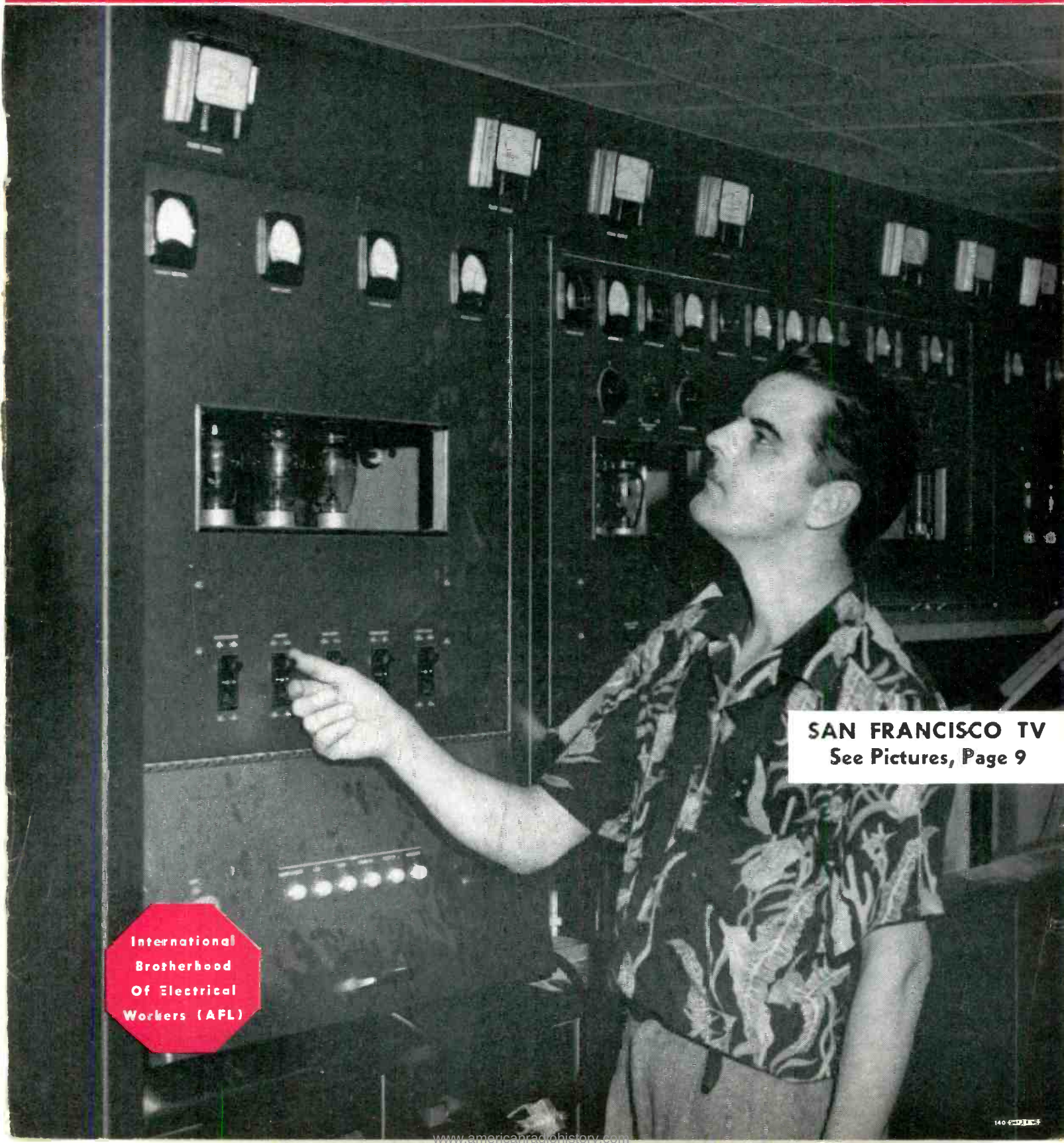
RADIO, TV and RECORDING

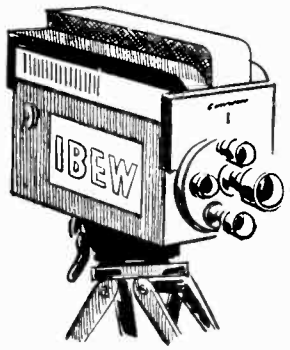
TECHNICIAN-ENGINEER

JUNE, 1954



SAN FRANCISCO TV
See Pictures, Page 9

International Brotherhood Of Electrical Workers (AFL)



A Statement of Policy:

BROADCASTING IS OUR BUSINESS

THERE are two ways of operating a union—from the top, by a labor boss who makes decisions and regiments workers into a struggling herd—or from the bottom, when the union is operated by thousands of thinking members, cooperating with each other, developing policies, carrying them out and delegating duties to their elected officers and holding them responsible for the proper administration of their affairs.

Every member has a part to play—the IBEW will go forward—or go backward—according to the will of the membership. Every one of us, working together—International officers, local officers and members, can go forward together.

No dictum, by anyone, can establish any rights to jurisdiction. The only way to established jurisdictional rights is to organize the people doing the work—time then runs its course and furnishes the necessary element of what becomes an historical background.

Broadcasting is our business—we already have a long history of representation in the field. The IBEW isn't noisy about it—as are some of our would-be competition—perhaps we should make some noise, from time to time. But make no mistake about it—what we have, we're going to KEEP. We also propose to obtain MORE. Our job has really only begun; the industry has expanded so fast and furiously that it is almost impossible to keep up with it. We—all of us—have a responsibility to each other in the organization of all electrical and electronic industry. The broadcasting and recording fields are parts of the electronic world and we are Electrical Workers. We, too, must expand fast and furiously.

In keeping with our basic philosophy, we are not simply interested in jobs, in work or work opportunities yet to come—we are interested in PEOPLE—people who are or should be members of the Brotherhood. We know that the support and cooperation of PEOPLE is the primary ingredient of strength—the strength we all need in bargaining power, leading to the security and well-being of the individual.

We turn a deaf ear to claims about precedents in the entertainment industry—we pay no attention to assertions that because the employes doing certain work for company "X" are members of one union, the employes of all companies doing similar work in another industry must, per se, belong to that union. Some unions espouse the philosophy that JOBS belong to the UNION—the IBEW maintains that a JOB belongs to a PERSON—and the IBEW wants to represent that PERSON in a collective bargaining agreement. The IBEW will continue its best efforts to convince employes in the technical and operational phases of broadcasting that the Brotherhood can best represent them—and the proof of that statement is a matter of our record in the field.

We can do our best only through the help of each other—I solicit the assistance of the unorganized workers as well as that of our members in continuing our steady progress.

J. SCOTT MILNE,
International President.

RADIO, TV and RECORDING
TECHNICIAN-ENGINEER

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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*

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Agreement finally reached after weeks of work; contract continues to lead industry with best wages and working conditions, plus new features.

New CBS Agreement

THERE are some interesting additional features in the new CBS agreement, which covers all of CBS' owned and operated stations and which should be of interest to all our members—indeed, all of those employed in the broadcasting industry should find food for thought somewhere in the document. As has consistently been the case in the past, the employes of CBS can look forward to another two years' enjoyment of the best wages and working conditions in the industry.

A limited number of copies of the agreement will be available upon request to any of the involved local unions or the International Office. However, some of the specific provisions are being printed here in full and others are summarized for the general information of those readers who may be interested.

Meal periods have constituted deductible time in the past, except at New York, Chicago and Boston. The new agreement makes meal period time uniformly non-deductible:

"*Section 3.04. Meal Periods.* No deductible meal periods shall be assigned technicians but a reasonable time for appropriate meals shall be allowed."

Because the 1952 agreement provided that "technicians shall not be required to work more than 7 consecutive regular work days without being given 2 days off . . . " there has been some scheduling of 7-day cycles to change days off. These 7-day cycles are now minimized by a provision of Section 3.05:

"(b) If CBS changes a technician's regular days off, such technician shall not work in excess of seven (7) consecutive days following his previously scheduled days off unless he receives pay at the rate of time and one-half of his regular hourly rate of pay for a minimum of eight (8) hours for each day that is worked in excess of seven (7) consecutive days until such technician does receive two (2) consecutive days off. Such scheduling may not be applied to any technician for more than three (3) successive cycles of seven (7) consecutive working days. Wherever such seven (7) day scheduling has been applied, each period of such scheduling must be followed by at least a 3-week interval during which such scheduling shall not be applied to such technician. The provisions of this sub-paragraph shall not apply in the event that such Technician works on either or both of his regular days off and is paid for such work at the rate of one and one-half (1½) times his regular hourly rate of pay for such work."

Travel Allowances

Some inequities in transportation allowances having been found, in view of the 12½c per mile provision for the use of private automobiles, transmitter allowances are now established as:

St. Louis, Missouri and Chicago, Illinois	$4.00 per week
Novato, California	$5.00 per week
Delano, California	$2.50 per week
Torrance, California	$1.50 per week
Wayne, New Jersey	$1.50 per week
Brentwood, (L. I.) New York	$1.50 per week

Special assignments of hazardous work are also covered by Section 3.08:

"(i) In the event that any technician is assigned to hazardous work, including but not limited to assignments involving fires, climbing on roof tops, climbing aloft on vessels, or on the roof of moving vehicles, work as a war correspondent, flight in any but scheduled commercial aircraft, etc., he shall, for the duration of such assignment, be covered by a personal accident insurance policy, insuring against death and/or dismemberment, in the amount of $25,000.00, and providing for a weekly indemnity in the amount of $100.00,

in the event of total disability, as such term is commonly understood in the insurance field, for a period of fifty-two (52) weeks.

Said benefits shall be payable to the beneficiary designated by the member; failing to designate a beneficiary, such indemnity shall be payable to the estate of the member. Premiums shall be paid by the employer.

The insurance provided herein shall be in addition to any Workmen's Compensation Insurance, or other protection required to be carried by employer by any federal, state or municipal law.

In the event that any such technician is carrying personal insurance insuring against death in an amount in excess of $25,000.00 and the risk necessarily incident to his assignment would result in voiding such personal insurance, such technician may decline the assignment."

Section 3.09 shows the result of great efforts to correct inequities and to fairly compensate the employes:

Length of Service	Effective 5/1/54	Effective 5/1/55
0-3 months	$85.00	$85.00
3 months to 1 year	90.00	90.00
1 year to 2 years	104.00	104.00
2 years to 3 years	118.00	118.00
3 years to 4 years	132.00	132.00
4 years and over	162.50	165.00
Assistant Supervisors	180.00	182.50
Technical Directors	190.00	190.00
Supervisors	190.00	190.00
Assistant Technicians	78.00	78.00

Temporary employes for construction only shall be paid the proper prevailing NECA area rate for such construction work and they shall work under the applicable conditions in the NECA area contract.

After Midnight Work

In addition to the foregoing weekly rates of pay, technicians who are assigned to work between the hours of 12:00 midnight and 7:00 A. M. shall receive an additional 10 per cent of their regular hourly rate of pay for all such hours which are worked.

In the application of the wage rates set forth herein, it is agreed that no technician who may be receiving a higher rate of pay than that which is commensurate with his actual length of service with the employer shall suffer any loss in compensation as the result of the execution of this agreement."

The vacation arrangement of the 1952 agreement is perpetuated, with but little change. Those employed on or after April 1st of any year but prior to September 1st receive one week of vacation after 3 months' service, those employed prior to April 1st receive two weeks. For those employed prior to April 1st of the preceding year, three weeks are provided and those employed prior to April 1st of the fifth preceding year receive four weeks of vacation.

Two new features in connection with vacations and holidays appear in the 1954 agreement. The first is a change of definition of the vacation year—the calendar year has been changed to June 1st through May 31st for those employed at New York, Los Angeles and Delano and a new section has been added to provide for 2 holidays:

"*Section 3.12. Holidays.* Any technician who does not receive the day off with full pay but is required to work on Thanksgiving Day and/or Christmas Day shall receive, in addition to any other payment which may be due him for such work, an amount equal to additional half-time for all hours so worked, but in no event shall such compensation be for less than eight (8) hours. It is the intent of this section to allow technicians to have such holidays off, insofar as the operations of CBS may permit."

New Sub-Section for TD's

A complete new sub-section defines the authority and responsibility of technical directors—the first time such has been done in a CBS agreement. Technical directors have also been set apart in the wage scales (see Section 3.09) and they will be paid at the same rate as supervisors.

Provision has been made for more adequate supervision in television master control rooms and in the film service department at New York:

"*Section 4.02.* (d) At New York and Los Angeles, there shall be at least one (1) supervisor on duty in the TV master control room during all operating hours.

(e) At New York, there shall be at least one (1) assistant supervisor for the group of technicians employed in editing and cutting news film. This is in addition to any assistant supervisor assigned to film cameramen."

The 1952 agreement provided for performance of work in a higher pay group by stating: "Any technician who, for a period of 1 day or more, performs the work of an assistant supervisor or supervisor shall receive the higher rate of pay for all time spent in the performance of such work." The 1954 agreement indicates an improvement in Section 4.03:

"Any technician who is assigned to perform the work of an assistant supervisor, technical director or supervisor shall receive the higher rate of pay for all time spent in the performance of such work and, in no event, for any period less than one (1) day."

An improvement is evident in the provision relating to rest periods for technicians assigned to continuously restrictive duty:

"Each technician assigned to continuous restrictive duty to handle rehearsal and/or air shows in studios for a period of more than one and one-half (1½) hours shall be granted a five (5) minute rest period

after each hour. Such rest periods may be coordinated with rest periods given to other groups on the program. In all TV master control and telecine control rooms each technician assigned to continuous restrictive duty shall be granted a ten (10) minute rest period after each three (3) hours of work."

Another new item in the 1954 agreement is designated Section 5.04:

"CBS will not discriminate in matters of transfer, working hours or assignment against any technician because of anything said, written or done in furtherance of the policies and aims of the Union. CBS will discuss with the Union any proposed transfer of any Union shop steward or any Union official prior to such transfer."

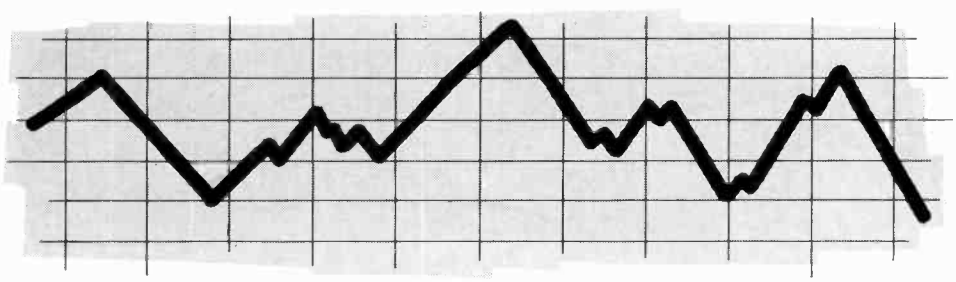
Because of hardships which have occurred in the past, the new agreement contains language which provides that a leave of absence shall be granted for a period not to exceed two (2) years for any technician selected for a position with the Union and, upon his return, he shall be reemployed in the position that he held or in a position generally similar and shall retain full seniority.

So that there can be no further misunderstanding regarding two additional items of compensation, provision has been made for no loss of compensation or of accrued time as the result of a technician being called for jury duty and, in connection with payments for use of a technician's automobile, the agreement states that "He shall be credited with the total mileage from his home through his assignments and back to his home, figured by the shortest route."

There are many other items considered by the Union to be improvements over the former agreement such as an increase in the hourly payment for violation of the 12 hour rest period, increased severance pay for those having more than five years service, rehiring rights after layoff extended to 3 years, a guarantee that CBS will not refuse to assign technicians to locations where some other union claims jurisdiction, the payment of projectionists license fees, etc.

There are some 25 improvements in the 1954 agreement and the parties are looking forward to 2 years of continued peace, stability and harmonious relations. The Local Unions concerned are 45, 202, 1212, 1217, 1220 and 1228.

What's the Trend?



DURING the first 60 days of 1954, 73 agreements or amendments were submitted to the International Office for approval. Some of the following facts, drawn from those agreements, may be interesting to our members and their local unions. The significance of some of this data should be evaluated—for example, dollar figures are not too significant by themselves but should be related to percentages. Similarly, percentages—without mention of dollars—may not tell the whole story.

Those data which are indicated as missing are left blank because the amendment made no change in the previous wage structure or, in the case of some stations, there was a wide or incalculable variation due to the station being newly organized.

Local Union	Station	City	Amdt	Agt	$ Incr.	% Incr.	Term To
1286	WHAS	Louisville		x	$5.00	3.4	10-54
77	KGY	Olympia, Wash.	x		6.00	7.3	8-54
1564	WGWD	Gadsden, Ala.	x		5.00	6.8	12-54
1564	WETO	Gadsden, Ala.	x		2.50	3.3	12-51

Local Union	Station	City	Amdt	Agt	$ Incr.	% Incr.	Term To
715	WFHR	Wis. Rapids	x		5.00	7.2	8-54
1193	WGST	Atlanta, Ga.		x	4.50*		12-54
1220	WLS	Chicago		x	2.50	1.6	10-54
253	WBRC	Birmingham		x	5.00	5.0	8-54
1228	WBZ-WBZA	Boston-Spfld.		x	5.00*		9-54
1304	KGHI	Little Rock		New			12-54
77	KOL	Seattle		x	2.00	2.0	12-54
202	KYA	San Francisco		x	10.00	8.6	11-55
77	KELA	Centralia	x		6.00	7.3	12-54
1178	KENT	Shreveport		x	4.80	7.0	6-55
202	KBIF	Sanger, Calif.		x	7.50	7.5	12-54
1212	WNEW	New York	x				10-55
1215	TRAVE †	Washington		New			12-54
1281	WEAN	Providence	x		6.10	6.0	5-55
1294	WGTH	Hartford	x		6.00	6.0	5-55
77	KOL	Seattle	x		2.00	1.8	12-54
1212	Nola †	New York	x		5.00	5.2	11-54
1287	KAKC	Tulsa		x	10.00	14.0	11-54
45	KLAC	Los Angeles		x	11.25	11.5	5-54
1260	KGMB	Honolulu		New			12-54
45	Radio Rec. †	Los Angeles	x			3.0	9-55
1295	WGRD	Grand Rapids	x		10.00	12.0	9-54
1217	KSD	St. Louis	x		3.80P		11-54
1139	WJMR	New Orleans		New			1-55
1139	WTPS	New Orleans	x		6.50	6.5	11-54
715	WISN	Milwaukee		x	15.00	12.5	10-55
715	WTMJ	Milwaukee		x	15.00	12.5	10-55
77	KRKO	Everett, Wash.	x		6.00	7.3	1-55
1223	WRDO	Augusta, Me.		x	5.00	8.3	7-54
1217	WTVI	Belleville	x		3.80P	3.1	11-54
1217	KXOK	St. Louis	x		3.80P	3.1	11-54
1217	WIL	St. Louis	x		3.80P	3.1	11-54
1217	KSTL	St. Louis	x		3.80P	3.1	11-54
1217	KXLW	St. Louis	x		3.80P	3.1	11-54
1217	WEW	St. Louis	x		3.80P	3.1	11-54
1217	WTMV	St. Louis	x		3.80P	3.1	11-54
1217	KSTM	St. Louis		New			
1218	WXYZ	Detroit		x	5.50	4.0	12-54
1139	WLWA	Atlanta		New			1-55
1217	KWK	St. Louis	x		3.80P	3.1	11-54
1212	WHLI	New York	x		12.50	17.8	10-55
1077	WIKC	Bogalusa		x	10.00	16.1	11-54
202	KJBS	San Francisco		x	7.50	6.2	11-54
715	WEMP	Milwaukee		x	15.00	12.5	10-55
715	WOKY	Milwaukee		x	15.00	12.5	10-55
1400	WCBM	Baltimore		x	15.00	13.6	2-55
202	KTIP	Porterville	x				5-54
715	WMIL	Milwaukee		x	15.00	12.5	10-55
715	WFOX	Milwaukee		x	15.00	12.5	10-55
292	WTCN	Minneapolis	x		6.00	5.5	10-54
1178	KCIJ	Shreveport	x		7.00	8.5	12-55
1213	WDZ	Decatur, Ill.		x	3.00	4.2	1-55
1286	WKYW	Louisville		x	15.00*		2-55
77	KTAC	Tacoma	x		5.60	6.7	9-54
1292	WPEO	Peoria		x	3.00	4.2	12-54
1292	WGIL	Galesburg, Ill.	x		3.00	3.7	8-54
202	KYNO	Fresno		x	5.50	6.2	6-54
202	KECC	Pittsburg, Calif.	x		7.50	3.0	2-56
1215	WOL	Washington	x				1-55
77	KXRO	Aberdeen, Wash.	x				3-55
77	KPUG	Bellingham, Wash.	x		6.00	6.6	3-56
1287	KRMG	Tulsa		x	6.25	7.8	3-55
1178	KRMD	Shreveport		x	9.00	11.0	11-54

P—Health & Welfare Plan, 9½c/hour.
*—Wage progression (escalator) shortened.
†—Recording Company.

The whole of the area of collective bargaining, according to figures recently computed by the AFL, produced general wage increases in 1953 averaging about 8 or 9 cents per hour. Increases involved in this tabulation are somewhat inconclusive, however, because several elements are not taken into account. For example, agreements were included which had terms as short as 6 months and others which were written for as long as 2 years. The conclusions also included, on an unweighted basis, cents-per-hour increases without regard to their basic wage. Hence, a 10 cent increase was noted as it applied to a $50.00 base salary with the same impartiality as was a 10 cent increase on a $100.00 base.

Holidays With Pay Usual

Further surveys of collective bargaining agreements reveal the interesting fact that while provisions for holidays with pay were relatively uncommon only a few years ago but are now included in more than 90 per cent of union agreements. The number of holidays has also been increasing steadily. The current trend is toward 7, 8 or more. The AFL notes that, in some industries, a majority of agreements now provide 7 or more specified holidays.

The practice of negotiating an extra paid day off for a birthday is gaining considerable popularity. This is an item rather rarely found in broadcasting agreements, but has considerable merit in that and comparable industries. There are undeniable advantages with respect to employe morale, according to management's view, and several companies are favorably inclined toward such proposals since only a limited number of workers are "off" on any given day, as opposed to one which calls for release from work or extra-payment for all workers. Nonetheless, the holidays almost universally recognized by special agreement provisions are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas. The seventh day is usually Washington's Birthday or Armistice Day and the eighth day is usually Columbus Day or Lincoln's Birthday.

Wage And Hour Division Issues Formal Opinion On Rest Period Pay

AS THE result of several similar inquiries from Local Unions the International Office has requested and received a ruling on the subject of shortened-rest-period compensation. Mr. William R. McComb, Administrator of the Wage and Hour and Public Contract Divisions of the United States Department of Labor has clarified the application of the Fair Labor Standards Act with relation to this subject.

The basic question is whether premium payments for work performed prior to the end of a specified rest period have an effect on overtime compensation in cases where an employe is entitled to such "rest period pay" during a week in which he works more than 40 hours. Mr. McComb's ruling states (in part):

> "It is the position of the Divisions that payments of this kind [i. e., 'rest period premium pay'] are similar to 'call-back' payments and as such may be excluded from an employe's regular rate of pay. They may not, however, be offset against statutory overtime. A discussion of 'call-back' pay may be found in Section 778.7(e) of the Interpretative Bulletin, Part 778*, issued by the Divisions."

The meaning of overtime being "offset" is explained at some length by the Fair Labor Standards Act and the Interpretative Bulletin. For example, an employe whose salary is $80 per week, with half time being the rate set forth in an agreement for shortened rest period pay (i.e., $1 per hour) an employe who works 44 hours during a workweek involving a rest period being shortened by four hours should receive $80 for his base pay, $12 for his overtime pay and an additional $4 for the shortened rest period. Since "half-time" premium pay is sometimes coincident with overtime hours, questions occasionally arise as to whether the Union is attempting to "pyramid overtime." Such is not the case—in the above example the $4 cannot be considered to be included (offset) in the $12 payment for overtime. Such an employe must receive a total of $96 for the week.

Payments Affecting Regular and Overtime Rates

Certain other payments *do* have an effect upon the "regular" rate of pay (and, therefore, the overtime rate). For example, work performed during "undesirable" hours, is often subject to the premium usually referred to as "night differential." An agreement which provides for an additional 10 per cent payment for work performed between midnight and 8 a. m. has a direct effect upon the "regular" hourly rate of pay of employes who work such hours. If an employe performs 40 hours' work during such hours, with a "regular" rate of $80 per week he should receive a total of $88 for the hours so worked. Should he work four additional hours during the "night differential" period his "regular" rate of pay is $2.20 per hour; 44 hours times $2 per hour equals $88, plus $8.80 (10 per cent night differential) equals $96.80; dividing by 44 hours equals $2.20; hence, his overtime compensation is $13.20 for such four hours. If all the employe's work hours are during a day shift, his regular rate of pay is $2 per hour and four overtime hours would be compensated for in the amount of $12.

Should he work 20 hours of "day shift" and 24 during the night differential period his overtime compensation (for the four hours of such) could be calculated as follows:

Twenty hours times $2 per hour equals.....$40.00
Twenty-four hours times $2.20 per hour equals. 52.80
Total.....$92.80
$92.80 divided by 44 equals $2.109, his "regular" hourly rate of pay for that week.
$2.109 times one-half equals $1.054, his overtime (half-time) hourly rate for that week.

Four hours at this latter rate equals $4.216. Added to the $92.80 (calculated above) makes a total of $97.01, the employe's gross pay.

An alternative method of computing overtime pay

* This Interpretative Bulletin may be obtained by writing to the Wage and Hour and Public Contract Divisions of the U. S. Department of Labor, Washington 25, D. C. There is no charge made for the Bulletin.

where an employe works at two different rates of pay during a workweek, is to pay time and one-half the regular rate of pay applicable to the overtime hours, i. e., if the four hours after 40 occur in the day period the overtime rate would be $3 per hour; if such four hours occur in the night differential period the overtime rate would be $3.30 per hour. However, this alternative method cannot be used unless there is an agreement or understanding between the employer and the union in advance of performance of the work that this alternative method will be used.

Pay Hike For 17,000

New gains worth more than 9 cents an hour have been won for 17,000 factory employes of the Radio Corporation of America, Lawson Wimberley, assistant to President J. Scott Milne of the Electrical Workers, has announced.

The gains, achieved after an eight-day bargaining session in Washington, include an over-all 3 per cent wage increase, inequity adjustments and insurance improvements. The workers represented by the IBEW comprise a majority of RCA's production employes, and work in seven plants throughout the country.

Reading Time

Effective Radio Ground-Conductivity Measurements in the United States, *by R. S. Kirby, J. C. Harman, F. M. Capps, and R. N. Jones, National Bureau of Standards Circular 546, 87 pages, 84 maps, 65 cents. (Order from the Government Printing Office, Washington 25, D. C.).*

Maps are presented in this Circular showing the results of effective ground-conductivity measurements made by various broadcasters and consulting engineers throughout the U. S. The need for such detailed maps has long been realized. Over 7,000 radials are shown on the maps, and provisions have been made for entering new measurements, as results become available, for possible future publication.

Since 1947 the NBS has been cataloging effective ground-conductivity measurements obtained from the files of the Federal Comunications Commission. A study of over 7,000 determinations made in the standard A. M. broadcasts band was made to see if there was a relationship between effective ground conductivity and surface soil composition.

The study showed little association of effective ground-conductivity with soil type. Previous effective ground-conductivity maps have been prepared on the assumption that the values of effective ground-conductivity are fairly highly associated with soil types; the use of such maps has shown them to be inaccurate in many cases. The present publication was designed to help correct this situation.

Techniques of Television Production, *by Rudy Bretz. McGraw-Hill Book Co., 330 West 42nd Street, New York 36, N. Y. 474 pp. $10*

The author of this book is a former CBS-TV producer-director and WPIX-TV New York production manager, and now a TV consultant. The aim of his book is to bridge the gap between the creative production man and the technically-minded engineer. It discusses the principles underlying equipment and techniques. Since much of this is basic, it should not become obsolete through new technical developments. The book is well illustrated with photos and diagrams. It discusses the camerman, cameras, camera handling.

Television Broadcasting, *by Howard A. Chinn. McGraw-Hill Book Co., 330 West 42nd Street, New York 36, N. Y. 700 pp. $10*

In this additional book published by McGraw-Hill, the reader will find a comprehensive, practical guide to the technical aspects of television. The book runs through equipment, systems and facilities in a typical broadcasting station, in studio, and in a mobile unit. It devotes much space to good engineering practices.

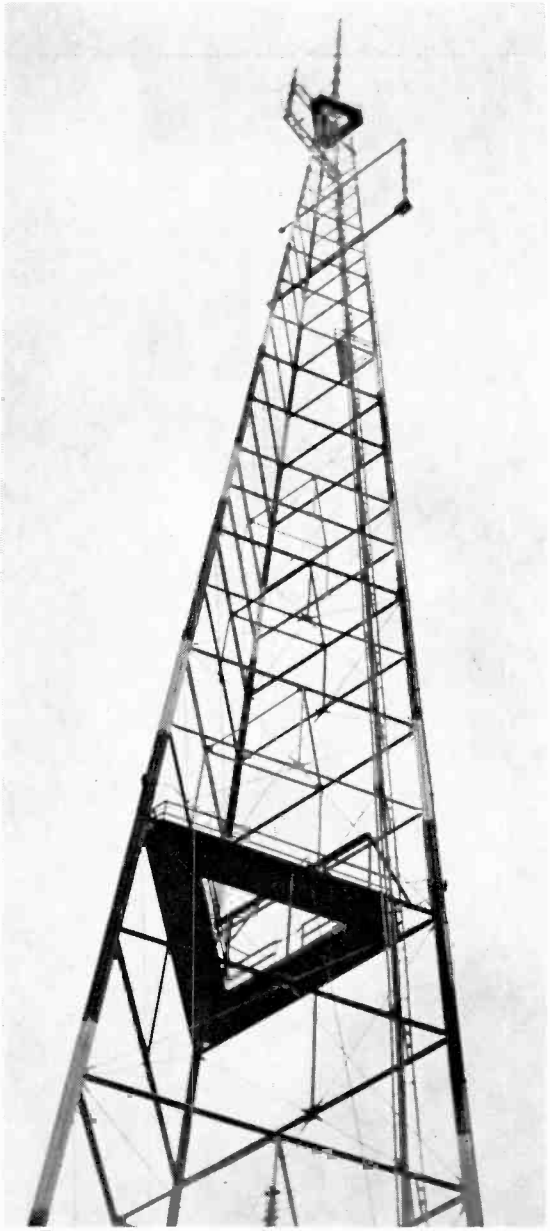
Introduction to Color TV, *by M. Kaufman and H. Thomas. John F. Rider Publisher, Inc., 480 Canal Street, New York 13, N. Y. 140 pp. Paperbound. $2.10*

In this publication the fundamentals of the NTSC color TV system are described for the service technician, the student, and for others with some knowledge of electronics. In addition, basic questions which a layman might ask are answered. Chapters deal with color fundamentals, the color TV system, tricolor tubes, and color TV receivers. It is illustrated with diagrams and photos, some in color, of course.

Highlights of Color Television, *by John R. Locke, Jr. John F. Rider Publisher, Inc., 480 Canal Street, New York 13, N. Y. 140 pp. Paperbound. 99 cents.*

For the person looking for a summary of color television as it stands today in a small, low-priced publication, this book offers an answer. It treats the highlights of color video on a level understandable to persons already familiar with black and white TV. Based on the NTSC color system, the material places emphasis on the color receiver. Illustrated with diagrams.

San Francisco Television From Atop Mount Sutro

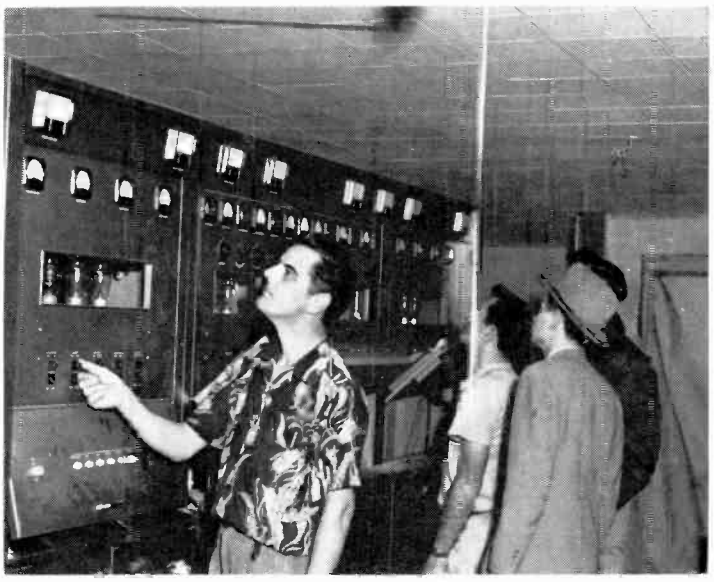


THREE IN ONE—KSAN-TV shares a tower atop Mount Sutro with two other stations of the area. Antenna to left, KPIX; one to right, KSAN-TV; and top rig, KGO-TV.

SAN FRANCISCO'S first UHF station, KSAN-TV, which went on the air this spring, is manned largely by members of IBEW Local 202. Under 202 jurisdiction are the technicians, floormen, film cutters and editors. The station's transmitter is atop Mount Sutro, where the station shares a tower with two other Bay City stations. Here are pictures of the KSAN-TV operation.

The station is owned by S. H. Patterson. Programming is built around sports activities, including telecasts of all night ball games played at home by the San Francisco Seals and Oakland Acorns.

EXPLANATION—Norwood Patterson, right, manager of KSAN-TV, explains the intricacies of the side band filter and duplexer for Channel 32. International Representative Marvin Larsen and Business Manager Jack Dunn of Local 202 listen.



READINGS—Supervisor Hal Simpson and Technician Leo Neshaman check the transmitter readings, while Station Manager Norwood Patterson looks on. All technicians are members of Local 202.

COLOR TELEVISION . . .

How It Looks to Me

Color video is locked-in at dead center, says the top man at CBS; the way we see the world on the end of a picture tube, shouldn't happen to a dog.

FRANK STANTON

President,

Columbia Broadcasting System, Inc.

THE dramatic values and greater impact of color television are such as to tempt me to repeat what others have already said about this exciting new medium of mass communication. Great as television is today, and I believe it has already demonstrated its amazing powers to inform and entertain, the fact is that we see the world on the end of the picture tube solely in the gray scale of values from black to white. I am told this is also the way a dog sees the world—in only black and white. I don't think this should happen, even to a dog.

With respect to television, at least, we have been living in a dog's world. As a series of printed letters or as an articulated sound on the radio or as a combination of the two on black and white television, *blue*, for example, is nothing more than a word. On the color tube, *blue* is precisely the *blue* it is—and the *blue* you see. Color television wholly eliminates the complex process by which you take a black and white image into the dark room of the brain and print the true color picture which the eye actually sees. Thus color television adds speed and clarity, greater impact and more information, to very image. And curiously enough, color adds a lifelike third-dimensional depth quality to television. Putting it another way, color tells more in less space.

Right now it looks to me as though color television is on dead center. It is in a locked-in situation because of the interdependence of the problems of the manufacturer, the broadcaster, and the advertiser.

In my judgment, the key to the lock is the color tube. Insofar as the set is concerned, today's television market is conditioned by two things: the size and efficiency of the picture tube and the price of the receiver. Despite the far more compelling aspects of color, it is unrealistic, I think, to expect today's viewer or potential viewer to be satisfied with anything less than these standards in an instrument which sells at a price much higher than he has been accustomed to pay. The receiver manufacturer is clearly alert to this condition, and in the absence of a color picture tube of

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The present status and immediate prospects for color television were described by Dr. Frank Stanton, president, Columbia Broadcasting System, Inc., at the Symposium on Color Television, at the meeting of the American Association of Advertising Agencies, held recently at White Sulphur Springs, W. Va. Because his remarks contain much of the meat of the current problems of color video, we offer you excerpts from his address at this meeting.

size and price comparable to the 17- and 21-inch black-and-white tube, he will be slow to get production rolling. Production schedules for color receivers have had to be revised downward pending the development of larger tubes.

It may be interesting to examine why the cost of a color receiver is so high. There are two elements involved. The first is the higher cost always encountered with the development of a new product. New types of components are required and these must be expensive until they are produced in great quantities.

The second expense factor is the inherent complexity of the circuits involved in color television. The black and white broadcast standards set up by the Federal Communications Commission were designed for the most efficient possible use of the limited spectrum space required by the type of information to be transmitted—namely, the black and white signal. In order to provide a color signal, it was necessary to fit and squeeze additional information into the nooks and crannies of the standard black and white signal in such a way as not to disturb reception on black and white sets. This great engineering achievement was accomplished at the expense of adding considerable complexity to the circuitry. As a result, we now have a color television system capable of delivering an excellent color picture that can be received in color on color sets and in black and white on ordinary receivers; but the equipment, both transmitting and receiving, is complex and expensive.

Present color sets require a minimum of 35 tubes compared with about 20 tubes for black and white sets. The color set also involves twice as much hand work in assembly and uses some components which cost ten times as much as their black and white counterparts. However, the history of black and white television affords an encouraging example of the possibility of simplification of circuitry and the reduction in the cost of the components. Once the initial hurdle of consumer acceptance is overcome, we shall be well on the way to a reduction of the costs of television receivers.

Lack of Color Sets Noted

In the absence of a substantial set population, the broadcaster finds it practical to undertake only limited programming. And finally, for the same reason the advertiser who is primarily interested in circulation is reluctant to experiment with color television advertising.

This essentially is the nature of the present hogtie, with each group looking to the other to loosen it. Although I have indicated that, in my opinion, the development of a satisfactory picture tube lies at the heart of the problem, I should say that there are presently in the process of development and production various tubes which, according to their proponents, promise to fulfill the necessary conditions of size, performance and price. I can tell you of least one such tube—the CBS-Colortron "205"—so named because its picture area is 205 square inches. This is contrasted with the 99 square-inch picture area of the color sets now being offered commercially. Because of the simplicity of construction of the "205," it offers not only a larger picture than has been commercially available up to now, but also presents the opportunity for more economic production.

I am persuaded that the commercial availability of the CBS-Colortron "205" in large numbers in the second half of this year will get the production of color sets off dead center and initiate the process of consumer acceptance and cost reduction that will rapidly lead to mass output. The importance of the "205" is that it is superior in performance and economy of construction to other tubes potentially available this year.

With our new CBS-Hytron picture tube plant at Kalamazoo nearing completion, we are in an excellent position to proceed on large scale manufacture of color picture tubes. That plant will be the world's most modern facility for the production of picture tubes, both color and black and white. It will double our picture tube production capacity.

Merits of CBS Color Tube

However, I would like to emphasize at this point in holding out the merits of the CBS-Colortron "205," I do not wish to imply that we will not go along with any other tube that fulfills the requirements of size, picture quality and price. Our relationship to the problem of the color tube is the same as our relationship was to the problem of a satisfactory color television system. CBS' fundamental position, stated publicly in 1949, toward a color television system, was that we would "support any system which best suits the problem, no matter by whom invented, no matter by whom suggested." This position applies equally to the color tube.

At the same time, the mere appearance of such a tube is not sufficient in itself to enable the set manufacturer to go full steam ahead. What is primarily required is the settlement of the question facing the manufacturer as to which tube will be generally adopted by the industry. At this moment the leading tube manufacturers, including our own tube division as I have indicated, are engaged in the development and production of picture tubes holding out this promise. It is therefore understandable, I think, that a certain degree of confusion should exist among the receiver manufacturers concerning which of these tubes they should commit their investment to. Nor should we minimize the cost of this investment to the set manufacturer. Tooling-up and getting production started on a mass level can run to several millions of dollars.

The major implication that flows from these circumstances seems to me obvious. Once a tube is developed which satisfies the criteria of size, efficiency and price,

there is a clear need for coordinated action among the different branches of industry involved if further deadlocks in color television are to be avoided. This cooperative action is mandatory if only out of self-interest, since it is these three groups—the set manufacturer, the broadcaster and the advertiser—who have the largest stake in the tremendous potential which color television affords.

Burden of Broadcasting

I recognize that for the present the main burden of color programming must fall on the shoulders of the broadcaster. The heads of the two leading television networks have already outlined their plans for spearheading this exciting news service. By fall of this year, over 100 stations will be equipped and ready to carry these programs. I also recognize that my proposal for coordinated action on the part of the set manufacturers does not resolve the fundamental problem of producing a type of color tube which will earn the support of a substantial part of the industry. I believe this is still the primary knot that has to be untied. Precisely how much longer it will take to untie it I am unable to say, but I suspect it will be sooner than most people think.

In short, this is how it looks to me: we have gone through a long and expensive period of technilogical development and have brought out of the laboratories a workable television system capable of delivering color pictures of exceptional quality, while still permitting 30 million sets now in the homes of the American people to receive a high quality black and white picture.

This development has opened the way to the greatest and most revealing medium of entertainment and information the world has known—a prospect which in turn leads to what Jack Van Volkenburg has previously described as "the ultimate in advertising value."

Let me say categorically that there is no doubt in my mind that the time will come when all television will be in color. I have been asked to give you a timetable for its arrival. I regret to say there is no timetable, since there is no inexorable rate of progression toward the moment that I regard as certain. You don't invent by the clock or calendar.

The history of invention reveals that for those developments which have had broad social importance, two stages can be recognized. The first, or laboratory stage, includes that group of inventions which enable the machine to function. The second, or commercial stage, involves that group of inventions which transforms the machine from its primitive, rudimentary form into an efficient, high-performance, and universally employed device.

Second-Stage Evolution

The automobile is an example of this type of evolution. The first, or laboratory stage at the turn of the century, brought forth an internal combustion engine installed in a buggy. Today the automobile is still an engine and a buggy, but with certain notable differences —the pneumatic tire, the four-cycle engine, the self-starter, the shock-absorber, the geared or hydraulic drive, and the automatic transmission. All of these differences emerged during the second, or commercial stage of development.

It is well to remember that color television is right now only on its way out of the laboratory. It has probably been carried farther in the laboratory than any invention of comparable significance. It can now be expected to enter the same process of improvement and cost reduction that has historically characterized such devices as the automobile and radio after they entered the commercial stage.

We cannot expect to bring forth color television in its ultimate stage of perfection at one fell swoop, like Athena sprung full-grown from the forehead of Jupiter. What we can hope for, and what we are on the threshold of achieving, is a degree of performance and reliability that makes the widespread acceptance of color television inescapable. The acceleration of this end-result is likewise inevitable if only because of the inherent appetite of the public for color television, the technical probability of satisfying that appetite, and the contribution which color television will make to our national economy.

One Moment Please

In Kentucky a radio newscaster fluffed his lines. Said he: "The Stork Club located on Seventh Street here in Louisville has had its leer and bicker license revoked. . . ."

In Massachusetts, an announcer reading a commercial came out with this: "No matter how small the matter is with your car, you can depend on Blank's garage making a major repair."

EDITOR'S NOTE: Mail your tale of woe to The TECHNICIAN - ENGINEER, International Brotherhood of Electrical Workers, 1200 Fifteenth Street, N. W., Washington, D. C.

Single-Gun Color Tube Needed, Says McDonald

Every color television receiver now on the market will in all probability be made obsolete by the development of a practical, single-gun color tube, Commander E. F. McDonald, Jr., president, told stockholders of Zenith Radio Corporation at their recent annual meeting.

Today's color receivers are equipped with a three-gun color tube that produces an 8½ by 11½ inch picture, and that "is a Rube Goldberg contraption if there ever was one," he said. "It is costly and difficult to build, and its many imperfections make it the one major obstacle to development of practical and economical color receivers."

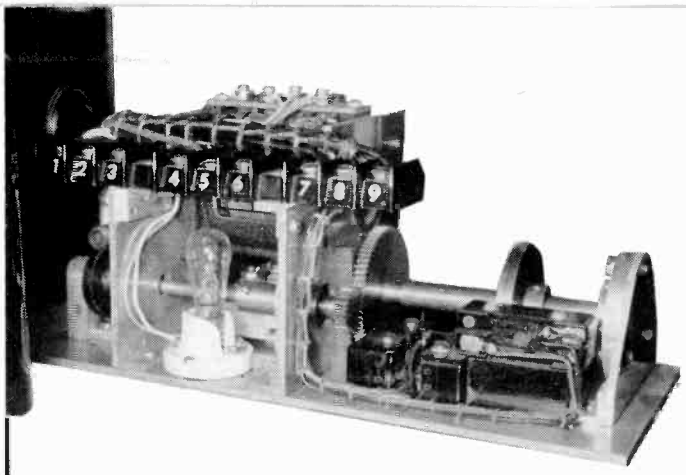
Every manufacturer knows that the industry has not yet developed a suitable color tube, or one that approaches being suitable, he continued. "That's no secret in the industry, but it seems to be a secret that has been kept from the public. He quoted Dr. W. R. G. Baker, vice president of the General Electric Company in charge of the Electronic Division, on the same fact. In a recent speech, Dr. Baker said, "The color picture tube is the bottleneck in the entire system."

McDonald declared that there is more work being done today on the development of color tubes than has ever been done on any one product of the radio and television industry, and that many different manufacturers are working on a single-gun color tube, which when developed will solve the ultimate technical problem in producing efficient and economical color receivers.

"The single-gun tubes," he stated, "when perfected will require different circuits than those used for the present three-gun Goldberg. This means that a color set purchased today will not be able to use the new tube when it is ready."

McDonald said that the public has been, and is being, kidded about the imminence of practical color television, and that there is only one concern in the industry that is urging the immediate introduction of color television with the present inadequate three-gun color tube.

"That company is RCA," he asserted, "which doubtless considers that it has wide patent control over the three-gun tube. It is my considered opinion that RCA would not now be thumping the tub for immediate introduction of color television with the three-gun tube were it not for the fact that the patent licenses under which RCA has collected enormous royalties from other manufacturers in the industry are about to expire."



Local 49 Member Designs Automatic Conelrad Activator

We are told by Civil Defense authorities that every major nation of the world—including the potential enemy, Russia—has the know-how on Conelrad—the plan for broadcasting during an air raid alert.

The principles of Conelrad are simple. The idea is to foul up radio direction instruments, which might be used by enemy aircraft, by switching frequencies and broadcasting erratically from a cluster of stations.

We are convinced, however, that, regardless of the universal knowledge of Conelrad, American genius for producing automatic gadgets will keep this nation ahead of any other.

For example: the automatic activator, shown above, designed by Lloyd Woodell of IBEW Local 49, Portland, Oreg., who is on the engineering staff of Station KOIN. As reported in a recent edition of *The Electrical Workers' Journal*, Woodell's gadget handles the whole Conelrad plan with the flick of a switch.

Lloyd Woodell with his automatic switching device.

Technical NOTES

Transistor Prices Down

The RCA Tube Division has announced a 20 per cent price reduction on two types of transistors intended for use in a wide range of electronic communications equipment.

The reduction results directly from increasing market demands for both types and from stepped-up production which has reduced costs and quickened delivery, the announcement said. The two types are now available in quantity. Both RCA transistors are finding increasing markets among equipment designers, engineers, scientists, and experimenters exploring practical applications of these new electron devices.

The RCA transistors are a point-contact type (RCA-2N33), repriced from $23 to $18.40; and a general-purpose junction-type (RCA-2N34), repriced from $13.40 to $10.75. The point-contact transistor is intended for use as an oscillator at frequencies up to 50 megacycles. The junction transistor, a p-n-p type, is designed for low-power, audio frequency applications.

New Ampex Recorder

An entirely new concept in tape recording equipment is embodies in a model which Ampex distributors unveiled May 22, Harrison Johnston, general sales manager for the Ampex corporation, points out.

"Known as the Ampex '600,' the new machine embodies professional recording standards in a truly portable unit," Johnston said. This means that, for the first time, a home user will be able to make and play recordings on a machine meeting the stame standards as those found in equipment used by major record manufacturers for their master recordings.

The Ampex "600" weighs only 28 pounds, in contrast to the 80-odd pounds of previous equipment having the same performance characteristics. Complete with Samsonite luggage carrying case, the unit measures 16 inches by 14 inches and is 8 inches thick. The recorder is priced at $545, approximately half the cost of previous machines in its class.

The "600" is able to record and reproduce in natural balance the entire audible frequency range from 30 to 15,000 cycles per second, which means that anything from the lowest notes of a bass viol to the overtones of an oboe can be recorded with complete realism. Dynamic range of the instrument is more than 55 decibels so that whispered voices can be recorded without interferences from background noises or a full orchestra can be recorded without distortion.

RECORDER—The Ampex 600 features a built-in mixer, a tape speed of 7½ inches per second, a weight of only 28 pounds, and other innovations which makes it an important contribution to the broadcasting industry. For the full story on the "600" see the story below.

Tape on the machine moves at a speed of 7½ inches a second, the lowest speed which will permit this complete realism in recording, Johnston said. Since most machines with equivalent performances have tape speeds of 15 inches per second, the "600" will use only half as much tape.

Among the unique features of the recorder is a built-in mixer which will enable a user to record from a microphone at the same time he is recording from a radio or record changer. Thus, he will be able to add his own commentary to a musical program.

Before releasing the "600" for public sale, Ampex engineers tested units for the equivalent of more than

10,000 hours of normal usage. A special "board of review" consisting of broadcast engineers, recording engineers, audio-visual education experts, artists and prominent high-fidelity music enthusiasts were given machines to test under normal conditions in all sections of the country. Many of the suggestions from this testing program have been incorporated in the machines being offered the public.

Battery Stores Sun's Energy

A solar battery—described as the first successful device in converting useful amounts of the sun's energy directly into electricity—was demonstrated recently at Bell Telephone Laboratories. The battery is still in the experimental stage, but it holds promise for the future.

It uses strips of wafer-thin silicon about the size of ordinary razor blades, extremely sensitive to light, which can be linked together to deliver power from the sun at the rate of about 50 w per square yard of surface.

In a demonstration, the experimental battery was used to power voice transmission over telephone lines and to provide power for a transistor radio transmitter carrying both speech and music.

Bell scientists report achieving a 6 per cent efficiency in converting sunlight directly into electricity, pointing out that this compares favorably with the efficiency of steam and gasoline engines and is better than the usual photo-electric device with an efficiency of about 1 per cent. Improved techniques can be expected to improve the present efficiency of the solar battery substantially.

Color Signal Generator

Development of inexpensive equipment for use in television stations to expedite installation and performance checks of color television receivers in homes while black-and-white programs are on the air was announced recently by RCA.

The new device, called a color signal generator, was developed by engineers of the RCA Service Company. Use of this equipment by television stations will enable service technicians to check color set reception during normal servicing hours, without waiting for color signals which may not be available on a scheduled basis at convenient times.

The new inexpensive color signal generator can be installed at low cost by stations already equipped to carry network color programs. It also can be easily installed at the time other stations modify equipment to permit transmission of color programs.

The color test signal is a narrow vertical yellow-green bar which is visible at the extreme edge of color receivers but is practically unnoticeable on black-and-white sets.

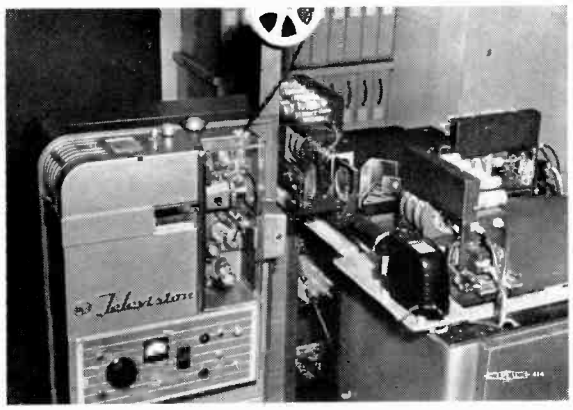
By utilizing station breaks, the equipment could be used to provide regular color reception checks every 15 to 30 minutes without loss of sponsored programming time to the station. He also listed the following advantages:

Tests have proved the color signal is not objectionable to viewers of black-and-white program; the system will provide periodic checks on station transmitting equipment; the plan provides for a color test signal which may well become a national test standard with which service personnel will rapidly become familiar; and the owner of a color receiver can observe the color signal to determine if his color set needs service in advance of color broadcasts.

Plans are under way to make the device available through RCA's Engineering Products Division.

Smallest Microphone

Altec Lansing Corporation of New York has announced development of a new M20 Lipstik microphone. The new instrument is described as "the smallest on the market." It measures three inches in length and five-eighths of an inch in diameter and is said to be capable of perfect performance for radio, TV, and public address use in lapel, breast pocket, clipped to a manuscript or hand-held.



NEW "3-V" CAMERA for televising color motion picture film and slides, major programming elements in color television broadcasting, employes three RCA Vidicon pickup tubes and a light-splitting optical system in arrangement illustrated by this developmental model. Color image produced by film projector (left) is focused on the first of two dichroic mirrors mounted at angles in front of projector. This first light-splitting mirror reflects the blue portions of the image to the Vidicon in center background, but transmits the red and green portions to the second mirror. The latter transmits the green picture elements to the Vidicon in right background, but reflects the red portions to the one in right foreground. Small vertical element mounted in front of second mirror is a filter which screens out unwanted infrared wavelengths and passes only the visible red light. Each of the three Vidicon chassis generates a signal representing its own color portion of the original image.

Station Breaks

'Copter-Covered TV News

Something new in mobile units has been added to the equipment of station KING-TV, Seattle, Washington—a Hiller 12-B helicopter to cover spot news all over Western Washington.

Members of IBEW Local 77 employed at the station will be checking out on many an assignment in the flying windmill, according to station plans.

"A helicopter," says Charles Herring, the station's news director, "is the only possible means of getting out to the scene of a story quickly, being able to land at the spot, and being able to return right to our studios with the pictures."

The station has a private heliport above its headquarters building. The helicopter is leased from Helicopter Service and Sales Company.

Washington CLU Buys FM

The AFL Central Labor Union in the District of Columbia recently became the first labor group to join in ownership of WCFM-FM, Washington co-op station, which has amended its by-laws to include such organizations. Other Washington union groups are expected to buy stock in the station. Other WCFM stockholder groups include five local cooperative groups, a credit union league, a group health plan, and an art center workshop.

The Washington CLU comprises 104 AFL locals with a total membership of 155,000. WCFM's station break will now be "Washington's Co-op Labor Station." No change in the staff is planned.

WEFM, Chicago, and Hi-Fi

The Zenith FM station in Chicago, WEFM, has been participating in high-fidelity demonstrations conducted by its parent organization, the Zenith Radio Corporation. The demonstrations are conducted at Zenith's new hi-fi showroom on Michigan Avenue in Chicago to show hi-fi enthusiasts just what the company's high fidelity equipment can do.

For purposes of the demonstration, IBEW engineers employed at the WEFM studios in the Field Building have broadcast special programs of high-fidelity recordings illustrating the upper and lower limits of the best musical reproduction available in the hi-fi field.

Trouble With Lucky Numbers

The Social Security Administration wishes promoters of "lucky numbers" contests, heard over several radio stations across the nation, would use some combination of numbers other than those on Social Security cards.

Radio stations using the "lucky numbers" idea broadcast a combination of numbers which might match those on a person's Social Security card. The holder of such a card would win a prize.

After the start of these contests, a Social Security official states, the SSA is plagued by a large number of applications for new Social Security cards. Many of these applicants are housewives who have no intention of joining the working force, SSA said. The agency suspects that many others are from workers seeking cards under another name in order to have two chances at winning the lucky numbers contest.

KTTV Decision to NABET

Local 45's attempt to win representation of 73 KTTV-TV Hollywood, Calif., employes away from NABET in a recent NLRB contest was unsuccessful. NABET won by a vote of 49 to 18, with one vote cast for no union. The station unit consists of engineering and technical employes, including lighting engineers.

UHF in Crisis

FCC Commissioner Frieda Hennock has made some recommendations to improve the "squeezed" situation in UHF:

- Impose an immediate freeze on all grants of new VHF construction permits and allocations of VHF channels.
- Cut back the power and antenna height of VHF stations to approximate the coverage which UHF stations may presently obtain.
- Require that VHF transmitters be located "in close proximity to the principal community to be served and the station's service confined to the area which would not overlap the coverage of UHF stations in other communities."
- Remove the excise tax from UHF-equipped receivers.