RADIO, TV and RECORDING

TECHNICIAN-ENGINEER

JANUARY, 1955

1955

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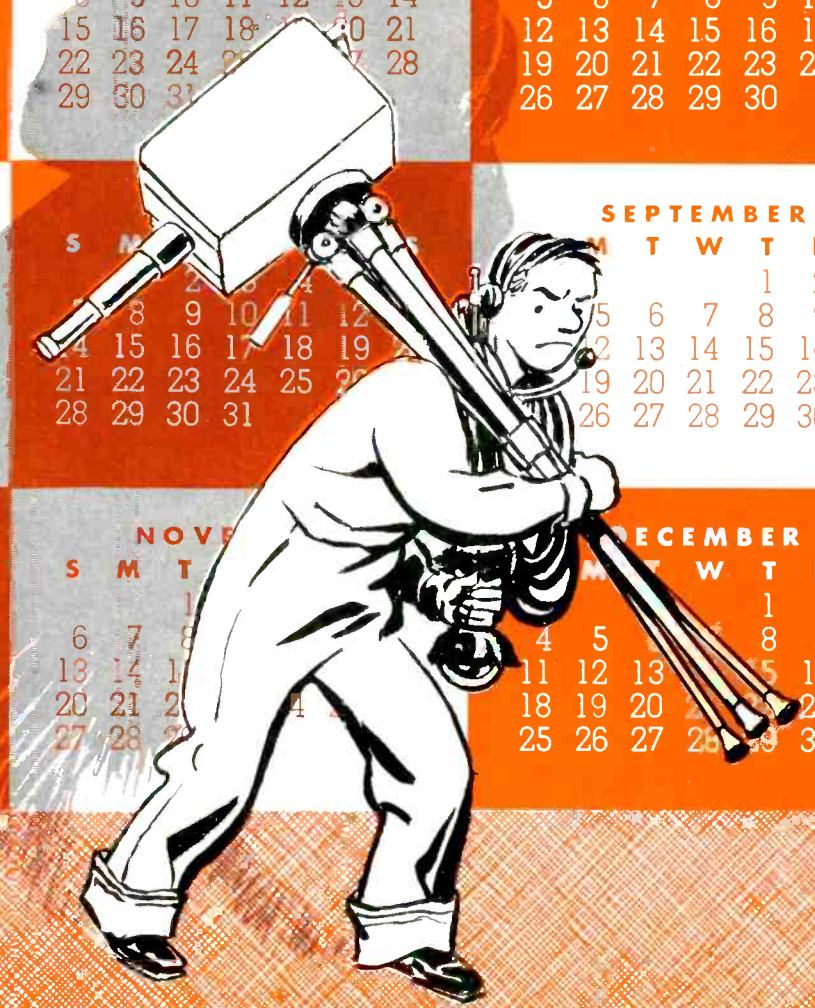

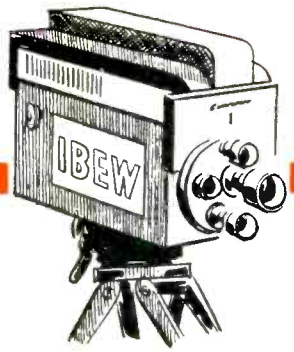

COMMENTARY

Dedicated To Your Service

WITH this issue, we enter our fourth year of publication of this monthly magazine. We have tried to make each issue approach being a cross-section of technical information, news of the activities of our Local Unions, digests of new agreements, wage trends, new laws and statutes, new interpretations and decisions of government agencies, and so on.

Sometimes we find a plethora of items and articles—at other times, it would appear that a famine has taken place. We always need stories and pictures, preferably those which are not published somewhere else. If all our material is duplicated by another publication, there is no need for our trouble and expense.

The general acceptance of our magazine has been wonderful. Many public libraries and several university libraries have, at their requests, been put on our regular mailing list. Our members have consistently praised it and it has been a great aid to organizing work—more importantly, it has served as a link between our members and our Local Unions. To those who have taken the trouble to write about it or to speak about it, our thanks. To our all-too-few contributors, our special thanks. And to our members, correspondents and readers everywhere our best wishes for a

HAPPY AND PROSPEROUS NEW YEAR!

Assassination By Extension

THE lead editorial in the December 27, 1954, issue of *Broadcasting-Telecasting* magazine goes far afield to suggest that "suspicions are now bound to be aroused against other unions" as the result of allegations of sabotage in connection with the NABET strike at KPIX, San Francisco. The question is posed, "What is to prevent others [unions] from taking like action elsewhere?" Perhaps inadvertently, the editorial answers this question before it is asked, since a prior part of the editorial states "It [today's broadcasting] is a business which demands of its employes a high degree of skill, intelligence and judgment." Obviously, the allegations at KPIX—which are indefensible if proved — have not changed the quality of responsibility of the thousands of individual employes in this industry and the many respected and reputable unions which represent them.

Thus is a tenuous web, spun from a single incident in San Francisco, made to encompass all employes of the industry. We deplore the unfounded assumptions made by the editorial in *Broadcasting-Telecasting* and the completely unwarranted effort to make all unions and their members subject to suspicion. This is the highly questionable and generally unpopular technique of guilt by association; character assassination by extension.

RADIO, TV and RECORDING
TECHNICIAN-ENGINEER

VOLUME 4 NUMBER 1

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*

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Prognostications for '55

The past year was an earth shaker in more ways than one. One war stumbled to an end, and another grew more heated. There were revolts in Central America, North Africa, and the Middle East. Television became more spectacular and radio more determined. What will the coming months bring?

On December 29, just two days before the new year, Drs. Beno Gutenberg and Charles Richter, seismologists at the California Institute of Technology, reported to an unconcerned world that 1954 was an average earthquake year. They had recorded only 20 major earthquakes during the past months.

They had hardly spoken before the ground shook around Eureka, Calif., 500-odd miles to the north, and their instruments shook again. Half-way around the world old Stromboli began burping.

Indications were that 1955 would be a real earth shaker. Even the leaders of the broadcasting industry seemed inclined to use the superlatives of their Hollywood cousins!

Some Industry Comments

▶CBS Radio started 1954 with 219 AM affiliates and 90 FM. It begins 1955 with 221 AM and the same number of FM affiliates.

▶Americans will require more than 5½-million new picture tubes for their TV sets in 1955 and the industry will produce about 6-million additional tubes for new sets. That was the prediction of J. Milton Lang, general manager of General Electrical Company's tube department. This prediction is half a million tubes higher than the record year of 1953.

▶Radio as a whole is headed for a period of "long-term growth," Adrian Murphy, CBS Radio president, predicted in a year-end statement. Murphy expects TV's inroads on radio listening will diminish, with increased use of radios in cars and public places.

▶Frank M. Folsom, president of RCA, reported that RCA-Victor unit production and sales of TV receivers during 1954 surpassed 1950, which had been the top year in these categories for the company.

▶A total of 213 domestic TV stations carried DuMont shows during 1954, which is the largest total of any TV network, states Ted Bergmann, managing director of DuMont. In 1954 the interconnection picture improved for DuMont, with 193 stations connected to the coaxial cable and microwave facilities.

Predictions In Color

▶Frank Folsum, president of RCA, predicted an outstanding sales volume for his company during the coming year, with "a substantial upward trend." In 1955, he added, "the development of color into its commercial phase will move ahead"—which seems quite natural.

▶Dr. Allen B. DuMont, president of Allen B. DuMont Labs, has predicted that 1955 will be "primarily a black-and-white year" as far as television is concerned. He said 1955 looks about 99 per cent black and white, and that production of color receivers during the year will not exceed 50,000 units.

▶DuMont offered this year-end report on color: Closed-circuit color experiments have been conducted at DuMont Tele-centre in New York City since July. An hour each Sunday evening is devoted to color programming, when color shows from film are aired over WABD. Some 80 DuMont affiliates are reportedly equipped to telecast in color.

▶Economic activity during 1955 not only will surpass last year but there is a strong possibility it may even exceed the previous record set in 1953, according to officials of Sylvania Electric Products Inc.

Sylvania officials said that activity in the electrical-electronics industry is "extremely strong," and that 1955 will see the industry "take a major step toward doubling its volume over the next nine or 10 years."

Sylvania's defense business during 1954 amounted to approximately 25 per cent of total sales, according to the officials, compared with 22 per cent in 1953. The current backlog of unfilled defense orders totals about $85 million, against $90 million at the 1953 year-end.

Labor Takes a Cautious View

▶While the tycoons of industry were predicting great things for 1955, labor takes a more cautious view. AFL President George Meany took a look at the rising stock market and other factors and told the AFL Legislative Council that "the current boom in Wall Street is not all good from our point of view."

He also said, "We can't fathom how things are going to be better" in 1955 economically if unemployment rises as predicted by a number of economists.

Meany was more optimistic about the outlook in the new Congress for improvements in legislation supported by labor. Meany said, "We should not be pessimistic" even though there is not a pro-labor majority in Congress from the AFL point of view.

He foresaw the possibility of an increase in the 75-cent-an-hour minimum wage, an increase in Federal aid to school construction, an increase in public housing construction legislation and "a pretty fair" pay increase for Federal workers.

On the rise in the stock market, which has been going up rapidly since the beginning of November, Meany said, "we know what has happened before, after similar Wall Street booms." He said he is not predicting a collapse as in 1929 but that "the picture in Wall Street does not always reflect improvements in the condition of the American people—merely improvements in business prospects."

He said there is "a funny thing about all of these New Year predictions put out by the big business group—they all say that the prospects for business are good, that the profit picture will be better, but at the same time that we will have more unemployment."

Meany indicated the AFL will concentrate in trying to get Congress to pass an amendment to the Taft-Hartley Act overriding so-called state "right-to-work" laws.

He said the AFL also will ask again that Congress raise the 75-cent minimum wage to $1.25. The White House is expected to ask for around 90 cents an hour.

You Can Be Sure It's Westinghouse

The first television station sales transaction in U. S. history took place in July, 1949, in Seattle, Wash. At that time P. K. Leberman sold KRSC-TV to Mrs. A. Scott Bullitt and associates for $375,000.

As video moved from 12-inch screens, to 17-inch, to 24-inch, and productions moved from 1927 movies, to Arthur Godfrey, to Sunday-night spectaculars, the going price for television stations began moving up too. The following year, 1950, WOIC(TV) Washington, D. C., changed hands for $1.4 million and became WTOP-TV.

The record sale for 1953 was $8.5 million for WPTZ(TV), Philadelphia, bought by Philco from Westinghouse.

The year just ended, however, Westinghouse has been the standout. During 1954 Westinghouse made two major station purchases in the millions:

In July, KPIX(TV) San Francisco was sold by Wesley I. Dumm and associates to Westinghouse for $7.5 million.

In December, 1954, WDTV(TV) Pittsburgh was sold by DuMont to Westinghouse for $9,750,000.

TV Profits Surpass Radio During '53-'54

It's a year since it all happened, but here's the FCC's report on broadcasting profits from June, 1953, to July, 1954, which has just been released:

Radio and television stations and networks took in an all-time high of $908,000,000 in 1953.

Their income was up 14.3 per cent from 1952, and their expenses rose 15.7 per cent, the FCC said.

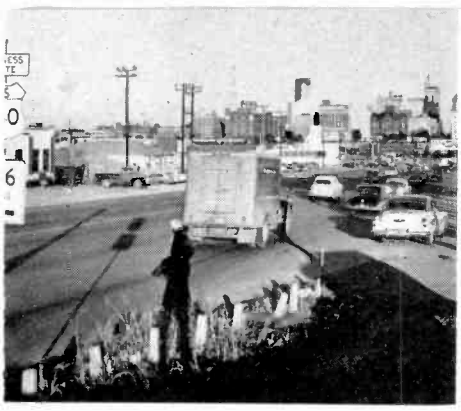
The broadcasting industry's profits for the year totaled $123,000,000, a 6.4 per cent gain over 1952. The profit figures are before payment of Federal income taxes.

The FCC said 1953 was the first year in which profits of TV stations and networks exceeded those of the radio broadcast industry.

Radio stations and networks reported a profit of $55,000,000 before Federal income taxes in 1953, a drop of 8.4 per cent from 1952.

Profits of television stations and networks totaled $68,000,000 before Federal taxes, a gain of almost 23 per cent over 1952.

Revenues of the radio broadcast industry in 1953, were $475,000,000 and for the television broadcasting industry were $432,700,000. Total expenses were $420,300,000 for radio stations and networks and $364,700,000 for TV stations and networks.



Traffic into "Big D" is often heavy coming in from Fort Worth on U. S. 80. Here cars merge in a vast traffic pattern at West Commerce Street. The KRLD tower can be faintly seen near the center of the picture.

WE MEET IN Dallas IN '55

The Fourth Annual Progress Meeting of the IBEW Radio, TV, and Recording Division will be held in Dallas, Tex., June 17, 18, and 19. Sessions are scheduled for the Baker Hotel in the heart of the Southwest metropolis. Division leaders are now preparing a full agenda of work for delegates. Your local union should be planning for it now. Every local should be represented at this all-important get-together, so that we can coordinate nationwide organizing and bargaining activities. Mark the dates on your calendar NOW!

Division Prepares Organizing Booklet

The many benefits and services of membership in the IBEW have been dramatized and distilled into a little pocket-sized, 12-page booklet just issued by the Radio, TV, and Recording Division of the Brotherhood. Called, *What's Your Future?*, the little publication should be a powerful selling medium for locals actively organizing.

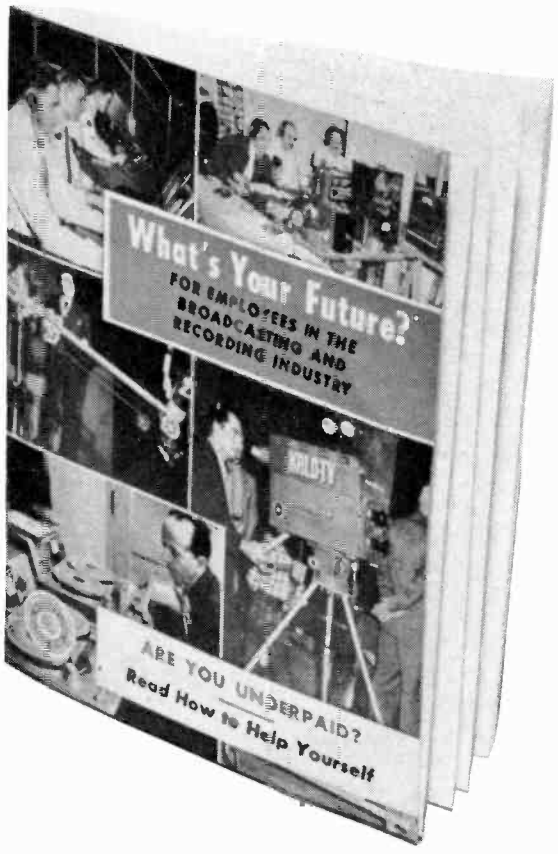
Beginning with a listing of the job classifications covered by the broadcasting division, the booklet answers just about every question a non-union technician or engineer might ask. The back cover of the booklet is a detachable postcard certifying willingness to be represented by the IBEW.

In the closing pages there is a letter from International President J. Scott Milne, offering an invitation to "come and join us."

He says in his opening remarks, "In my long experience in the electrical industry, I know of only one organization that is at work every day—all day—to improve working conditions for the men and women who earn their livelihood in this field.

"That organization is the International Brotherhood of Electrical Workers, affiliated with the American Federation of Labor."

What's Your Future? urges the non-member to "join the majority," pointing out that the IBEW is a party to more than 90 per cent of the union contracts for engineering personnel in the industry. IBEW-AFL represents employes in four times as many TV stations and 20 times as many radio stations as all other unions combined.



The cover of the booklet shows various views of IBEW members on the job. There is a caption: "Are You Underpaid? Read how to help yourself." The pages are well illustrated.

Plans of the Division are to distribute sample copies of the booklet to all local unions. Then orders will be taken as needs arise.

Latest NLRB Decisions MAY IN

▸ABC Lighting Case, Hot Goods Clause and Hanford Jurisdiction Decision Mark NLRB Actions as 1954 Closes

RESOLUTION of the recurring problem of who will do lighting work on TV remotes begun with a work stoppage of some seven minutes preceding a football telecast by members of NABET (CIO) employed by ABC in Chicago and reached a conclusion when the NLRB decided that, on the basis of the language of and practice under both the applicable NABET and IATSE agreements, remote lighting is the work of members of the IATSE employed by ABC in Chicago.

Excerpts from the Board's decision make clear its reasons for the determination reached:

> "The Board (later) had occasion to resolve a dispute between NABET and IATSE over the operation of special lighting effects in the National Broadcasting Company, Inc. The Board found that the special lighting effects tasks in question were essentially the same as the handling of television lighting equipment generally and, relying on the determinations in the prior representation cases, held that the disputed work tasks appropriately belonged in the IATSE unit. (103 NLRB 479).
>
> "NABET contends, in effect, that these decisions do not require a finding in this case and that the television lighting tasks here in dispute appropriately belong in the NABET unit in view of certain provisions of the NABET-ABC contract and the Board's decision in NABET-Hollywood Chapter, 105 NLRB 355. The NABET-ABC contract involved in that case provided, as does the NABET-ABC contract here involved, for a 'television assistant . . . who may assist in lighting operations in the field.' The Board held that the NABET-ABC contract provided for the assignment of lighting work on remote telecasts to NABET 'television assistants.' However, the Board also held that as to lighting work on certain remote telecasts, which had formerly been assigned to NABET but which for about a year had been assigned to IATSE, NABET had waived whatever contractual rights it had to the assignments by not protesting the assignment of the work to IATSE until after it had become established practice. In this case, NABET has similarly waived its contractual right to perform the lighting work on remote telecasts."
>
> "The (latter) work, which is the actual subject of this dispute, is characteristically work accomplished by stage electricians of the stage and amusement world, as the Board has had occasion to note in the past in finding that similar work appropriately belongs in an IATSE unit. (103 NLRB 479). In view of the foregoing facts, particularly the history of assignment of the disputed tasks primarily to IATSE we find that NABET has waived whatever contractual basis NABET may have had for its claim for including the disputed work tasks in its unit. (105 NLRB 355)."

The lesson is clear and should be quite significant to all union members—if you *want* the work, *do* the work. Do not waive it and do not allow work to be assigned to someone else without protest. The exercise of jurisdiction is not a matter of theory or of words—it, like many material things, deteriorates and atrophies when it is allowed to lie dormant.

▸Conway's Express Doctrine Reaffirmed by Recent Decision

Quite some time ago, the NLRB found that neither the signing nor the application of a "hot goods clause" in a contract was in violation of the ban of secondary boycott, so long as the employer signs such an agreement without a strike or similar pressure having been exerted upon him. The decision of the Board was subsequently upheld by the U. S. Court of Appeals at New York City. Thus, the "Conway's Express" case (87 NLRB 972, 195 F. 2nd, 906) gained recognition as an established decision and was given weight as an important precedent. In June, 1953, the Board reaffirmed the doctrine of the Conway case in the *Pittsburgh Plate Glass* decision.

Early in 1954, the McAllister Transfer, Inc. case (110 NLRB No. 224) was argued before the Board. The employers involved attempted to induce the Board to specifically overrule the doctrine it had established in the Conway case. Members Rodgers and Beeson indicated their agreement with this argument of the employers. In their view, the "hot goods" clause is contrary to public policy. These two members failed, however, to convince either Mr. Murdock or Mr. Peterson of the validity of their conclusion, thus leaving the decision of Chairman Farmer as the critical one.

In the McAllister case, the employers notified their employes that the companies have a duty as common carriers to serve all their customers and directed the employes to handle freight "without discrimination as to shipper." Despite this notice, Chairman Farmer finds that the employes were induced not to handle the goods and thus the secondary boycott ban was violated. The refusal to handle goods from or to McAllister Transfer, because McAllister had not signed an agreement with the Union and employed non-union employes, was illegal—since the action was taken in furtherance of an unlawful objective. Mr. Farmer points out that a violation can occur when pressure is put upon the employer through his employes, as was his finding in this case. He distinguished between the Conway and the McAllister cases and, in effect, joins with Members Murdock and Peterson in reaffirmation of the Conway doctrine. It is quite likely that the McAllister decision may be utilized by many common carriers, which are required by law to serve the public without discrimination. Two courts

HAVE EXTENDED APPLICATION THE BROADCASTING INDUSTRY

have ruled that "hot goods" clauses do not relieve common carriers of their obligation, under the law, to a company involved in a labor dispute.

▸Hanford Decision Amplifies July, 1954, Administrative Decision

Since August, 1953, the representation case which was initiated by petition of Local Union 202, San Francisco has been before the NLRB in Washington. On December 9, 1954, the Board issued a five-page decision which expressed the declination of the Board to assert jurisdiction in the case. Accompanying the decision Members Peterson and Murdock dissented from the majority decision to the length of seven and one-half pages.

Involved was the one-kilowatt KNGS, Hanford, Calif., an independent Radio Station which operates on 620 kc. The Board's primary consideration in the case appears to be the fact that the gross revenue of the Station for the first seven months of 1953 was approximately $85,000 but the majority opinion noted that the operations are so local in character that the purposes of the Act would not be served by the exercise of the Board's jurisdiction, in accord with this contention by the employer.

The majority opinion stated, in part:

> "Early this year the Board undertook to study and reappraise the 1950 jurisdictional standards, in the light of the Board's experience since their adoption and also in the light of changing economic conditions. Based upon that study and reappraisal, it is our opinion that the jurisdictional standard enunciated in *WBSR, Inc.* should be revised so that the Board's long established policy of limiting the exercise of its jurisdiction to enterprises whose operations have, or to which labor disputes would have, a pronounced impact upon the flow of interstate commerce can be better attained.
>
> We have determined that in future cases, the Board will assert jurisdiction over radio and television stations and telephone and telegraph systems only if the gross income of the particular enterprise amounts to at least $200,000 annually. (To the extent that *WBSR, Inc.* and cases relying thereon are inconsistent with our decision herein, those cases are overruled.)"
>
> ". . . According to the Supreme Court, the legislative history of the Taft-Hartley Act demonstrates that Congress 'decided to limit the [featherbedding] practice but little by law,' and that Section 8 (b) (6) was intended to have only a narrow effect and to be little more than a stop-gap until the Lea Act had been construed by the Supreme Court and more study had been given to the general problem of 'featherbedding' in the industry. In keeping with its own similar interpretation of the legislative history, the Board decided in 1951 that Section 8 (b) (6) 'was not intended to reach cases where a labor organization seeks actual employment for its members, even in situations where the employer does not want, does not need, and is not willing to accept such services.' This interpretation, accepted by the Supreme Court, long since rendered Section 8 (b) (6) innocuous."

Mr. Murdock, in the shorter of the two dissenting opinions, stated:

> "For the basic reasons set forth in my dissenting opinion in *Breeding Transfer Company*, 110 NLRB No. 64, I must also dissent from the refusal of the majority to assert jurisdiction herein. The $200,000 gross annual receipts test now adopted for cases involving radio and television stations, and telephone and telegraph systems in place of the former policy of taking jurisdiction of all such instrumentalities of commerce, subject only to *de minimis*, strikes me as particularly unwarranted. The criticisms of Member Peterson as to the defects and hazards of such a standard are well taken and I join therein. The correctness of his position is so well established without reliance upon the comments of industry representatives in 1953 which he cites, and as I have doubt as to the extent to which they can be utilized, I do not myself rely upon them.
>
> Like Member Peterson, I take exception to the majority assertion that the Board *and* the Supreme Court have rendered Section 8 (b) (6) 'innocuous.' The Court can speak for itself but it seems to me to be preferable that the Board enforce the sections of the Act, whether they be stringent or mild, as written, rather than simply denying recourse to the Act at all."

Mr. Peterson's dissenting opinion emphasizes that radio and television stations and telephone and telegraph systems are "the clearest example of instrumentalities and channels of commerce." A consideration of the monetary standards of jurisdiction led to his following statements and conclusions:

> "I am unable to agree with either my majority colleagues' refusal to assert jurisdiction in this case or with their establishment of a new standard requiring declination by the Board of jurisdiction over radio stations, television stations, and telephone and telegraph systems whose gross income is less than $200,000 annually."
>
> "*Radio stations:* The new standard will eliminate from the Board's jurisdiction about 80 per cent of the country's radio stations, which receive roughly one-half of the total revenues in the entire industry. Also, almost all radio stations in communities of under 100,000 population, comprising clear channel, regional, and local stations, will be removed from the Board's jurisdiction, as well as over 70 per cent of all stations serving as outlets for the nationwide networks.
>
> The Federal Communications Commission classifies almost 50 per cent of all radio stations in the United States as regional, unlimited or part-time. Approximately half of these regional stations have, on the average, revenues of under $200,000. Furthermore, none of the unlimited regional stations in metropolitan areas under 100,000 population, nor any of the part-time regional stations, will meet the new yardstick."

We may be sure that we have not heard the last on the subject of monetary jurisdictional standards announced by the Board last summer. The Hanford decision is the first, however, which sets forth the full position of the Board on the subject of broadcasting. (110 NLRB No. 208).

RCA—The image of the young woman, above, is seen on the screen of an electronic light amplifier under development in RCA laboratories. Object on back of table is conventional slide projector, projecting a dim image on back of electronic light amplifier, in foreground, which receives dim image and amplifies it 20 times. Power control unit for the amplifier is seen at right corner of table. New device heralds day of "picture-on-the-wall" TV for the home.

GE—Dr. F. E. Williams (right), head of light generation studies at the GE Research Laboratory, credits D. A. Cusano (left), young GE scientist, with creating the light-amplifying phosphor. As the voltage on this small screen is increased, the projected picture becomes brighter in the manner usually achieved either by increasing the intensity of the projector light or by opening the lens aperture. Experimental screens of this type have amplified images as much as 10 times.

Picture, Picture, on the wall, who

ARE you one of those unfortunate husbands who must move furniture around to satisfy a mind-changing wife? Is one of these items of furniture a big, bulky console television receiver?

Then, take solace from the fact that the wheels and brains of the electronics industry are now producing experimental models of electronic light amplifiers . . . which in time will likely result in "picture frame" television.

What's "picture frame" television? It's video and audio, courtesy of a little flat box hardly larger than a TV picture screen, which you can move about as you please. It'll probably be a collection of printed circuits, transistors, and a viewing screen of supercharged phosphors. You'll be able to frame it and hand it on the wall or suspend it like a mobile from your solar-energized, living room ceiling. You might even connect it to one of these rollaway ceiling gadgets and pull it down to your easy chair to hold it like a book.

We're serious about all this, as you no doubt know.

Once that happens, the wife will only have to say, "Honey, would you put a nail up on this wall? I want to hang the television here for a few days."

The Institute of Radio Engineers at their Spring Meeting and Show in New York City held the first formal discussions relative to such a television receiver unit. At that time the assembled engineers envisioned a rectangular glass block as the home TV receiver of tomorrow. On the face of the block would be the picture screen. Inside would be the receiver chassis, employing components greatly reduced in size.

To these ends, Sanders Associates, an electronic research and development company, displayed a TV receiver chassis employing printed circuits—a refinement destined to bring increased economy in space as well as in production costs.

Close on the heels of the IRE meeting, Crosley Cor-

BRIG. GEN. DAVID SARNOFF studies an electronic light amplifier now under development in the RCA Laboratories. Using principles of electronic light, the RCA amplifier is expected to glow more brightly during 1955. General Sarnoff called the electronic light amplifier, perhaps, the most significant development in the industry during the past year.

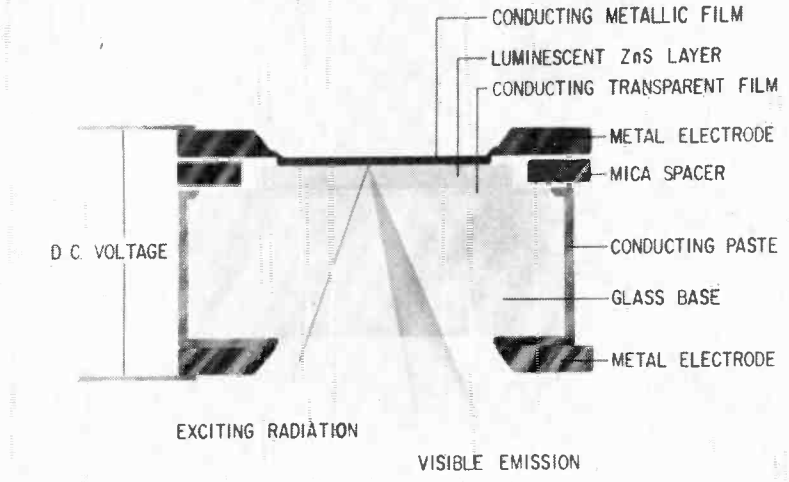
Two major electronics manufacturers are currently running a breathless race to achieve the first "picture-on-the-wall" television receiver. Their results are gratifying, but the question (like the one from the Fairy tale) remains . . .

's the fairest . . . ?

poration launched the move toward reduced set size with a receiver in which the components are stacked up around the picture tube, rather than laid out flat in the traditional style. The resulting chassis is smaller in overall size and weighs 39 pounds.

Two giants of the electronics industry—RCA and GE—both unveiled developments in 1954 destined to make TV-on-the-wall nearer reality.

LIGHT AMPLIFICATION CELL



SCHEMATIC DIAGRAM shows the elements of the special phosphor cell developed by GE scientists to achieve direct amplification of light, without use of tubes.

BEFORE AND AFTER. These two photographs were printed simultaneously, without any special photographic manipulation, from negatives made consecutively on a roll of 35-mm film with the same camera, using the same lens, lens opening, and exposure time. The picture was projected on the small screen with a lantern-slide projector, and neither the light source nor the lens opening of the projector were altered between the two exposures reproduced here. The striking brightness increase in the picture on the left was produced by the electronic light amplifier.

Dr. C. G. SUITS (center), GE vice president and director of research, demonstrates an early model of the light amplifier. With him are Dr. F. E. Williams (right), head of light generation studies at the Laboratory, and D. A. Cusano (left). Dr. Suits emphasizes no immediate applications should be anticipated and that the present importance "lies in the new knowledge involved."

On December 21, at General Electric's Schenectady, N. Y., Research Laboratory, the long-sought scientific goal of direct amplification of light without the use of electronic tubes was demonstrated.

In the words of Dr. C. G. Suits, GE Vice President and Director of Research, "discovery of this light amplifier may be the clue to achieving 'picture-on-the-wall' television screens."

Although the new scientific phenomenon may have great importance in the future of television, X-ray fluoroscopy, photography, "seeing-in-the-dark" devices and other developments involving reproduction of picture

images, Dr. Suits emphasized that no immediate application should be anticipated.

The importance of the GE demonstration lies in the new scientific knowledge involved in achieving light amplification for the first time in a simpler phosphor film. GE's experimental screens, made of a special phosphor to which an electric field is applied, have given off 10 times as much light as that projected on them.

In their experiments the scientists increased the brightness of a projected photograph by passing an electric current through a special phosphor cell used as a viewing screen. An ordinary lantern-slide projector was employed, and the picture was a regular photo slide. The small screen reflected a yellowish image when an ultra-violet light source was used in the projector.

As the voltage on the screen was increased, the picture became brighter in the manner usually achieved by increasing the intensity of the projector light or by opening the lens aperture. Neither the light nor the lens was altered, however, and the picture—which at first was barely visible—became many times brighter and clearer.

During the over-all brightening of the projected picture, the contrast remained virtually unchanged—thus demonstrating proportional amplification.

GE scientists pointed out that their demonstration was of a new scientific phenomenon, but because of the small size of the screen (about four inches across), and the limitations in the type of light that can now be amplified, no immediate applications for picture projection screens should be anticipated.

"There may eventually be many practical applications of the light amplifier, but it is no more possible to predict these with certainty now than it would have been to foresee the extent and ramifications of modern radio and television when the first electronic amplifying tube was invented 50 years ago," GE's Dr. Suits said.

The GE demonstration showed that application of electric voltage does not of itself cause the special phosphor screen to give off light. Ultraviolet energy falling on the screen causes a faint glow, but there is no amplification. Amplification occurs only with the combination of both the voltage and the ultraviolet. Proof of true amplification is obtained by measuring the number of photons of light striking the screen and comparing this with the number given off. Increases of at least 10 times have been measured and the GE scientists believe much higher ratios are possible. Because the amount of light reflected is proportional to that striking the surface, it is possible to brighten the intermediate shades of the picture being projected, thus making a brighter picture without "washing-out" the contrast.

Modulation of photoluminescence by an electric field has been previously reported by several scientists both in the U. S. and abroad.

And from RCA, the following announcement concerning study and research in electronic light amplification was made as 1954 drew to a close.

"Light amplification by means of an electronic light amplifier has been achieved experimentally in ratios of more than 20 to 1. When that ratio reaches 100 to 1, a practical amplifier of light will mark a significant step forward in the science of illumination and television."

In the words of RCA's Brigadier General David Sarnoff, "This new form of light amplification—in television—will bring bigger and brighter pictures and will revolutionize the medium as we know it today."

RCA, too, saw wide applications for the new knowledge of supercharged phosphors. It foresaw the use of light amplifiers in TV, X-ray, fluoroscopy, and radar.

Asked whether the GE system was similar to that of RCA, GE officials said only that "so far as we know, the phenomenon you're seeing here today is new." They said they did not know whether it was "electronic" in the sense that, if GE receives a patent on its amplifier, rights to the patent will become available to RCA under the GE-RCA patent-licensing agreement.

Canadian Video Reports '53 -'54 Gains

A report just released by the Canadian Broadcasting Corporation indicates that operating expenditures of Canada's publicly-owned television system, including the provision of a basic national program service to affiliated private stations, were $7,364,000 in the fiscal year ended March 31, 1954.

Total television revenue was just over $13 million—leaving a net operating surplus, after allowance for depreciation and obsolescence—of $5,283,000. This surplus is to be applied to the financing of capital projects already underway.

The report points out that the relatively high revenues of TV for the past year are evidence of the keen interest shown by Canadians for the new medium, as measured by the very large number of home receivers sold during the year.

The period covered by the report, April 1, 1953 to March 31, 1954, saw expansion of the television network to include Montreal, Ottawa, Toronto, London and Kitchener, with the provision of programs by television recordings to CBUT, Vancouver and affiliated private stations at Sudbury and Saint Johns, New Brunswick.

Highlight of the year's operations was the achievement of bringing to North American audiences the first television films of the Coronation of Queen Elizabeth II. With the cooperation of the RCAF, RAF and BBC, Canada's publicly-owned broadcasting system supplied Canadian viewers with the first Coronation pictures to reach the continent of North America.

Congresswoman May Seek Congress on TV

Mrs. Martha W. Griffiths, new Democratic Congresswoman from Detroit, is ready to introduce a bill providing for televising House and Senate sessions.

"I realize there would be problems involved, such as choosing just when television should be used," the 42-year-old attorney told a press conference. "But I think televised sessions would give people a better understanding of important issues and they would cast votes on the basis of those issues.

Mrs. Griffiths unseated Republican Charles G. Oakkman in the recent election when Michigan's 17th District voted Democratic for the first time in history. She said during her unsuccessful campaign for Congress in 1952 only about one person in 40 asked her questions dealing with issues. In the campaign just past, one question in four concerned issues," she said.

"TV wasn't entirely responsible for this remarkable change, but it helped," she said. "People have figured out that, in addition to the President, Senators and Representatives have something to do with the way the country runs."

Mrs. Griffiths' husband, Hicks G. Griffiths, who is also her law partner, stood by while reporters asked questions.

He is former chairman of the State Democratic Committee and has been a probate judge in Detroit.

Canadian Parliament Will Be Televised

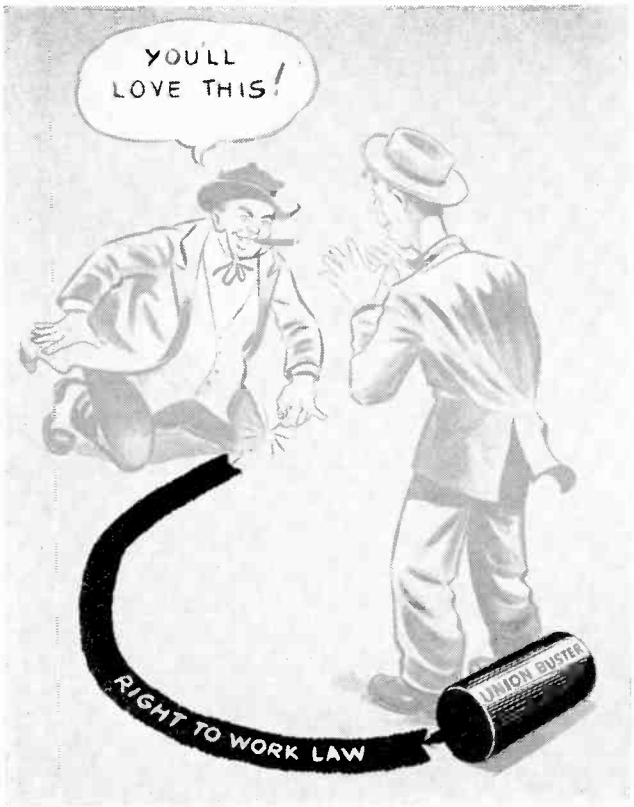
The opening of the new session of the Canadian Parliament, January 7, will be televised live from the Senate Chamber, Senate Speaker Wishart McL. Robertson announced at Ottawa.

Governor-General Vincent Massey, who will read the speech from the throne outlining the government's legislative program, has approved the telecast, the speaker said.

Some Belated Credits To Our Contributors

Despite the best of intentions, we neglected to note in our September issue that several of the photographs of the Third Annual Progress Meeting were taken by Representative W. A. Smith. Our thanks to him for his interest and our apologies for the error of omission.

During recent issues we have used several line drawings and cartoons by Les Krames of KRON-TV, San Francisco. Our thanks to Krames for permitting us to use these examples of his excellent work.



The cartoon above is reproduced from a recent issue of "The Machinists' Journal" . . . used with permission. It expresses vividly the explosive nature of the tenacious campaign of elements of big business to get right-to-work laws on the books.

Right-to-Work Laws Are Called 'Immoral'

At a recent mass meeting in Baltimore, Md., the Rev. William J. Kelly, lecturer at Catholic University in Washington, D. C., denounced so-called "right-to-work" laws now on the books of many states as "immoral." Calling the laws an anti-union "scheme," Father Kelly told unionists assembled at the mass meeting that "the open shop had led to unrest and low wages for the working man, while the union shop has been a stabilizing influence on the American economy."

The Baltimore meeting was part of organized labor's fight to head off business elements pushing the open shop laws in Maryland. Father Kelly is only one of many clergymen throughout the country who have condemned the anti-union bills.

"Right-to-wreck" laws, as they are called by organized labor, are now in effect in 17 states. They are currently being promoted by Chambers of Commerce and other business groups in Missouri, Maryland, Minnesota, Oklahoma, Kansas, and one or two other states.

The mounting encroachment of the anti-union measures was forcefully brought to the attention of the nation last month, when Secretary of Labor James P.

Mitchell called upon the 17 states with such laws to reconsider the legislation because "these laws do more harm than good."

Speaking to the annual CIO convention, Mitchell said that such laws "make it impossible for an employer to bargain collectively with a majority of his employes about the security of their union."

FCC Issues Grant For Alaskan Station

The FCC has granted Northern Television, Inc., a permit for a new TV station at Fairbanks, Alaska, on Channel 11.

The FCC attached a condition to the grant that August Hiebert, president and 16 per cent stockholder of Northern Television, dispose of his interest in the Midnight Sun Broadcasting Corp. and his interest in the estate of A. E. Lathrop which controls Midnight Sun.

The FCC also approved a consolidation of Richard R. Rollins' television interests in Alaska with the radio interest of Midnight Sun.

Rollins will transfer his permits for television stations at Anchorage and Fairbanks to Midnight Sun in return for stock in that company.

Rollins has station KFIA and a permit to build KFIF at Fairbanks.

Midnight Sun owns radio stations KENI, Anchorage; KFAR, Fairbanks; KJNO, Juneau; and KABI, Ketchikan.

IBEW Local 1547 includes personnel employed at Anchorage stations.

Beer's Percentage Of Broadcast Time

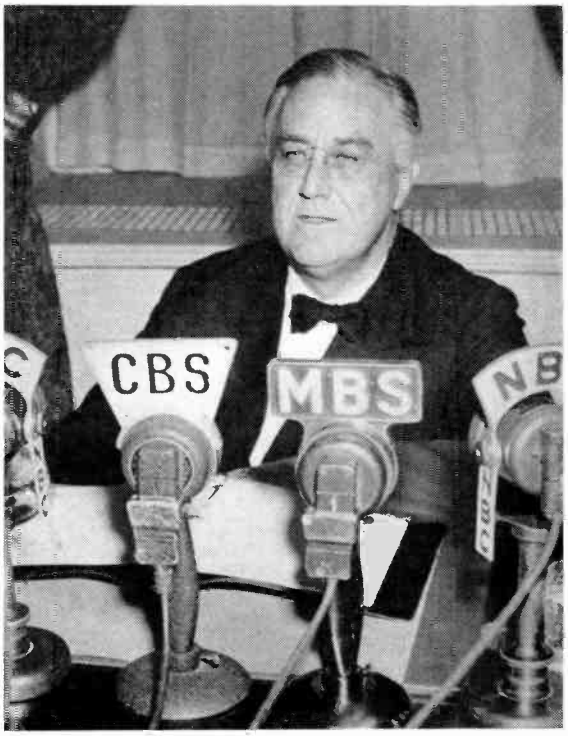
The radio and television industry reports there may be less beer and wine advertising coming into your home than you think.

The National Association of Radio and Television Broadcasters (NARTB) supplied these figures:

Radio—Two per cent of all programs broadcast over radio stations in the U. S. are sponsored by beer and wine advertisers using an actual advertising message time of .21 per cent.

Television—Slightly more than three per cent of all programs broadcast over television stations in the nation are sponsored by beer and wine advertisers using an actual advertising message time of .31 per cent.

The information was compiled at the request of the House Interstate and Foreign Commerce Committee.



BROADCAST—The late President Franklin D. Roosevelt in a "Fireside Chat" from the White House. Surrounded by microphones, he was broadcasting from the Oval Room over the combined facilities of the major networks.

FDR Memorialized With March of Dimes

On January 30, the nation commemorates the birth of its 32nd President with an annual March of Dimes to combat polio. This year, as in recent years, mothers in cities throughout the country will "march" in a lights-on campaign to collect funds to fight the disease. We should like to urge all IBEW members to contribute to this worthy cause. Your contribution is a testimonial to a President who overcame the disease himself even though already in public life.

Born on January 30, 1882, Franklin D. Roosevelt died ten years ago this April 12, while the nation was still at war.

Many of our network technicians and engineers remember the polished ability of the late FDR as he sat down at a desk in the White House and talked to the nation over the combined radio networks. His Fireside Chats always topped the audience rating sheets on those occasions. What a force in national life he would be today, with television as widespread as it now is! A fireside setting, the drawn but thoughtful face, the clear, pointed words . . . coming into each living room . . . new assurances to a troubled nation.

Reading Time

The Hi-Fi Handbook, *by William J. Kendall, Thomas Y. Crowell Co., 432 Fourth Avenue, New York 16, N. Y., 164 pages, 36 illus., $2.95.*

Of particular interest to the non-technical layman outside the electronics field and of more than passing interest to the expert interested in high fidelity systems of sound reproduction is *Hi-Fi Handbook.*

The layman who hears quality music from high fidelity systems is often confounded. He has been told that the average household-brand of music reproduction falls far short of true reproduction. He has then been told the only way he can get good fidelity is (1) buy a completely integrated hi-fi system and have it installed or (2) assemble and install such a system himself.

Few could afford the $1,000-and-up cost of a custom set-up. In the second instance, the layman is soon lost and confused in a maze of resonances, watts, ohm, decibels, feedback and reluctance. Small wonder that initial enthusiasm soon turns to reluctance.

The Kendall book is particularly good because it recognizes (as many hi-fi enthusiasts do not) that there are some individuals who, for reasons best known to themselves (and possibly their bankers) cannot go to the 'nth degree of high fidelity. They wish to stop somewhere short of utter perfection. Kendall has made his book virtually a primer of hi-fi, starting out with chapters devoted to explanatory discussions of components, starting with the speaker and working back through the audio amplifier, turntables, pickups and radio tuners. Basic principles of connecting components are given and even the position of systems in rooms in homes is discussed.

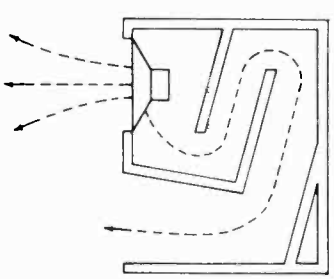
Actual systems are suggested with electives and reasons for the electives are given. Systems are divided into low-cost ($150 and less), medium cost ($200 to $500) and high-cost (over $500) and Kendall does not hesitate to mention brand names although the book cannot possibly be construed as "puff advertising." It simply is recognized that anyone who would be interested in reading the book would be interested in being informed on what brands of merchandise would be suitable for certain installations.

The book is largely non-technical, as befits its potential field of readers, but certain information in the appendix is of more than amateur importance, for example, a complicated formula for figuring the correct size for bass-reflex ports is given (The square root of the area of the port in square inches is equal to the volume of the enclosure in cubic feet times the square of the resonant frequency of the speaker cone in cycles per second, both latter components multiplied by .0004).

Other information on how to determine cone resonance when not specified, layout of speaker enclosures, and how to make simple repairs. In many instances the author cites a trouble, details how to locate and correct it and then sensibly advises: "If the trouble continues to persist, take it to a repairman."

It is entirely possible that many a person of average means who has been longing for the relative luxury of distortion-free, full-range music reproduction will undertake to achieve it after reading this book.

"The acoustical labyrinth enclosure boosts the lows."



The illustration above is one of several on hi-fi speaker enclosures in The Hi-Fi Handbook. The publication is well illustrated, throughout. The language is non-technical.

A Dictionary of Electronic Terms, *Revised Edition. Available from Allied Radio Corporation, stock number 37K756, 100 N. Western Avenue, Chicago 80, Ill., 72 pages, 25 cents.*

This revised dictionary contains over 3,500 definitions of terms used in television, radio and industrial electronics and over 150 illustrations and diagrams of components, equipment and electronic circuits.

Television, Second Edition, *by V. K. Zworykin and G. A. Martin, 1,037 pp., John Wiley and Sons, Inc., $17.50.*

This whopper of a book is a complete revision of the original work, published back in 1940. It reflects the many technological advances that have raised television to a major U. S. industry.

Special features of this new book are detailed discussions of color TV and a comprehensive study of industrial television and related topics. Special emphasis is placed on the two fundamental elements of the TV system—the camera tube and the kinescope.

Wage Regulation in Australia, *by Mark Perlman, New York State School of Industrial and Labor Relations, Cornell University, Ithaca, N. Y., 1952, 30-page book, 15 cents.*

The author's main thesis is that wage regulations have hampered Australian economic development and that her half-century's experience with wage regulations might profitably be studied by the United States.

Come In, Dick Tracy

On December 22 the government published full technical details of a wrist watch radio.

The item covered by the report is a radio receiver, which can pick up messages from 45 miles away. It was developed by the Army Signal Corps.

It works on a printed circuit and three transistors, and plugs into your ear like a hearing aid. There is a one-foot antenna which can be built into the watch strap, but this is not needed in city areas.

The set is powered by a tiny battery—one-half inch wide and five-eighths of an inch long. With slight modifications, the power requirements can be cut, and it might then be possible to make a receiver only half the size of the current model, according to the report, published by the Commerce Department's office of Technical Services.

Solar-Powered Xmtr

A tiny solar-powered experimental radio transmitter the size of a cigarette package has been built by Edward Keonjian, a Development Engineer at General Electric's Syracuse plant. The miniature transmitter was built to stimulate interest in transistors.

The mite-sized transmitter is self-contained, employing transistors instead of electronic tubes and selenium solar energy converters instead of batteries. Range of the unit is approximately 100 feet.

General Electric's germanium products group in Syracuse plans to use the transmitter in transistor application demonstrations. For that purpose 10 more transmitters will be built.

Hi-Fi Amplifier

A new 50-watt power amplifier for high fidelity applications has been announced by the Fairchild Recording Equipment Company, Whitestone, N. Y. The firm claims the model, which measures 12 inches wide, seven inches deep and seven and one-quarter inches high, is the smallest 50-watt chassis now on the market.

The new unit features a self-contained "balance control," permitting adjustment for minimum distortion, proper phase inversion and "dynamic balance" of the output tubes to be made aurally without test equipment, according to the Fairchild Company.

Also announced by Fairchild: A new cartridge series (220), described as "an outstanding innovation in high fidelity magnetic cartridges," and claimed to have higher compliance and "improved characteristics" above other currently available cartridges.

Synthetic Mica Plant

Clifton, N. J., has been chosen as the site for the world's first synthetic mica plant. Now under construction, the plant is expected to begin turning out the important radio-TV raw material early this year. Mycalex Corporation of America is the producer of the synthetic mineral.

Approximately 1,000 tons of high-grade synthetic mica will be produced by the plant. The figure represents 5 to 10 per cent of the United States' current mica requirement. Nearly 90 per cent of the U. S.'s natural mica supply is imported from India. It is feared by defense planners that this source might be cut off in time of emergency.

New Relay Marketed

A new "Series 23" relay, with a flexible armature and adjustable contacts for AC or battery-operated remote control units or for use as a plate circuit relay, is being manufactured by the Kurman Electric Company, Long Island City, N. Y.

The new relay, with coil resistances up to 5,000 ohms available with maximum continuous dissipation of one watt, has 30 milliwatts and adjustable single pole double throw contacts rated at one amp 110 v.a.c., according to the company.

Sylvania During '54

A number of scientific and engineering developments were undertaken and new products introduced by Sylvania Electric Products, Inc., during 1954, the company reports. These included the "stacked tube,"

a revolutionary concept of an electron tube which opens up an extremely broad area of new applications because of its stability under severe operating conditions; a new process for treating germanium, making possible the production of transistors having far greater electrical stability; the "Silver Screen 85," aluminized TV picture tube; continued development work on color picture tubes and color sets; wafer-type transformer coils that lend themselves to rapid production and assembly, a new system of wall-to-wall lighting, known as Sylvan-Aire.

Gates 50 w vhf Xmtr

Gates Radio Company, Quincy, Ill., is now producing a 50 w vhf transmitter. The company believes it is the only manufacturer producing a standard TV transmitter in this low power range.

The transmitter is 84 inches high and 21 inches deep, and it is housed in a cabinet 50 inches wide. Originally developed for the Armed Forces Information and Education Agency for overseas television to the troops, the first Gates 50 w is in use at the Air Force base in the Azores.

The manufacturer has a companion ring-type antenna designed for use with the new unit.

Quick-Tuned FM Set

An automatic frequency control circuit that simplifies tuning of FM stations has been incorporated in Zenith Radio Corporation's new Super-Symphony FM-AM table model radio receivers, it has been announced.

Allowing a leeway of several degrees on either side of the desired FM channel in setting the dial indicator, Zenith automatic frequency control electronically compensates for faulty tuning. When the tuning indicator comes within channel range, the circuit automatically tunes the station in on the center of the channel. Drifting is eliminated, with the station "locked-in" after it is tuned.

A tuned radio frequency stage provides extra AM signal strength and a new degree of selectivity that minimizes interference from adjacent stations.

For FM reception, the set has Zenith's light-line antenna which eliminates the need for FM dipole in primary service areas. Built into the set for AM reception is a sensitive Wavemagnet antenna.

Power Cut Proposal

On December 17, the FCC proposed to reduce the minimum power for television stations in communities of under 50,000 population as a means of stimulating growth of TV in smaller localities.

The FCC proposed 100 Watts as a minimum power for any antenna height. For cities under 50,000 population the minimum now is 1,000 watts at antenna heights of 300 feet above the average terrain. The minimum power now is increased for antenna for antennas below 300 feet in order to provide equivalent coverage.

The FCC said the power cuts should be a further inducement to prospective TV operators to build stations in the smaller communities.

It requested interested parties to file comment by next February 25, including information on plans and costs of low power stations. The FCC's power cut would apply both to a regular station which originates its own programs and to a "satellite" which rebroadcasts programs of a parent station.

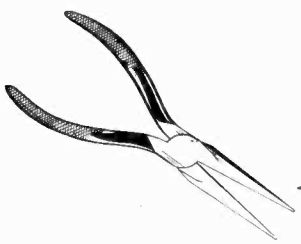
The FCC also sought comments on whether its seven station limit on TV ownership should apply to low power "satellites."

Patents, Just in Case

The color race between the titans of broadcasting, RCA and CBS, took an interesting, but likely, twist, last month, when RCA took out a license for the use of CBS patents on color television tubes.

The action was seen unofficially as a form of protection on the part of RCA, just in case the CBS developments crystallize.

In taking this action, RCA let it be known that it is not manufacturing the CBS color tube but is sticking to its own patented items. The licensing arrangement lasts for five years and includes CBS patents that may be issued on pending applications and future inventions for direct-view color TV picture tubes during the licensing period, as well as for the original direct-view picture tube of the curved-screen type.



HOW ABOUT YOU!

Don't you have a story . . . or maybe some pictures . . . about a gadget developed for your station operation? Maybe you're tinkering in hi-fi or some other phase of electronics. We'd like to pass on to the membership the story of your work . . . your technical notes.

Mail your contribution to Albert O. Hardy, International Brotherhood of Electrical Workers, AFL, 1200 15th St., N. W., Washington, D. C.

Station Breaks

Praise from AFTRA

IBEW Local 202, San Francisco, received high praise from an AFTRA local union recently, for its assistance during a strike at KEAR in the San Francisco Bay area. The letter, reproduced below, was sent to us by 202 Business Manager Ed Bird:

December 13, 1954.

International Brotherhood of Electrical Workers, Local 202
450 Harrison Street
San Francisco, Calif.

DEAR SIRS AND BROTHERS:

Our Board of Directors has asked that we express to you our appreciation of the efforts to your members, individually, and of your representative, Mr. John J. Dunn, in cooperating so closely with us in our strike against radio station KEAR.

From the beginning of the strike on October 5, we have been encouraged and aided by our trade union brothers in the IBEW in every way. Brother Dunn has been extremely helpful to us and we would also like to acknowledge the many efforts of Brother Robert Nissen of your Local.

The spirit of cooperation of the radio unions here in San Francisco should serve as an example of unity to the trade union movement in the United States.

Sincerely and fraternally,

AMERICAN FEDERATION OF TELEVISION AND RADIO ARTISTS,
CHARLOTTE COHELAN,
Executive Secretary.

Texas May Brag

Texas leads all states in the total number of radio and television stations operating and authorized, the FCC has reported.

FCC figures show Texas has 281 AM, FM and TV authorizations.

California ranks second with 245 and Pennsylvania third with 218.

Texas has the most TV authorizations and also leads the AM or standard radio station list. But California has the most FM radio authorizations.

All states now have TV stations operating or authorized, with 48 in Texas followed by 39 in California, 38 in Pennsylvania and 37 in New York.

New York leads in the educational TV field, with seven non-commercial stations authorized.

Among cities, the FCC said, Los Angeles has the most TV stations, with nine. New York and Chicago have the most standard radio stations, with 15 each, and New York tops the radio list with 14 stations.

KCOP-TV Agreement

As we go to press, we are in receipt of the news from Local Union 45 that a new agreement has just been signed at KCOP-TV. The two-year pact, from January 1, 1955, covers engineering, lighting, film and production employes.

Engineering and lighting department wages are on a four-year escalator, with a starting wage of $95 and progressing to $165 during the second year of the agreement's two-year term. Editors and film technicians work on a three-year wage progression, having a starting scale of $92.50 which progresses to $132.50 during the second year of the pact. Stagehands, Stage Managers and Senior Stage Managers will receive $120, $122.50 and $127.50 per week, respectively—flat scales are provided for these people.

Wages during the first year (1955) of the agreement are $2.50 per week below those provided for during the second year, in most cases. All these wages are a substantial boost over the 1954 agreement and are in keeping with the going rate in the Los Angeles area.

Damage at KPIX

The Commission, on its own motion, ordered an inquiry to ascertain whether any of its rules and regulations or any of the provisions of the Communications Act of 1934 (as amended) have been violated in connection with alleged disablement and damage to the equipment of KPIX (TV), San Francisco. The Commission wants to know what damage was done and by whom, which prevented KPIX from broadcasting on December 14, 1954, and expects an inquiry to develop the facts so as to indicate what course of action should be taken by the Commission in connection with these matters.

The Station resumed operations on December 15, employing supervisory personnel to replace members of NABET who went on strike on December 13. On December 23, AFTRA also began picketing KPIX as the result of unsatisfactory efforts to secure an agreement for its members. The strike was finally settled and both AFTRA and NABET went back to work on January 6.