

RADIO, TV and RECORDING

# TECHNICIAN-ENGINEER

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# RADIO, TV and RECORDING TECHNICIAN-ENGINEER

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## The INTERNATIONAL BROTHERHOOD of ELECTRICAL WORKERS

GORDON M. FREEMAN International President  
JOSEPH D. KEENAN International Secretary  
JEREMIAH P. SULLIVAN International Treasurer

ALBERT O. HARDY

Editor, Technician-Engineer

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## ... the cover

The Second Constitutional Convention of the AFL-CIO is top labor news this month. More than 900 delegates from affiliated unions assembled at Atlantic City to act on charges of corruption and other vital problems. Official recorder for the sessions was Sidney Brechner, a member of IBEW Local 1215, Washington, D. C. His work was done for Sound Studios, the organization which handles transcriptions for the AFL-CIO weekly interview series for radio. Sid worked with Harry Flannery and Morris Novik of the AFL-CIO staff to prepare the complete tape job.

## commentary

The potential of educational television is growing increasingly evident. One educational TV class in New York City has especially shown what can be accomplished of a public service nature. The following from *TV Digest* tells the story:

"In New York City at the unlikely hour of 6:30 a. m., New York University and WCBS-TV began on September 23 to telecast "Sunrise Semester," the City's first full college credit TV course (Comparative Literature) consisting of 72 half-hour telecasts. Before the program series began, NYU had received nearly 10,000 requests and at least 500 applications to take the course for college credit (at \$75). It was after the first pre-dawn lecture that Educational TV's pulling power became apparent to booksellers. One store reported a sellout of 1,000 copies of a book used in the class and the publisher stated he was getting rush orders from dealers all over the area."

Educational stations are still handicapped financially, though many commercial television companies are supporting their work by donations of equipment and talent.

## the index . . .

For the benefit of local unions needing such information in negotiations and planning, here are the latest figures for the cost-of-living index, compared with the 1956 figures:

October, 1957—121.1; October, 1956—117.7.

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**IBEW, NABET, IATSE**  
*Express Opposition*  
*To FCC Report and Order*

## FIRES OF REMOTE CONTROL ISSUE STILL RAGE

ON November 19, the IBEW filed another in its long procession of documents in the proceedings involved in the remote-control case which were begun with the petition filed by the NARTB on February 16, 1956. The latest IBEW action was prompted by the NARTB's "Opposition to Petition for Rehearing," a document which purported to show that the IBEW "Petition for Rehearing" (October 28, 1957) was without substance and should be dismissed. (See "NARTB Files Opposition . . ." below.—Ed.)

The IBEW sharply attacked the Association's Opposition and cited litigated cases to show the direction of the miasmatic error committed by the FCC in its Report and Order. Among others, a recent Federal court decision is quoted by the IBEW, where the court made it quite clear that administrative officials should not pervert democratic processes. (" . . . When administrative officials merely turn 'thumbs up' or 'thumbs down' without adequate explanation, little opportunity is left for intelligent review. . . .")

## NARTB Files Opposition to IBEW Petition

ON November 7, 1957, the NARTB filed its "Opposition to Petition for Rehearing" with the FCC in Docket No. 11677. The Association staunchly defended the action of the Commission with a document which can be described as being contemptuous of the IBEW's Petition for Rehearing.

Brotherhood contentions that the Commission

had based its Report and Order on matters not of record and, even now, not known to the IBEW, are dismissed by the management group without adequate refutation. NARTB goes into a discussion of "formal and informal" rule making in an effort to explain ruling.

The full text of the NARTB Opposition follows:

United States of America  
 Before the  
 Federal Communications Commission

**In the Matter of**

Amendment of Part 3 of the Commission's Rules and Regulations Relating to Remote Control Operation of Certain Standard, FM and Non-Commercial Educational FM Broadcast Stations.

**Docket No. 11677**

### OPPOSITION TO PETITION FOR REHEARING

Comes now, the National Association of Radio and Television Broadcasters, by its attorneys and, for the reasons hereinafter set forth, opposes the Petition for Rehearing filed by the International Brotherhood of Electrical Workers in the above captioned proceeding.

#### I

#### Background

On September 27, 1957, the Commission published its Report and Order in the Federal Register of Sep-

tember 27, 1957, with respect to an Amendment of Part 3 of its Rules and Regulations relating to remote control operations by certain AM and FM stations. This Report and Order stemmed, in part at least, from the request of this Association, filed with the Commission on February 15, 1956, that certain Amendments of Part 3 relating to remote control operations be authorized by the Commission.

## II

### **The Petition for Rehearing**

The Petitioner, in its pleading of October 28, 1956, has requested that the Commission vacate or suspend the aforesaid Order, furnish IBEW and other interested parties "information as to the nature and identity of all reports or records" referred to in Paragraph 22 of the Commission's Report and Order and, finally, to permit IBEW and other interested parties "opportunity to refute and/or rebut reports and records" above referred to and, further, to grant permission for access to any such material in the possession of the Commission "not generally available to the public."

In support of its Petition, IBEW claims that the Commission has based its Report and Order "on matters not of record and, even now, not known to IBEW and other interested parties" and that, therefore, the decision is not in accord with the Administrative Procedure Act, the Communications Act of 1934 as amended, Public Law 901, 81st Congress, approved December 29, 1950, and the due process clause of the Fifth Amendment to the Constitution of the United States.

## III

### **Granting of the Subject Petition Is Required Neither by the Administrative Procedure Act, Public Law 901 Nor the Constitution of the United States**

Petitioner has seen fit to run the gamut of generalized citation commencing with the Administrative Procedure Act and ending with the Constitution of the United States. Nowhere, however, has Petitioner specified wherein anything in any of the cited documents gives rise to the slightest inference that the Commission has done other than observe the strict letter of the law.

It is a matter of public record that the Commission received an inquiry from IBEW, dated March 20, 1956, requesting answers to various questions respecting the matter of remote control by broadcasting stations. On April 26, 1956, the Secretary of the Commission responded to the International President of IBEW and furnished him with such information as the Commission had in its possession with respect to the particular questions asked. The Secretary further stated that

"several of your questions cannot be answered as the information is not on file."

Again, on May 10, 1956, IBEW, through its International President, requested further and more detailed information respecting the remote control docket, through the medium of some fifteen questions. On May 22, 1956, the Commission's Secretary again responded and provided such information as it had. Thus, in response to two separate queries by IBEW relating to remote control operations, the Commission, in the spirit of helpfulness, went far beyond what it was required to do by law.

There are essentially two types of rule making under the Administrative Procedure Act: formal and informal. The basic difference between the two is to be found in the procedures to be followed. Formal rule making may be defined as those cases where rules are required by *statute* to be made on the record after an opportunity for an agency hearing. In such cases the public rule making proceedings must consist of a public hearing and decision in accordance with Sections 7 and 8 of the Administrative Procedure Act. Petitioner is in effect claiming that the instant proceeding should be governed by these sections. We submit that this is erroneous.

The only rule making proceedings which require a hearing under the Communications Act of 1934, as amended, are those promulgated under Title II of that Act. The present docket was initiated under the provisions of Title III. For this type of proceeding no hearing is required. Accordingly, the procedures for informal rule making apply. In such cases it is entirely clear that Section 4b of the Administrative Procedure Act does not require the formulation of any rules upon the exclusive basis of any record and that, therefore, an agency is free to formulate rules upon the basis of materials in its files, and its own knowledge and experience, in addition to the materials adduced in public proceedings. *Attorney General's Manual on the Administrative Procedure Act*, pp 31, 32 (1947). This is precisely the procedure the Commission has followed in the instant case.

Accordingly, this Association respectfully submits that the rules finally adopted in the instant docket should stand and that the petition of the International Brotherhood of Electrical Workers should be dismissed.

Respectfully submitted,

NATIONAL ASSOCIATION OF RADIO AND  
TELEVISION BROADCASTERS

1771 N Street, N. W., Washington 6, D. C.

By DOUGLAS A. ANELLO,

WALTER R. POWELL, JR.,

WALTER J. MURPHY, JR.,

*Its Counsel.*



**Detailed Reply to Opposition Cites Cases  
Pertinent to Rule-Making Policies**

## **Brotherhood Maintains Its Position**

In a pointed statement, citing cases, the IBEW legal staff has shown that the National Association of Radio and Television Broadcasters has missed the point entirely in its recent opposition to the Brotherhood petition. Our counsel reminds that due process of law requires that the FCC base its decisions on matters which are, if not part of the record, at least made known to the parties. This would be true for a formal hearing, an informal hearing, or for no hearing at all. We again call for a granting of the petition for a rehearing.

**United States of America  
Before the  
Federal Communications Commission**

**In the Matter of**

Amendment of Part 3 of the Commission's Rules and Regulations Relating to Remote Control Operations of Certain Standard, FM and Non-Commercial Educational FM Broadcast Stations.

**Docket No. 11677**

### **REPLY TO OPPOSITION OF NARTB**

The International Brotherhood of Electrical Workers (IBEW), in its Petition for Rehearing in this proceeding, pointed out that the Commission's Report and Order herein relied on material, consisting of certain reports and records, not submitted as part of the rule-making procedure, the nature and identity of which was not known to IBEW and other interested parties. IBEW requested that the Commission furnish it and other interested parties information as to the nature and identity of the reports and records relied upon by the Commission and opportunity to submit information and argument respecting such reports and records. IBEW further asked that the order adopting amended rules be vacated or suspended pending redetermination of issues raised by the IBEW Petition.

NARTB has filed an "Opposition to Petition for Rehearing" in which it does not deny that the Commission based its report and order on material not of record in the proceeding and not known to IBEW.

NARTB has charged that IBEW's Petition "run(s) the gamut of generalized citation" without a specific

reference to permit an inference as to anything other than observance of the "strict letter of the law." (p. 2). It is not asserted by NARTB that the spirit of the law is satisfied. Furthermore, it is submitted, a more enlightened concept of the letter of the law than that espoused by NARTB seems indicated in the light of the Supreme Court decision in *Ohio Bell Telephone Co. v. P. U. C. (Ohio)*, 301 U. S. 292 (1937). In that case the Court struck down administrative action based on matter not of record and not specifically cited. It said:

"From the standpoint of due process—the protection of the individual against arbitrary action—a deeper [viz., deeper than resort to material not of record] vice is this, that even now we do not know the particular or evidential facts of which the Commission took judicial notice and on which it rested its conclusion. Not only are the facts unknown; there is no way to find them out."

The significance of the *Ohio Bell* case is not with respect to whether or not a hearing was required or held but rather with respect to the necessity for specification of the particular basis of the administrative action in view of the duties of a reviewing court.

More recently, in *Chesapeake Motor Lines v. United States*, 7 Ad. L. 2d 505 (U.S.D.C., D.Md. (3j), Aug. 23, 1957), the court condemned administrative action concerning the interpretation of a carrier's certificate where the agency had not "sufficiently indicated the reasoning which led to the conclusion" reached. The court said:

"When administrative officials merely turn 'thumbs up' or 'thumbs down' without adequate explanation, little opportunity is left for intelligent review. Two alternatives are then offered the reviewing tribunal if it undertakes a final disposition of the complaint. The first is automatically and uncritically to rubber stamp the administrative action without any effective review; the other is to undertake to search out the matter independently, with the inevitable tendency to substitute judicial for administrative judgment. Both alternatives are undesirable and alien to the traditional scheme, and can be avoided only if administrators make full exposition of the reasons for the actions they take."

The very fact that judicial review of the order herein is provided for by Sec. 402 of the Communications Act and Public Law 901, 81st Cong. (approved Dec. 29, 1950) shows the legal necessity for grant of the IBEW Petition. For the reviewing court, precisely as in the *Ohio Bell* and *Chesapeake Motor* cases, cannot perform its function if it is deprived of information as to exactly what it is reviewing. The blunt fact is that the

Congress has not committed this matter to the uncontrolled discretion of the Commission. Certainly, an administrative agency must formulate its procedures so that statutory or other judicial review can be undertaken on an effective basis. The administrative agency is not acting in accordance with law when its procedures have been formulated in such manner that they would result in a nullification of judicial review. Where, as here, the Congress has provided for statutory judicial review, it must be assumed that Congress intended the administrative agency to handle its administrative procedures and action in contemplation of the subsequent judicial review provided for in the statute. Congress must have intended that the administrative agency would conduct itself so as to make judicial review possible—not impossible.

And, as pointed out in the *Chesapeake Motor* case, *supra*, the administrative agency itself must evaluate the facts, data and evidence, for a *de novo* determination by the Court would be in derogation of the proper relationship between the administrative agency and the courts.

NARTB misses entirely the point of the IBEW Petition when it belabors the point that the Administrative Procedure Act does not require a hearing. The point is that whether a formal hearing, an informal hearing, or no hearing is held, due process of law requires that the Commission base its decision on matters which are, if not part of the record, at least made known to the parties. The *gravamen* of the impropriety does not lie in resort to matter outside the record but rather to the failure to identify the outside matter resorted to.

The specific provisions of Sec. 4 of the Administrative Procedure Act also support the IBEW position. For Sec. 4 (b) provides that the agency shall incorporate in any rules adopted a concise general statement of *their basis* and purpose. In explaining these provisions both the Senate and House Committee Reports stated:

“The required statement of the basis and purpose

of rules issued should not only relate to the data so presented but with reasonable fullness explain the *actual basis* and objectives of the rule.” (Senate Document No. 248, 79th Cong. 2d Sess. pp 201, 259; Emphasis added.)

In the instant case, unless the nature and identity of the “reports and records” are disclosed, the rule-making process has not satisfied the applicable statutory standards and is, within the plain intendment of Sec. 10 (e), (B) (1), (2) and (4), not in accordance with law, contrary to constitutional right and without observance of procedure required by law.

The Commission’s Report and Order is silent as to reasons for failure to cite the reports and records. NARTB does not appear to contend that classified matter is involved or that considerations of national security require non-disclosure. And even where the national security is involved, administrative action may lawfully be based on secret information only where the agency explains in its decision with such particularity as circumstances permit the reasons why the information may not be disclosed. *Briehl v. Dulles*, Ad. L. 2d 310 (App. D. C., June 27, 1957); *Boudin v. Dulles* 98 App. D. C. 305, 235 F. 2d 532 (1956). The reason for the rule, as the court in *Boudin v. Dulles* indicated, lies in the very fact that there is judicial review of the agency action. The rule, therefore, applies here.

It has been stated in *S. E. C. v. Chenery*, 318 U. S. 80; 332 U. S. 196-197 that:

“When the case (*Chenery*) was first here, we emphasized a simple but fundamental rule of administrative law. That rule is to the effect that a reviewing court, in dealing with a determination or judgment which an administrative agency alone is authorized to make, must judge the propriety of such action solely by the grounds invoked by the agency. If those grounds are inadequate or improper, the court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis. To do so would propel the court into the domain which Congress has set aside exclusively for the administrative agency.

“We also emphasized in our prior decision an important corollary of the foregoing rule. If the administrative action is to be tested by the basis upon which it purports to rest, that basis must be set forth with such clarity as to be understandable. It will not do for a court to guess at the theory underlying the agency’s action; nor can a court be expected to chisel that which must be precise from what the agency has left vague and indecisive.”

Contrary to NARTB’s assumption that the rules of due process apply only in cases where the administrative agency is required by statute to grant a hearing, the United States Court of Appeals for the District of Columbia Circuit has applied the above-quoted statement of law to passport cases where there is neither provision for statutory hearing by the administrative agency nor for statutory review by the courts.

Under its general equity power, the Court has applied

## FCC Report and Order Available in Printed Form

The FCC Report and Order in Docket No. 11677 (Amendment to Broadcast Rules Re. Remote Control Operation) is now available in printed form at the Government Printing Office. Orders may be sent to the “Superintendent of Documents, Government Printing Office, Washington 25, D. C.” The printed copy may be ordered as FCC Volume 23, Pamphlet No. 8—each copy is 25 cents (no stamps accepted).

the rule that "Administrative action cannot be upheld merely because findings might have been made and consideration disclosed which would justify . . . [the] order. . . . There must be a responsible finding." *Boudin v. Dulles*, (1956) 6 Pike and Fischer, Ad. Law 289, 292.

The Color Television case (*R. C. A., et al., v. United States, F. C. C., et al.*, 341 U. S. 412) is a plain indication that the Commission's action in rule-making proceedings must be based upon substantial evidence or, in other words, what the Supreme Court referred to as a "justifiable fact situation." (341 U. S. at p. 416). In the instant case the total lack of any other evidence as to high power remote control coupled with failure to reveal the "reports and records" relied on makes it impossible to appraise the factual or evidential basis for the Commission's action.

The specific provisions of Sec. 7 (d) of the Administrative Procedure Act to the effect that:

"Where any agency decision rests on official notice of a material fact not appearing in the evidence in the record, any party shall on timely request be afforded an opportunity to show the contrary."

certainly do no more than accord statutory embodi-

ment to a constitutional guarantee of due process. There are judicial decisions made prior to the enactment of the Administrative Procedure Act holding that the above principle is a part of due process. Whether or not other specific guarantees of Sec. 7 are applicable to the instant rule-making proceeding, it surely cannot be contended that the Congress intended, or constitutionally had the power, to remove due process considerations from the Commission's rule-making. The very fact and the nature of the judicial review in the Color-Television case, *supra*, shows that due process must be observed in Commission rule-making.

For the reasons outlined above, it is submitted that the NARTB opposition should be overruled and the IBEW Petition granted.

Respectfully submitted,

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Washington 5, D. C.

Attorney for

*International Brotherhood of Electrical Workers.*

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Washington 5, D. C.

## IATSE Files Protest By Telegram

THE International Alliance of Theatrical Stage Employees (AFL-CIO) went on the record in opposition to the FCC's action in Docket No. 11677 by sending a telegram to the Commission,

marked received at the Commission on October 18, 1957. In few words, the position of the Alliance is shown to be in accord with prior expressions by other interested parties.

### WESTERN UNION

FCC HEADQUARTERS,  
WASHINGTON, D. C.

THE INTERNATIONAL ALLIANCE OF THEATRICAL STAGE EMPLOYEES REPRESENTING EMPLOYEES IN MANY BROADCASTING STATIONS RESPECTFULLY ENTERS ITS PROTEST ON THE CHANGES IN THE FCC REGULATIONS IN WHICH BROADCASTING STATIONS WITH DIRECTIONAL ANTENNAE AND POWER IN EXCESS OF 10 KW WOULD BE ALLOWED TO OPERATE BY REMOTE CONTROL. IT IS OUR OPINION THAT SUCH OPERATION IS DETRIMENTAL TO THE SAFETY AND PROGRESS OF OUR COUNTRY.

RICHARD SCOTT, INTERNATIONAL REPRESENTATIVE  
JOHN J. FRANCAVILLA, INTERNATIONAL REPRESENTATIVE



# NABET Issues Protest in Formal Letter

UNDER date of October 9, the FCC was sent a letter by International President George Smith of NABET, protesting the Commission's Report and Order in Docket No. 11677.

Mr. Smith requested reconsideration by the Commission and urged that the Commission postpone the effective date of its Rules amendments. As of press time, The TECHNICAL ENGINEER is

unaware of whether the Commission has made any reply or whether the Commission may consider the letter as being an inadequate pleading, inasmuch as the FCC requires an original and fourteen copies in its formal proceedings.

The text of the letter from Mr. Smith is reproduced herewith.

NATIONAL ASSOCIATION OF BROADCAST EMPLOYEES AND TECHNICIANS  
AFL-CIO  
Chicago, Illinois

October 9, 1957

Federal Communications Commission,  
Washington 25, D. C.

In the matter of  
Amendment of Sections  
3.66, 3.274 and 3.572 of the  
Commission's Rules and  
Regulations relating to remote  
control operation of certain  
Standard, FM and non-commercial  
educational FM broadcast stations  
Docket No. 11677

Gentlemen:

We have just received a copy of the report and order of the Commission in connection with the above-entitled matter.

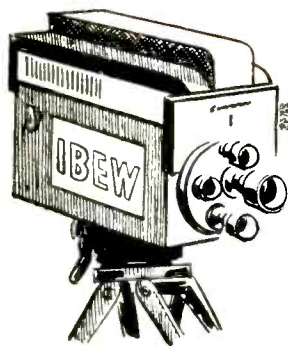
Please accept this communication as notice upon our part of a request for reconsideration of the Report and Order. We further urge that the Commission postpone the effective date of its amendment to Part 3 of its Report and Order until such time as the parties in opposition have had an opportunity to submit detailed petitions for reconsideration setting forth their objections to the proposed amendments.

For these purposes, may we respectfully request that we be given sixty (60) days from the date of this communication for the purpose of filing a petition for reconsideration of the Commission's Report and Order in this case and that, in the interim, the effective date of the Amendments to Part 3 of the Commission's Rules and Regulations be postponed.

Please send copies of all communications to our general counsel, Sturm and Perl, 150 Broadway, New York, N. Y.

Very truly yours,  
/s/ George Smith  
International President





## Yuletide Wishes

***I**T IS again that time of year during which men of good will wish each other well and count the blessings already received.*

*In a world torn by struggles for power, where men desperately search for peace under a sky containing heavenly bodies of earthly origin, let us hope the peace on earth is permanent.*

*To our members and readers everywhere, a very Merry Christmas and a Happy and Prosperous New Year.*

GORDON M. FREEMAN  
International President

JOSEPH D. KEENAN  
International Secretary

JEREMIAH P. SULLIVAN  
International Treasurer

International Representatives

ALBERT O. HARDY

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TAYLOR L. BLAIR, JR.

M. B. KEETON



An image-producing panel is put through laboratory tests by Dr. Keith Butler, manager of general engineering laboratories of Sylvania's Lighting Division. This "Sylvatron" unit converts electrical data into simultaneous dots of light.

**E**LECTROLUMINESCENCE, a 19-letter word meaning the creation of light by the excitation of phosphors placed in an electric field, is a promising but elusive phase of electronics research. Three of the biggest electronics manufacturers have toyed for years with the principle, and each has achieved different interpretations of its usefulness.

Sylvania has come up with almost a dozen products for the home from phosphor-coated metal panels. It is studying the possibilities of radar signal amplification.

RCA's activity, however, has centered on the development of an electronic light amplifier in the form of a thin panel and has deemphasized phosphor home lighting.

General Electric, meanwhile, has done much fundamental research over the years, and its Large Lamp Department is "currently in the process of evaluating the economic value of such technologies in respect to the benefit to the customer or user."

In conclusion, GE feels that "technologies, both here and abroad, do not indicate a commercially feasible device at the present time."

The general consensus seems to be that electroluminescence has its best application in specialty items—electronic display devices, instrumenta-

## ***Progress Report:***

# **ELECTROLUMINESCENCE**

Benjamin Kazan of David Sarnoff Research Center contemplates the boss' image on an electronic light amplifier developed for RCA. This amplifier is a "sandwich" of photo-conductive and electroluminescent materials.

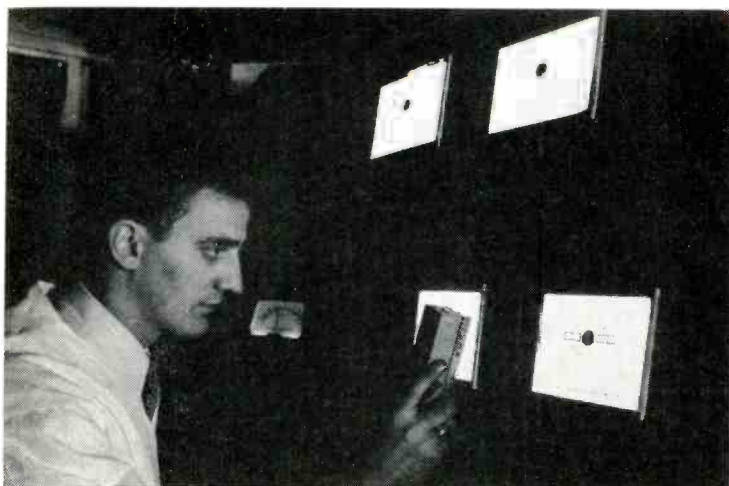


tion, and in household items, such as those marketed by Sylvania. Sylvania has come up with "Panelescent" lighting in many forms—a thermometer-utility lamp, a house-identification number plate, the face on a clock-radio, a telephone with electro-luminescent dial, and luminous decorator panels. The company has also produced a night light in the form of a crucifix and a light switchplate.

Sylvania's Panelescent (trade name) lamps are porcelainized steel panels only 25 one-thousandths of an inch thick which are coated with a ceramic-phosphor mixture. There are, of course, no tubes, filaments, or cathodes; light results from the excitation of the phosphors by an electric charge.

Of particular interest to broadcasting is the work by both Sylvania and RCA on image-producing panels. Sylvania has produced three types of image-producing panels:





LEFT: Life-testing of panel fluorescent lamps in a Sylvania lab is an integral part of the company's quality control program. The porcelainized metal lamps will last at least 30,000 hours. They are checked for color, light uniformity, performance, light output, and durability.

BELOW: Sylvania's enameling steel is coated with a ceramic-and-phosphor mixture, a tin salt solution, and a transparent conducting surface of a tin compound before firing.

1. An electroluminescent panel on which the position of a mobile dot of light can be manipulated electrically.

2. A display panel which reproduces optically the track of a mobile spot of light. The image thus created can then be held or "stored" indefinitely in visible form on the panel.

3. An electroluminescent panel which can reproduce optically a motion picture with good resolution and rapid response.

### Many Applications

These panels have possible application in the development of radar, air traffic control, computers, instrumentation, and related devices.

Frank Healy, vice president in charge of Sylvania's lighting operations says, "Exploratory work in any other fields will have to take a back seat for quite some time and I am talking in terms of years. As far as television, specifically, is concerned, there will be no application of Sylvatron (i.e., their trade name) in the foreseeable future."

Sylvania's Type Three Panel, described above, is similar to an electronic light amplifier developed by RCA's David Sarnoff Research Center. Benjamin Kazan of RCA has produced a panel amplifier which amplifies up to 1,000 times the brightness of projected light. It also converts invisible X-rays and infra-red images to bright visible form.

The amplifier will have value in intensifying the dim images now appearing on radar screens. It should be able to amplify the infra-red radiations of the heavenly bodies and thus aid the studies of astronomy.

The device consists of a thin screen formed by two closely-spaced layers, one of photoconductive material and the other of electroluminescent phosphor. Between these is a very thin layer of opaque



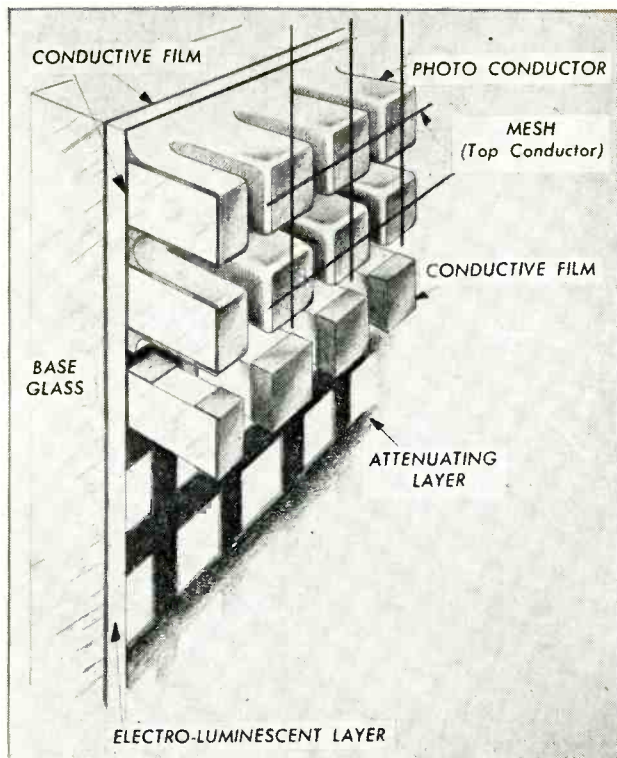
material to prevent feeding back of light. The layers are sandwiched between two transparent electrodes, and a voltage is applied across the entire assembly.

### High-Brightness Image

In operation, an extremely dim light image falls directly on the photoconductive layer, permitting a corresponding pattern of electric current to flow through to the electroluminescent layer. Under the influence of this current pattern, the electroluminescent phosphor emits light, forming a high-brightness image of the original picture. This process occurs because the photoconductive material acts as an insulator in the absence of light, but conducts current under the influence of light.



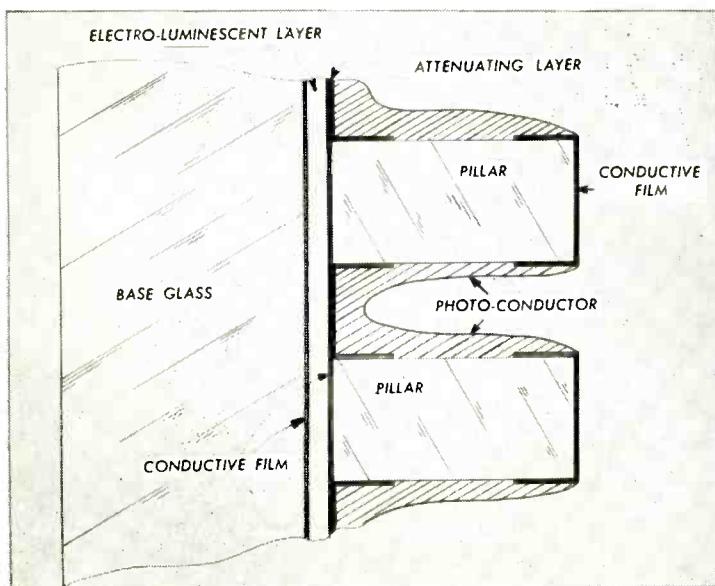
## Electroluminescence, Concluded



The "waffle-iron" construction of one of a group of image-producing panels, produced by Sylvania is shown in these two engineering drawings.

The cut-away drawing above shows the over-all layered construction—a glass panel, with conductive and electroluminescent coatings, on top of which are cemented sets of columns approximately  $1/32$ " square with  $1/32$ " spacing to adjacent columns. Black glass is applied to the webbing between individual columns. Each column has a conductive cap on both top and bottom and a photoconductor layer for connections, as is shown in detail in the side view below. A top conductor of perforated metal mesh or conductive glass is then cemented to the top conductive caps of the columns, joining all of them together.

When AC electricity is applied to the two conductive coatings—one below the electroluminescent layer and the other on top of the conductive caps—and a spot of triggering light of short duration is applied to an individual column, either from front or back, the photoconductor transmits the electricity, and the electroluminescent dot under the column lights up.



## Union Education Programs On TV Upheld by Jury

### UAW Wins Smashing Victory

DETROIT, Nov. 11—The United Automobile Workers Union has again won a smashing victory over administrative efforts to gag its political education program. A Federal court jury found the UAW not guilty of charges it violated the Corrupt Practices Act by sponsoring a series of nine local television programs before the 1954 election at a total cost of \$6,000.

Two years ago Federal Judge Frank A. Picard dismissed original indictments against the union on grounds expenditures for educational telecasts were not prohibited under the statute. However, the government appealed to the Supreme Court, which returned the case to the district court here for further proceedings.

At the trial, the government contended that the union-sponsored TV programs violated the Act by containing expressions of political advocacy. Also, it argued, the funds were not "voluntary" because they came from union dues.

However, union witnesses countered by showing the broadcasts were designed to inform members in the Detroit area on a wide range of issues and not beamed at the public. They pointed to programs covering such topics as work standards, wages, pensions, slum clearance, civil rights, the United Nations and means of combatting communism. On some programs, political candidates were interviewed—and that, the prosecution claimed, violated the law.

UAW President Walter Reuther, testifying as a final witness, stressed the few programs in which Democratic candidates for office appeared represented "only a small part" of the total content. Further, he emphasized, GOP candidates had also been invited but refused to participate.

The union's counsel, Joseph L. Rauh, Jr., admitted the money for the broadcasts came from dues but he carefully demonstrated the expenditures were voluntary because they had been approved by delegates to the union's conventions.

UAW Secretary-Treasurer Emil Mazey hailed the decision as "solid confirmation" of the union's right to communicate with its members on any subject of interest to the membership.

Also, he said, it's a "complete repudiation of false charges made by a number of politicians . . . that the UAW was operating illegally in its educational programming."

# NLRB Rules Against 1212 In WCBS-TV Lighting Dispute

Board Asserts 1212 Induced Work Stoppage and Violated  
Sec. 8 (b) (4) (D) of LMRA

**I**N a unanimous opinion, on November 27, the NLRB found Local Union 1212 guilty of the Unfair Labor Practice Charge filed by CBS in the remote lighting dispute which arose on a television remote pickup last Spring. The question involved was the television lighting in connection with the annual "Tony" Award ceremonies of the American Theatre Wing. These ceremonies took place in the main ballroom of the Waldorf-Astoria Hotel in New York and were carried by WCBS but not by WCBS-TV. The company had assigned members of Local No. 1, IATSE, to the work and the assignment was vigorously contested by Local Union 1212, IBEW.

As a result of the dispute, hearing was held on various dates between June 19 and June 25 in New York. Due notice was taken by the Board, in the course of its deliberations that both Local 1212, IBEW, and Local 1, IATSE, have agreements covering the employment of people performing certain work for CBS. It concluded, however, that the remote lighting which became a question at the Waldorf-Astoria was not specifically covered by an agreement with either union. This led the Board to contend that the assignment by CBS to members of Local Union 1 was proper and should have been honored by the IBEW.

In its discussion of the "Merits of the Dispute," the Board has stated that:

"It is well established that an employer is free to make work assignments without being subject to strike pressure by a labor organization seeking the work for its members, unless the employer is thereby failing to conform to an order or certification of the Board, or unless the employer is bound by an agreement to assign the disputed work to the claiming union. Local 1212 has no such order, and its certification does not include the work of operating lights on remote telecasts. There remains for consideration Local 1212's contention that it had a right to the disputed work by virtue of its agreement with CBS. As noted above, however, Local 1212 had demanded that the agreement should assign the disputed work to it, but CBS did not yield to this demand,

and the agreement was silent on the point as a consequence. Local 1212 has thus failed to establish any contractual right to the disputed work.

"We, therefore, find that Local 1212 is not entitled, by means proscribed by Section 8 (b) (4) (D), to force or require CBS to assign the disputed work to its members. However, we are not by this action to be regarded as "assigning" the work in question to Local 1, as we are not called upon to pass on that question."

## BOARD ISSUES FINAL DETERMINATION

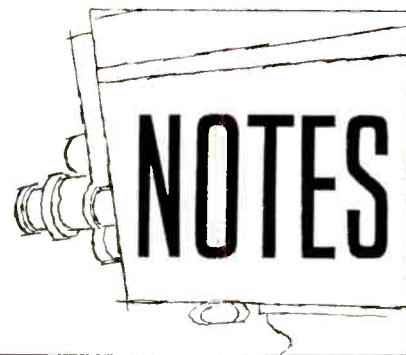
In its usual form and fashion, the Decision of the Board concluded with its "Determination of Dispute" by stating:

"On the basis of the foregoing findings of fact and the entire record in this case, the Board makes the following Determination of Dispute, pursuant to Section 10 (k) of the Act:

"1. Radio & Television Broadcast Engineers Union, Local 1212, International Brotherhood of Electrical Workers, AFL-CIO, and its agents are not and have not been entitled, by means proscribed by Section 8 (b) (4) (D) of the Act, to force or require Columbia Broadcasting System, Inc., to assign the work of setting up and operating lighting equipment on remote telecasts to its members rather than to other CBS employees, who are members of Theatrical Protective Union No. One, International Alliance of Theatrical Stage Employees & Moving Picture Machine Operators of the United States and Canada, AFL-CIO.

"2. Within ten (10) days from the date of this Decision and Determination of Dispute, Local 1212 shall notify the Regional Director for the Second Region, in writing, whether or not it will refrain from forcing or requiring CBS, by means proscribed by Section 8 (b) (4) (D) of the Act, to assign the disputed work to its members rather than to other employees of CBS, who are members of Theatrical Protective Union No. One." *(Continued on page 15)*





## New Vidicon TV Camera

A new industrial television camera chain, engineered for economical use with existing chains to form expansible closed-circuit TV networks, has been announced by the Radio Corporation of America.

E. C. Tracy, manager, RCA Broadcast and TV Equipment Department, said that the new camera meets a need in the educational, industrial, and commercial fields for a TV camera chain that can be used either as the foundation of an expand-as-needed closed-circuit TV system, or as an addition to a system already in operation.

The RCA TV camera chain (ITV-201), he said, embraces a compact, portable vidicon-type TV camera; a separate, self-contained control unit, and a viewing monitor. The complete chain is priced at less than \$3,000, the actual cost varying according to installation requirements.

The new ITV-201 chain broadens RCA's industrial TV line to three different types of closed-circuit systems. Other RCA systems are the "TV Eye," a simplified camera-control-monitor chain which lists for approximately \$1,000, and the ITV-6, a compact system for heavy-duty TV applications which comprises a camera and control unit with self-contained monitor. The ITV-6 lists for approximately \$3,500.

The new ITV-201 camera chain is engineered to meet changing and increasing TV needs. The chain can serve both as an independent program-origination system and as an "add-a-block" for a larger system. The camera and control unit are specifically designed for operation as the core of a multiple camera system incorporating other cameras and control units, additional TV monitors, and such accessories as iris control, focus control, switching, pan and tilt mechanisms, and video line amplifiers.

A major design feature of the ITV-201 equipment makes it possible to operate two or more camera chains in a network by using a single synchronizing generator. Pulse amplifiers in



A model demonstrates the new ITV-201 camera produced by RCA for use with closed circuit networks. The camera is useful in educational, industrial, and commercial work.

each control unit provide the necessary distribution and amplification of drive pulses.

The ITV-201 camera, designed around a new RCA-developed tipless vidicon pickup tube, produces high-definition TV pictures of 550-600 line resolution over the complete gray scale from black to white. A choice of synchronization is available—either 525 lines with 30 frames interlaced two-to-one, or 525 lines with 60 fields random interlaced.

A minimum number of electron tubes are used in the compact TV camera, including the new tipless vidicon tube which measures one inch in diameter and six inches in length. The TV camera operates with any standard 16mm motion picture camera lens using a Type "C" mount—a wide choice which includes zoom, telescopic, and wide-angle lens types. The camera can be used with a single lens or a turret.

The control unit, which features sectionalized



construction, incorporates a video amplifier, control chassis for camera operation, and an electronically regulated power supply. Unit design facilitates addition of accessory circuits for sync generator and pulse amplifier. The modular-type design of the control unit provides for quick, economical maintenance with minimum out-of-commission time.

Other engineering features include: a protective circuit for the vidicon tube; a removable control panel to provide for local or remote camera operation; extra-long deflection yoke to improve picture-corner resolution; fixed aperture correction for sharp transition from black to white; an electronically regulated power supply for critical circuits, and forced-air ventilation in the control unit.

The ITV-201 TV camera weighs only eight pounds and measures  $5\frac{1}{2}$  by  $6\frac{1}{2}$  by  $10\frac{1}{2}$  inches. TV monitors are available in screen sizes ranging from 12 to 27 inches. The camera and control unit operate from a standard 115-volt, 60-cycle AC power supply, with power consumption limited to only 250 watts.

## Mighty Ultra-Magnifier

Development of an ultra-magnifier which quadruples the enlarging power of RCA's model EMU-3 electron microscope, already the world's most powerful type, has been announced by Theodore A. Smith, Executive Vice President, RCA Industrial Electronic Products.

"The ultra-magnifier," Mr. Smith said, "is a simple, economical device which will enable RCA microscopes to enlarge specimens more than one million times—a scale at which the common ant would mushroom into a monster more than four miles long, and so wide across that dinosaurs would appear as gnats on its back.

"The ultra-magnifier can be installed on any RCA EMU-3 electron microscope and will increase its direct magnification power from 50,000 to 200,000 times. The microscope's photo-enlargement capability is extended from 300,000 to more than 1,000,000 times specimen size. The ultra-magnifier is available in an install-it-yourself kit, at \$500.

Even without the ultra-magnifier, the RCA EMU-3 electron microscope is so powerful that it can detect particles smaller than one ten-millionth of an inch. In addition to producing direct magnifications of 50,000 times, it provides images so photographically sharp and detailed that they can be enlarged more than 300,000 times. Pho-

tographs are taken by an automatic camera system housed within the microscope.

Heretofore, the reliability of photo enlargements of magnified specimens spiraled off in the area of 300,000 times because of the emergence of photographic grain. With the ultra-magnifier, which provides direct magnifications at the 200,000 level, we are able to achieve useful enlargements of well over one million times without deleterious grain effects. Conceivably, in addition to introducing new clarity in present 'fringe areas' of research, this new magnifying and enlarging power will give our scientists new insight and means for probing heretofore invisible worlds."

The increased enlarging power is made possible primarily by a newly developed intermediate lens pole-piece which focuses the microscope's electron beam.

The ultra-magnifier kit comprises the new lens pole-piece and a compact electronic control unit designed for quick simple installation on the extreme left edge of the microscope control panel. The control panel includes a nine-step switch which enables the operator to vary magnification over the new high range.

## NLRB Rules

*(Continued from page 13)*

### SUIT FOR DAMAGES STILL PENDING

On May 8, CBS filed a suit for damages against the Local Union, in the United States District Court in New York City. The complaint filed with the Court substantially reiterated the charges filed by the company with the NLRB. The matter of the company's claim to damages to the amount of \$100,000.00 is still pending before the Federal District Court and will presumably be disposed of by court action in the near future. So far, District Court Judge Sylvester J. Ryan has dismissed as invalid Local Union 1212's \$150,000.00 countersuit which was based on allegations that CBS twice violated its contract with the union. At the same time, Judge Ryan denied CBS' motion for summary judgment against the local. These court actions took place on November 1 and the recent issuance of the NLRB decision constitutes the first significant action in the case since that time.



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# Station

# Breaks

## People You Should Know



Sven Vennhult and Gustav Jonsson present their country's official electrical flag to Bob Gomsrud of Local Union 292, IBEW.

A delegation of trade unionists from Sweden recently visited Minneapolis-St. Paul in connection with their study of construction techniques in the United States. One of their escorts was Robert Gomsrud, assistant business manager of Local Union 292. Bob is well known for his participation in broadcast affairs in Minneapolis-St. Paul.

In addition to the tours of construction projects, Mr. Gustav Jonsson, President of Swedish Electrical Workers and Mr. Sven Vennhult, Executive Council Member, were conducted on a tour of the Riverside Power Plant in Minneapolis by Brother Gomsrud. They were interested in a steam-operated power plant, since most generating plants in Sweden are hydro-electric.

Another tour was made to see the operation of the WCCO-TV transmitter explained by Brother Bernie Renk at the Foshay Tower.

One of the reasons for the success of the 16 Swedish Building Trades Delegates' visit to Minneapolis was that at least 15 of the building trades business agents speak either Swedish or Norwegian.

Brother Gomsrud accepted the Swedish Electrical Flag in the name of Local Union 292 and presented it at the regular membership meeting.

## New Orleans Station

WWL-TV, New Orleans, began operations several weeks ago on Channel 4 as a CBS-TV affiliate. It is manned by technicians from IBEW Local 1139. The new station has a 100 kw maximum power and its technical facilities include full color equipment.

The station went into service 13 years after its first application for an FCC permit was filed, bringing to an end many regulatory complications. President W. Patrick Donnelly, S.J., president of Loyola University of the South, opened the station at 6:30 p. m., September 7.

## Crash Rescue Filmed

A cameraman from Station WJAR-TV, Providence, R. I., waded through swampy woodland recently to film rescue operations for an airplane crash. Cameraman George Clarke got the film back to Local 1281 technicians for telecast the next morning.

## CBS Research Center

CBS Labs is now constructing a million-dollar research center at Stamford, Conn., as part of the CBS plans to expand electronic research operations.

It is scheduled for occupancy next summer.

The company's research program, as outlined by Dr. Frank Stanton, will be expanded in three areas: intensified search for new and improved audio and video techniques, broader development of electronic projects under government contract for military and other purposes and more comprehensive applied research for industry.

"During its 21-year history, CBS Labs has made some of the most important contributions to the advancement of modern communications," Dr. Stanton stated. "It pioneered in both black-and-white and color television."