable radio which serves also as a marine direction finder to help boatsmen determine their positions at sea has been announced by the Raytheon Manufacturing Company. The radio receives the regular AM "broadcast" band, and also the "Marine" and "Beacon" bands.

The Waltham (Mass.) electronics firm has labelled its new model the "GM 114A." It has no large radio antenna loop rising from the top, like most other radio direction finders. Instead, a flat, knob-like antenna projects only two inches above the case. The entire instrument weighs 13 pounds, including batteries, and measures 12 inches wide by seven inches high and seven inches deep. It looks very much like an ordinary portable radio.

The sailor can listen to a radio program or music and, at the same time, rotate the antenna until it points directly at the station that is broadcasting. In this way, the boat owner may obtain a "fix" showing his exact position at sea, using ordinary commercial radio stations.

In addition, he may tune in on the 1700-3400 kilocycle "Marine" frequencies to local vessels operating radio-telephones or to obtain weather information. The set also receives the 200-415 kilocycle "Beacon" band, enabling the mariner not only to make extremely accurate fixes, but also to locate lightships and danger points marked by government beacons.

The radio can be used by forest rangers, explorers, and ordinary vacationers, as well as operators of large or small boats. It is priced at \$149.50. A smaller, two-band model, "broadcast" and "marine," sells for \$99.95.

'Picture-Frame' TV Coming

Authoritative speculation on the shape of future television receivers visualizes a set that will look like a rectangular glass block about as big as a weekend case, and which may be hung on the living room or bedroom wall like a painting.

This and other developments affecting both color and black-and-white receivers were discussed at the Institute of Radio Engineers' spring meeting and show in New York.



Raytheon's portable radio-direction-finder combination displayed by a comely miss, who is not necessarily an accessory to the offer.

On the face of the envisioned glass block will be the picture screen. Inside will be the receiver chassis, employing components greatly reduced in size. The engineers' task will be to figure out in this rectangular design some method to scan the picture face.

Under present methods, the screen is scanned by an electronic "gun" located in the neck of the tube. Realizing that a reduction of the size and shape of the receiver will eliminate this electron gun, the television engineers stated that a whole new scanning method will have to be devised.

Crosley has already launched the move toward smaller set sizes with a new receiver in which the components have been stacked up around the picture tube instead of being laid out flat in the traditional "bread board" style. The chassis thus has a shorter overall size, weighing only 39 pounds.

Also, at the IRE meeting, Sanders Associates, an electronic research and development company, displayed a television receiver chassis that employs printed circuits. This recent refinement will bring further economy in space, as well as in receiver costs.

Transatlantic Television

At the beginning of this month in Washington, President Eisenhower signed a bill setting up a nine-man commission to study the technical possibility of a trans-Atlantic television system. The commission, which at this writing has not yet been appointed, is slated to report its findings by the end of this year.

The principal goal of the Act is to devise a method for the United States to broadcast television directly to Europe. In reporting out the bill, the House committee said, "Television can become an important medium in the overseas-information program of the United States. Its impact upon other peoples could be greater than that of the Voice of America."

Transmitter Tower Safety

In order to minimize the possibility of airline accidents, a study of means to increase the effectiveness of marking and lighting radio and television towers was urged last month by the Air Transport Association and the National Association of State Aviation Officials.

Testifying before the working committee of the Washington Air Coordinating Committee, Frank B. Brady, representing the ATA, said that present marking and lighting standards were inadequate. He urged the committee to begin working on methods of improving tower identification, including the use of some sort of an electronic device that would warn pilots they were approaching a tower even under conditions

of extremely poor visibility. He said ATA was interested in marking guy wires, but was even more concerned with identification of the main structure.

Colonel A. B. McMullen, NASAO representative, also called for the committee to investigate means of improving marking and lighting of tall structures. He said that state aviation officials had "intimate knowledge" of aircraft accidents resulting from collision with tall towers, and many near misses, "most of which received little or no publicity."

Marking of guy wires is practically nonexistent, Colonel McMullen claimed, "although these wires are causing an ever-increasing number of accidents." He also recommended that the committee consider the relationship between the location and marking of towers.

The committee was further informed of the results of studies by state aeronautics commissions. Pennsylvania has experimented with the use of large, brightly colored

spheres and highly reflective paint. The Massachusetts commission has recommended the use of an electronic warning device on towers, using 200-400 kilocycles for the purpose. The Minnesota Department of Aeronautics suggests experiments on a permanent array of lights in a ladder-type configuration, the ladders extending from the tower in the center to the points where the guy wires are anchored.

TV Towers in the Sky

The title of "tallest" has been applied to two television towers. One is working its way into the sky. The other is already up.

KWTV, a video station in Oklahoma City, has announced in its advertising that the "world's tallest man-made structure" is now going up at its transmitter site. It will be a 1572-foot tower, using 316,000 watts power.

Meanwhile, WHIO-TV, Dayton, Ohio, is able to boast the world's tallest TV tower, as its antenna stands 1104 feet high—"five times taller than the highest building in Dayton, Ohio."

Tube Warranty Doubled

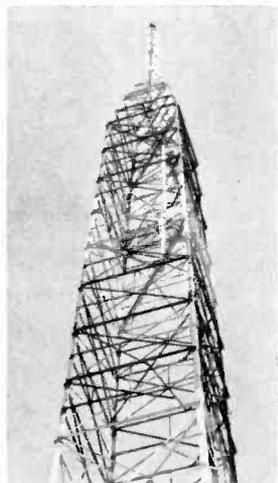
The warranty period for RCA Vidicon television camera tubes purchased for replacement service in broadcast and industrial equipment has been extended to 500 hours, according to a recent announcement by the Tube Division of Radio Corporation of America. Previously the warranty protection expired after 250 hours of service.

The tube types covered by the new adjustment policy are the RCA-6193, for use in industrial closed-circuit TV systems, and the RCA-6326, a broadcast camera tube for televising both color and black-and-white motion picture film.

Under the extended warranty, full credit will be allowed on Vidicon tubes if failure occurs within 500 hours of service. Thereafter, up to the maximum of 500 hours of service, users will be given allowances toward the purchase of replacement tubes, pro-rated according to the duration of use of the old tube. The adjustment period automatically expires one year from the date on which the tube is initially placed in service, or 18 months from the time the tube is shipped from the RCA warehouse.

New Camera Cradle Head

Development of a new cradle head which makes tilting and panning of TV cameras easier and smoother was announced late in July by the Houston-Fearless Corp. The cradle rotates about a constant center of gravity and maintains absolute balance, riding on four phenolic-covered ball bearings mounted in the base.



Station Breaks



Radio Propagation Symposium

A symposium on Propagation, Standards, and Problems of the Ionosphere will be held September 8-11 at the new Boulder (Colo.) laboratories of the National Bureau of Standards. The meeting is being sponsored by the NBS Central Radio Propagation Laboratory, which has recently transferred its headquarters from Washington, D. C., to Boulder.

Papers will be presented on such topics as ionospheric radio propagation, tropospheric propagation, high-frequency standards, microwave standards, microwave techniques and applications, radio systems, radio spectrum utilization, atmospheric radio noise, radio astronomy, and upper atmosphere physics.

Field trips to the High Altitude Observatory at Climax and the Mountain Field Station at Colorado Springs have also been arranged. Information regarding registration and reservations may be obtained from T. N. Gautier of the NBS Boulder Laboratories.

Commercial TV for Britain

A long-standing British Broadcasting Corporation monopoly over England's air waves will end next year when commercial television makes its bow in the British Isles as a rival to the state-sponsored BBC.

The protracted political fight over the government's bill to introduce commercial TV ended recently when the Conservatives put the Act through by a narrow margin. The Socialists, who have opposed the bill, have been supported by trade union and church leaders, sections of the Liberal press, and many prominent literary figures.

The Liberals, in objecting to the measure, have charged that American financial interests and American sponsors were behind the idea of commercial television in Britain. They referred to the bill as a "sell-out" to advertisers.

But even the supporters of the act have insisted on elaborate safeguard measures to prevent it from falling into what they consider the "evils" of sponsored radio and television in the United States. Chief among these safeguards is that there will be no direct sponsoring on the programs themselves, but only brief "spot" commercials between programs.

Red Short Wave Uncovered

Interference on a home television set in Washington, D. C., recently led to the uncovering of an illegal short-wave transmitter on top of the Romanian Embassy.

When their son went to work for CBS, the Arthur Sylvesters, Washington correspondents for the *Newark* (N. J.) *News*, finally decided to purchase a television set. From the very first it acted up, and the Sylvesters decided they needed an aerial. When the technician arrived to install it, Mrs. Sylvester repeated to him a remark of her son that the trouble might be short-wave interference.

The TV expert took a look around when he went up to the roof. On top of the next building, the Romanian Embassy, he spotted short-wave equipment. The discovery was reported to the FBI, the FCC, and the State Department, and within a short time the State Department sent a letter to the Communist legation requesting that the violation cease.

Today when the Sylvesters' television screen goes blank, the family holds its breath until the familiar explanation of "picture interruption due to technical difficulties" comes flashing on.

Texans Hit Forum

A resolution has been adopted by the Texas State Federation of Labor (AFL) to protest to the FCC over the *Facts Forum* radio-TV program.

The program is underwritten by Texas oilman H. L. Hunt. The State Federation resolution has described the show as a "biased program of propaganda" and "a fraud and a misrepresentation."

The union group has asked stations to allot them equal time for rebuttal programs.

New WLWA-TV Studios

WLWA (TV) of Atlanta opened its new, modernistic studios recently with a flourish. The Crosley Broadcasting Corporation station's new building has room for 50 offices and two large studios. The station operates on channel 11 at 316 kw.

Technician-Engineer