

RADIO, TV and RECORDING



TECHNICIAN-ENGINEER

MAY, 1957



RADIO, TV and RECORDING

TECHNICIAN-ENGINEER



VOLUME 6 17 NUMBER 5

PRINTED ON UNION MADE PAPER

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

... in this issue

<i>Labor Answers Your Questions</i>	3
<i>CBS Files Unfair Labor Practice Charges</i>	7
<i>Supreme Court Says States Can't Step in When NLRB Refuses Jurisdiction</i>	8
<i>To Be or Not to Be—Pay-As-You See TV</i>	9
<i>Jamestown Festival</i>	10
<i>President Freeman on Free Enterprise</i>	12
<i>Notes and Quotes</i>	12
<i>Portable Frequency Standard</i>	13
<i>Technical Notes</i>	14
<i>Station Breaks</i>	16

... the cover

Tags, wires, and blueprints are all part of the maze that goes with wiring studio equipment. Ted Perzeszty of the CBS Construction Department in New York works beneath a floodlight in the CBS shop among racks for a studio audio system. Like other technicians and engineers in the network unit, Perzeszty is a member of IBEW Local 1212. A report on the operation of the CBS Construction Department appeared in the April issue of the TECHNICIAN-ENGINEER.

commentary

Largely because of labor unions, farmers have more good friends among Congressmen from big cities than among those from rural areas, according to the February issue of *Rural Electrification*, magazine of the farmers' cooperative power organization. The article divides the members of the U. S. House of Representatives two ways: First, according to their votes on bills vital to the farm electric co-ops. Second, according to the kind of districts from which they come. Then it points out that:

Of the "big city" Congressmen, 42.5 per cent voted *FOR* the farmers on 75 to 100 per cent of the bills. That compares with only 18.1 per cent of the Congressmen from "substantially rural" districts, and 37.5 per cent of those from "predominantly rural" districts. Of the Congressmen who voted *AGAINST* the farmers on more than 50 per cent of the bills, 42 per cent were from big cities, 63 per cent from "substantially rural" districts, and 42 per cent from "predominantly rural" districts.

"It is important to note," the magazine adds, "that *we (farmers) are probably indebted to the labor unions for much of our strength in big cities.* Representatives of metropolitan areas are often dependent upon the support of unions, which have been extremely friendly to the rural electric and Federal power programs."

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:

March, 1957—118.9; March, 1956—114.7.
 April, 1957—119.3; April, 1956—114.9.



AFL-CIO President George Meany faces, from left, Fred Perkins of the Scripps-Howard newspapers, Allen Adams of Business Week, Harry Flannery of AFL-CIO Radio and TV, and Joseph Gambatese of Nation's Business. The microphone and tape recording is from Sound Studios, an IBEW-contract organization.

Labor Answers Your Questions:

New AFL-CIO Radio Series

TODAY, labor is front-page news. Many questions about organized labor are asked by businessmen, housewives, farmers, veterans, legislators, and just plain citizens. In a new taped series, the AFL-CIO is offering to radio stations across the nation a public service feature, postage prepaid, in which labor leaders answer questions the public ask.

The series began April 22, and it runs for 13 weeks. It was lead off by a reporters' interview of AFL-CIO President George Meany, in which

Meany answered questions about the McClellan Committee hearings. (The transcript of this broadcast is printed in full in this issue of the *TECHNICIAN ENGINEER*.)

William Schnitzler, AFL-CIO secretary-treasurer, and other leaders are heard in subsequent programs of the series, which is called "Labor Answers Your Questions."

The show is taped by Sound Studios of Washington, D. C., an organization whose recording engineer works under an IBEW contract.

Meany Discusses Labor Racketeering

ALLEN ADAMS: "Mr. Meany, the Senate has been conducting racketeering investigations for some time, and it looks as though they'll go on at least all year. These investigations have turned up a lot of information. Do you think the hearings so far have been fair and are they helping you to follow up and perhaps clean up where you think there is racketeering in the labor movement?"

GEORGE MEANY: "Well, I have no reason to believe that the hearings to date have not been fair. Of course, we're watching the developments very carefully, and we realize that while there are a number of members of Congress, and people in public office who are sincerely desirous of im-

proving the situation in the trade union movement, in regard to this problem, we feel that there are others who would perhaps use these exposes of the short-comings and sins of a few people in the labor movement to promote adverse legislation that would be harmful to labor. Now, of course as I say, we're watching the situation very closely and in direct reply to your question, I would say that from my observation, I would have no reason to believe that the hearings have not been fair to date."

ADAMS: "Is there any kind of legislation, Mr. Meany, that you would welcome?"

MEANY: "Well, that's something again that we've got to study. Now, we have said—we have

AFL-CIO President Calls For a Vocal Union Membership

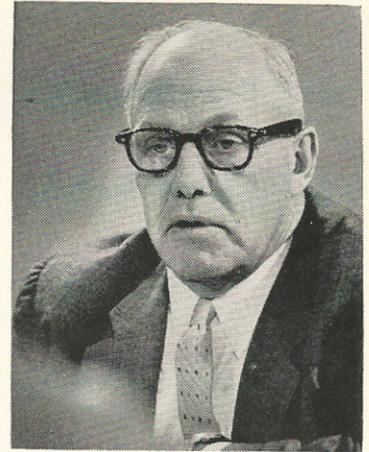
said in the past, in regard to health and welfare funds, that we would welcome legislation calling for full disclosure, as to the conduct of those funds, including fees paid, premiums paid, how much insurance companies got out of it, how much service the company got out of it, and in effect, how much good was actually coming to the members from these health and welfare funds, and this, of course, on the theory, that health and welfare funds is not trade union money, in a sense. It's really—it's really deferred wages, as it were, that's coming to people at a time when—when they need money, and I would say that whatever legislation is needed to really protect the money of the trade union members, I would favor that sort of legislation. I can't say at the present time, at this stage of the proceedings, whether or not legislation is needed—of which type is needed. I'm quite certain that—that there isn't any particular legislation needed to stop thievery. I assume that every state in the union has on its statute books laws against fraud, embezzlement and thievery of all kinds, and of course, this racketeering, as it's called, is really a social evil. It isn't particularly a trade union evil, although the trade unions are used in cases by these racketeering elements."

PERKINS: "Mr. Meany, the head of one of the unions under current criticism claims and charges that his troubles are due to a conspiracy, a conspiracy which he says is engaged in by people within and without the labor movement, with the object of taking over control of this large organization. Do you have any comment on such a charge?"

MEANY: "Well, I haven't heard that charge, but I think it's just ridiculous to think that there's any such conspiracy. I mean—I don't think there's any foundation to any such charge as that at all—ridiculous."

ADAMS: "Mr. Meany, you mentioned there are laws against thievery, and presumably against racketeering. Does the AFL-CIO have such laws, so that it can do the job itself, or does it need help from something such as the Senate Investigation Committee?"

"We find today that union members, especially where they have fairly good contracts and where wages are fairly good, do not attend union meetings."



"Television may have something to do with it, but we do not get the attendance at regular union meetings, and it's only when a new contract is coming up and there's some difficulty in the offing that you find that the attendance swells up."



"I submit that barring the union shop or the preferential hiring clause in union contracts . . . will have no bearing on this question of racketeering at all."



"I am completely convinced that the expose of these bad practices will have an adverse effect on our effort to organize the unorganized."



Technician-Engineer

MEANY: "The AFL-CIO, Mr. Adams, has a constitution in which one of the fine objects of the movement is to keep the trade unions free of what we term corrupt influence and of course also Communist or any fascist or dictatorial influence. Now under our procedure, of course we have no law enforcement machinery, we have no right to usurp the functions of the District Attorney or of any police agency, but we do have a right to maintain certain standards and ethics in our own association, which is an association, a free association of trade unions. And I would say that we have machinery to implement the constitution on this score; we have acted against certain unions, and of course there is the proposed action now against other unions. And I feel that this Senate Committee is with its power of subpoena—is certainly able to bring out facts in regard to some of these things that we would not—that we ourselves would not be able to bring out. And I feel to that extent the presentation of these facts before the public will help us in our job of keeping the trade union movement free of corruption."

GAMBATESE: "Well, Mr. Meany, of course all the AFL-CIO can do is expel a union from the Federation, and that has been done in the past. The union up in New York on the waterfront; then the CIO expelled some left-wing unions. Do you think that is enough, because these unions can still continue to function?"

MEANY: "Well, Mr. Gambatese, that's a question that's pretty difficult to answer. Under the laws here in our country, any group can maintain a union, and the Taft-Hartley law, for instance, gives unions certain rights. Now the Communist-controlled unions which were thrown out of the CIO, some of them are still functioning, although a good many of their members have gone over to CIO unions, that is, unions that were established to try to bring those members over. We still find that a good many of these unions are functioning, and signing contracts with corporations just the same as any other union. Now we certainly would be opposed to legislation that would hamstring unions to the point where it would be very difficult for a union to function and discharge its obligations to the workers that it represents. Now whether—just what sort of legislation could be drawn on that subject, I don't know, because legislation of necessity applies to all, it can't apply just to one segment of the population. What we have done in the past and what the CIO has done was of course that they offered the opportunity to the members of the union that was expelled to get

themselves into another union within the national trade union center with decent leadership that could function for the benefit of those workers. And of course we find that some of the workers, despite the fact that some of their leadership has been shown up as being either corrupt or under the control of Communist influence, still cling for sentimental reasons or something else—still cling to that union. Now just how you could handle that by law, I don't know."

GAMBATESE: "Well, could you tell us just briefly, what steps are necessary to expel a union from your federation? I understand it would take considerable time."

MEANY: "Well, actually what we could do, under the constitution, if the Ethical Practices Committee and the Executive Council finds, for instance, that the union is under the control of corrupt influence, that union of course could not be expelled by the committee or by the Executive Council. Its expulsion would have to come from the Convention, and of course that would be on the recommendation of the Executive Council."

GAMBATESE: "But the Council can suspend?"

MEANY: "The Council can suspend but it cannot expel, and expulsion must come from the Convention."

GAMBATESE: "And your convention—you have one this fall?"

MEANY: "One convention late this year, and of course we will have a convention every two years."

GAMBATESE: "Every two years. So if nothing happens this fall, it would be '59 before a union could be expelled."

MEANY: "That's true."

PERKINS: "Mr. Meany, in the Senate hearings there were repeated statements that these troubles result largely from a lack of what was called union democracy. The statements were made by Senators and some of the witnesses that the control in these unions that are having trouble comes from the top and not from the bottom, the bottom being the rank and file membership. Some Senators are advocating laws that would require more attendance at union meetings and other improvements that would result in the rank and file having a greater voice in the

union management. Do you have any comment on that?"

MEANY: "Well, the trouble really lies not so much in the lack of democracy, which springs from constitutional provisions; actually what we find today that union members, especially where they have fairly good contracts and where wages are fairly good, do not attend union meetings. The situation has changed drastically in my experience. Attendance at a union meeting was more or less routine when I first joined a union; you went as a matter of course."

GAMBATESE: "Television probably keeps a lot——"

MEANY: "Well, Mr. Gambatese, television may have something to do with it, but we do not get the attendance at regular union meetings, and it's only when a new contract is coming up or there's some difficulty in the offing that you find that the attendance swells up. Now insofar as passing a law, that is, a law on the statute books of Congress or any of the states compelling people who belong to a free association and freely join it—compelling them to attend membership meetings, I don't think any such law could be effective. Laws set up by the unions themselves, and this has happened in the past, can perhaps help, but even in those cases we find that union members who would be fined, say, a nominal sum because they failed to attend a minimum number of meetings in a period of six months or a year, have challenged the union's right to interfere with their personal life to that extent. And I don't know how this could be done by law, how you could compel members to attend union meetings, but I do concede that some of this trouble, these things that we see being exposed, come from the fact that the running of the affairs of the union is left in the hands of one or two men or a small group of men, and the general membership of the union just doesn't know what's going on because they don't attend meetings. Now what happens in a good many cases because of the lack of attendance at the meetings and lack of interest in the routine work of the union, you will find that unions will change their procedure, instead of having a meeting once a week or every two weeks, they will decide to have a meeting every two or three months, which only really adds to the problem that we're discussing here at this particular moment."

PERKINS: "Speaking of laws, Mr. Meany, the most extreme proposal that's been made

recently on the Hill or at the Capitol comes from a Senator not noted for his friendly attitude towards organized labor; he thinks that there's a great probability of passage under present conditions of a national right-to-work law, which would forbid even the union shop permitted under the Taft-Hartley law; do you think there's any likelihood of such legislation?"

MEANY: "Well, I can't predict what will happen in a legislative way but I am familiar with the charge, and this comes from the—some representatives of big business—that this is the cause of these troubles. Now I'd like to submit that barring the union shop or the preferential hiring clause in union contracts and more or less bringing about a compulsory open shop, I submit that that would have absolutely no bearing on this question of racketeering at all. In fact, it might work to the advantage of the racketeers; it might work to the advantage of those who throw their weight around, who interfere with legitimate business, and it might leave them in the position to say, well, we don't control these men, they don't belong to our union, but in actual practice they would have just as firm control over them insofar as calling a strike as if they were all full-fledged members of the union. You know, Mr. Perkins, it don't take very many pickets to keep the workers in a plant from going to work. I could tell you a little story on that of something happened during the war, where a factory up in Rhode Island, employing approximately 300 people, was suddenly closed down without any union being in the picture at all, and I investigated because I was requested to get into it and see what was going on, and I found out that the plant was closed down not because there was any union, not because there was any group of agitators, but because one man bought 300 postcards and sent them to each one of the members, telling them—each one of the workers in the plant, telling them that a strike was going to take place on a certain morning. There wasn't any picket, there wasn't anything in the picture but 300 postcards, and the plant was shut down for a day or two. So the national right-to-work law certainly wouldn't have any bearing on these problems that are now being brought to light by the Select Committee of the Senate; in fact, they might help those who engage in racketeering activities."

ADAMS: "Mr. Meany, apart from the right-to-work law, which is a big legislative program, opposing it is the AFL-CIO, the Federation has another ambitious legislative program on the Hill, it's deeply involved in

politics, it is—it has a national organizing drive; are these programs being affected at all by the current hearings on racketeering, or do you see any major effects to the programs in the future?"

MEANY: "I would say that these exposes will certainly have some effect on our organizing drive. It's too early to make a survey and see what's happening at the moment, but I am completely convinced that the expose of these bad practices on the part of certain union officials will have an adverse effect on our effort to organize the unorganized. I haven't the slightest doubt about that."

ADAMS: "Is that true politically too?"

MEANY: "I don't know, I couldn't say just how that would affect us politically, but I assume it would have some adverse effect."

GAMBATESE: "Well, you're speaking now of the short run effect, but don't you think in the long range that this thing will have a wholesome and healthful effect?"

MEANY: "Yes."

PERKINS: "Are you planning for the immediate future any wide effort to convince the public that the great majority of trade union members and leaders and the great mass of the movement is basically honest?"

MEANY: "You speaking in terms of a publicity campaign? I would say there isn't any such campaign contemplated or in the works at the present time, but I do say—I will say that it is a matter that is giving us concern, because we know full well that the vast majority of the unions are well run. We know full well that the vast majority of the health and welfare funds are conducted in a way that we can be proud of, and I'm sure that that would run well over 90 per cent. However, that doesn't make news. The 99 welfare funds that have been conducted properly don't make news. Let one be improperly conducted and have some scandal, and of course, it makes news. But I can say, Mr. Perkins, that we are concerned about that, but at the moment there is no particular campaign of any kind."

PERKINS: "Well, as a newspaperman, it's a matter of regret to me that what you say is true, that more—that it seems to be human nature to give more attention to the rotten apple than to the rest of the barrel."

GAMBATESE: "It's like divorces."

CBS Files Unfair Labor Practice Charges, Sues 1212

Jurisdictional dispute at WCBS-TV results in NLRB charges and suit

ON April 26, CBS, Inc. filed Unfair Labor Practice Charges against Local Union 1212, IBEW with the Regional Director of the National Labor Relations Board in New York. The charge reads as follows:

"On Sunday, April 21, 1957, Local 1212, IBEW and its agents engaged in a strike and/or induced and encouraged employes of Columbia Broadcasting System, Inc., and they are continuing to induce or encourage said employes to engage in a strike or concerted refusal in the course of their employment to operate equipment and/or to perform services, an object thereof being to force or to require Columbia Broadcasting System, Inc. to assign particular work (i.e., lighting for 'remote pickups' by television) to employes belonging to Local 1212, IBEW, rather than to employes who are members of IATSE, Local No. 1."

On May 8, CBS filed a suit for damages against the local union, in the United States District Court in New York. The complaint filed with the Court substantially reiterates the company's charges which were filed with the Labor Board. The suit seeks damages to the amount of \$100,000. Local Union 1212 has been advised it has until May 30 to file its reply to the network's complaint to the Federal court.

The charges and the suit arose out of a dispute over remote lighting work for television in connection with the annual "Tony" award ceremonies of the American Theatre Wing. The ceremonies took place in the Main Ballroom of the Waldorf-Astoria Hotel in New York. WCBS carried program as scheduled but the program did not appear on WCBS-TV.

Supreme court decides states can't step into disputes over which NLRB has refused jurisdiction

A RECENT decision by the United States Supreme Court limiting the action of states in labor disputes has buoyed up the spirits of organized labor which have of recent moment been treading in dark seas of depression brought on by the Congressional hearings.

The High Court decision grew out of labor disputes in Utah, Ohio, and California.

Chief Justice Warren, speaking for the majority in the 6-2 decision, decided the Taft-Hartley Law gives the National Labor Relations Board sole jurisdiction over labor disputes affecting interstate commerce. The law permits the board to give up some of its power to specific state agencies if their laws conform with Federal laws, but so far it hasn't done so. Mr. Warren held that a state cannot move into labor disputes simply because they have been passed up for jurisdictional, budgetary or other reasons by the NLRB.

For the past 17 years, the NLRB has refused to intervene in cases in which the company involved in a dispute did less than a particular amount of interstate business. The board set an arbitrary figure of \$1 million in indirect business for retail stores before they would enter a case.

(In the labor disputes in the locales listed above, the decision was evolved outside the aegis of the NLRB simply because the disputes did not fall within the NLRB's arbitrary \$1 million indirect business figure.)

Commenting further on the decision limiting state intervention into labor disputes, Chief Justice Warren had this to say: "We are told . . . that to deny the state jurisdiction . . . will create a vast no-man's land, subject to regulation by no agency

or court" Warren said. "We are (also) told . . . that to grant jurisdiction would produce confusion and conflicts with Federal policy. Unfortunately, both may be right. We believe, however, that Congress has expressed its judgment in favor of uniformity . . . its judgment must be respected whatever policy objections there may be to creation of a no-man's land."

The former California governor also commented that "Congress is free to change the situation at will." He also said that this legal inertia could be avoided if the NLRB would "reassert its jurisdiction and, where states have brought their labor laws into conformity with Federal policy, by ceding jurisdiction" to the states.

An official for the NLRB, however, doesn't believe the Board will turn over to the states its jurisdiction over small labor disputes. The official did express the belief that the board's most obvious step in eliminating the legal "No-man's land" would be to push down the limits on the size of businesses it considers within its jurisdiction.

In other actions, the Supreme Court ruled that:

- Federal courts have the power to prohibit strikes by railroad unions, and;
- Upheld, in effect, the Constitutionality of a Federal law permitting railway labor contracts to require a union shop.

The unanimous decision in the rail strike case cleared up connecting interpretations of the Railway Labor Act and the Norris-La Guardia Anti-Injunction Law. It means, in effect, that Federal judges can block a rail strike when they think a union is bypassing the Railway Labor Law's peaceful procedures for settling grievances.

The Railway Labor Act sets up a step-by-step procedure for handling disputes, and provides that as a last resort they shall be referred to the National Railroad Adjustment Board. The Norris-La Guardia Act limits the power of judges to prohibit strikes.

The union shop question was raised by 14 employes of the Atchison, Topeka & Santa Fe Railway. The employes had sought a court order to prohibit the railroad from signing a union shop agreement with 16 non-operating railroad unions. The Santa Fe joined the move.

Texas' Supreme Court held that the dispute presented no Constitutional issues and the U. S. Supreme Court declined to review that decision.

(It was one year ago this month that the U. S. Supreme Court by a unanimous decision, 9-0, upheld the union shop amendment of the Railway Labor Act. Under the decision railroads and employes can negotiate union shop agreements regardless of any other laws—Federal or state—to the contrary.)

TO BE OR NOT TO BE
THAT IS THE QUESTION

Washington Studies Toll-TV

SOME time in the near future, the FCC very well may authorize full-scale tests of pay-as-you-see television. This, to say the least, is a highly controversial subject among broadcasters. Some say it will never be practical because of public resistance to paying for something they have been accustomed to receiving free. Others say it controverts the basic philosophy of the free enterprise system of broadcasting. Motion picture (theater) exhibitors are concerned about the impact of pay-television on box office receipts; on the other hand, motion picture producers appear to stand to gain by the introduction of the new system.

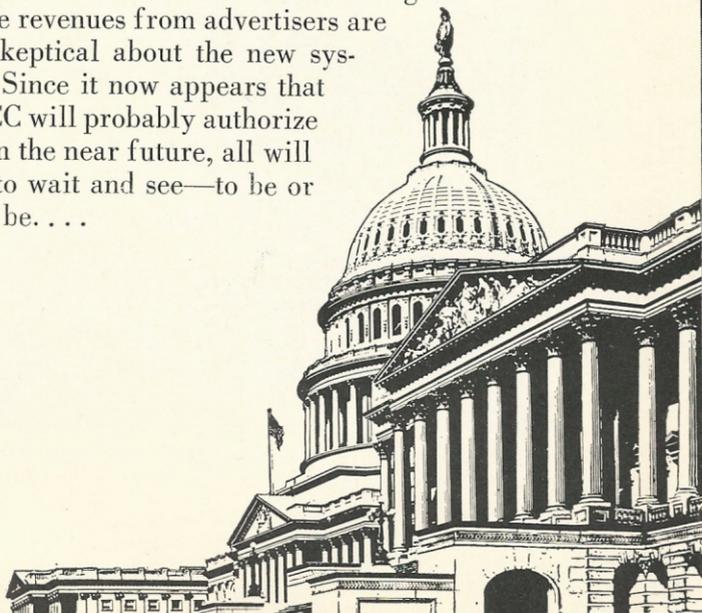
Three basic systems are involved. Phonevision, developed by Zenith, is the original system. Proposed by Comm. E. F. McDonald, president of Zenith, it originally utilized an "unscrambling" system based upon the use of telephone lines as the carrier of the unscrambling signal. Tests were conducted in Chicago in 1951, utilizing some 350 receivers. At the end of the tests, which ran for three months, 90 per cent of the viewing families said they would like to see the experiment continued. Their opinion was based upon having had three programs per week, at the cost of \$1 for each program—each program consisted of a full-length, two-year-old movie. Shortly after these tests were completed, Zenith developed a decoding system which was not dependent upon telephone lines—the air signal could be decoded without relationship to telephone line availability—an obvious advantage.

Skiatron sends a card to each subscriber, which lists all the pay-programs to be broadcast for the following month. The viewer inserts the card in a decoder, operates a lever which activates the decoding mechanism and simultaneously punches a hole in the card. At the end of the month, the subscriber sends the card to the company and is then billed for the programs seen. The Phonevision system involves a card, also, but this card is punched by the subscriber—which reveals a series of five numbers. The subscriber then sets five corresponding dials on his decoder, which unscrambles the air signal.

The Telemeter system, which has had a trial run at Palm Springs, Calif., is more like a juke box. Viewers are advised in advance of the features available and, at the appropriate time, drop coins into their decoder. At periodic intervals, a service man collects the contents of the decoder.

Of course, toll-TV will not be immediately available for everyone who may desire it. The instigators of the system now estimate that it may be as long as two or three years before facilities can be provided and decoders installed in a large city. However, the Senate Committee on Interstate and Foreign Commerce has recommended to the FCC that "carefully controlled tests" should be authorized and the Chairman of the Commission has promised early action. If such action is taken soon, the availability of programs will then be entirely dependent upon how long it takes to get decoders installed—and the public demand for the equipment.

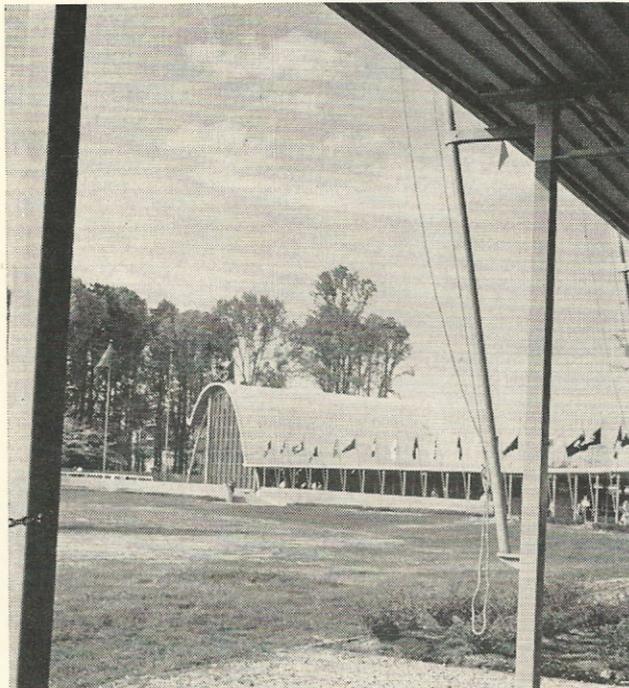
Whether the venture will be profitable—indeed, whether it may become permanent—can be determined only after the tests have started. When the novelty pales, viewers may very well return to their regular TV fare; nonetheless, the possibilities have set many a motion picture executive to dreaming. Conversely, many broadcasters—including the networks—have been having nightmares. Those who are concerned about the future of "live" broadcasting and the revenues from advertisers are very skeptical about the new system. Since it now appears that the FCC will probably authorize tests in the near future, all will have to wait and see—to be or not to be. . . .





KEY TO THE FESTIVAL AREA

- | | |
|---|------------------------------|
| 1. Old Jamestown Island | 9. Mermaid Tavern Restaurant |
| 2. Colonial Parkway | 10. Old World Pavilion |
| 3. Approach To Festival Park | 11. New World Pavilion |
| 4. State Highway No. 31 | 12. Chief Powhatan's Lodge |
| 5. James River Ferry pier | 13. Memorial Tower |
| 6. Speakers' Platform and Reviewing Stand | 14. The Mall |
| 7. Reception Center | 15. James Fort of 1607 |
| 8. Gift Shops and Restrooms | 16. The Three Ships |
| | 17. The Glasshouse of 1608 |



A view of the ultra-modern reception center located at the entrance to the spacious Jamestown Festival area.

Jamestown Festival

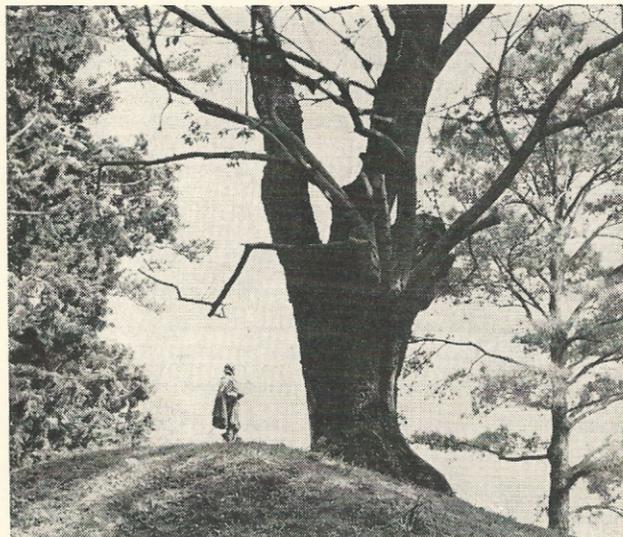
Virginia, Great Britain, and the U.S. Park Service Commemorate the 350th Birthday of America with a 3-way tourist attraction



Two young visitors to the festival feed the "colonists'" goats at their pen outside the James Fort stockade.



Chief Powhatan's Lodge, recreated exactly as it was in 1607, is a subject for busy photographers. Here, two descendents of early Virginia Indians pose in the garb of forebears.



Civil War earthworks and trees frame a statue to Captain John Smith, leader of the colony, from a commanding position on Jamestown Island, overlooking the river.

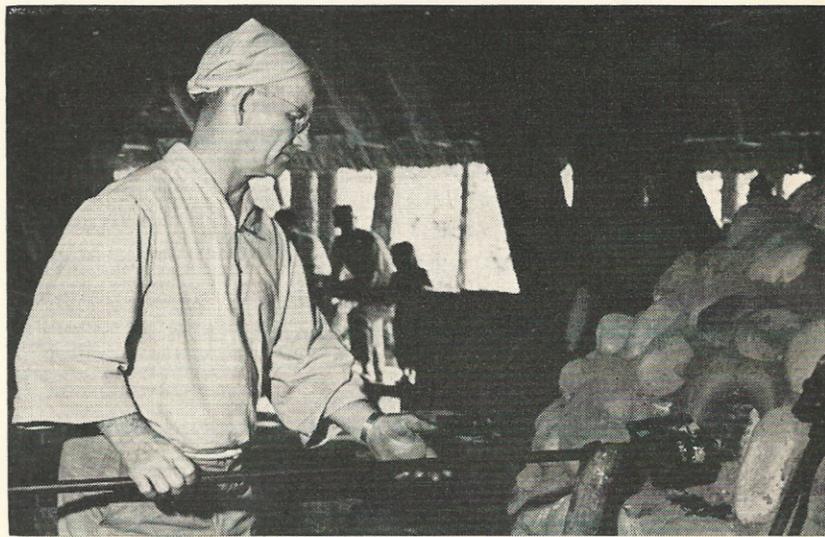
ON May 13, 1607—350 years ago, this month—a band of hardy men stepped ashore on an island in the James River of Virginia and founded the first permanent English settlement in America. In honor of James I, these men of the Virginia Company of London named it "James Towne."

This year, the governments of the United States, Great Britain, and Virginia have joined with scores of collaborating organizations to make possible an eight-month-long observance of the anniversary of this event. More than \$25,000,000 has been spent to prepare a festival and recreate the first colony. The clock has been turned back to the nation's beginning at Jamestown, as visitors peer into Chief Powhatan's Lodge, explore the early settler's three ships, stroll in their fort and watch bottleblowers in a colonial glass house.

The festival opened April 1, and it will continue through November 30. An estimated 2,500,000 visitors is expected, and the Festival urges those wishing overnight lodgings in the area to make them through the Festival Reservations Bureau, Box 427, Williamsburg, Virginia, for there are no accommodations at Jamestown.

A three-way tourist attraction is offered visitors. Williamsburg, the seat of colonial government, is only nine miles away. There visitors may visit restored homes, exhibition buildings, craft shops and old gardens in the restored town. About 15 miles down Colonial Parkway from Williamsburg is Yorktown, site of the final battle of the Revolutionary War, where George Washington defeated Lord Cornwallis, to gain American independence.

Yorktown and Williamsburg complete a geographic triangle which is rich in historical memories. A full calendar of events has been scheduled. During June there will be a Naval Review at Hampton Roads and special celebrations at Richmond, Roanoke, Petersburg, and other Virginia cities. Queen Elizabeth and Prince Philip are expected later in the year.



Glassblowing was America's first industry. At Glass House Point, near the Festival grounds, AFL-CIO Flint Glass Workers show visitors how early ware was blown.

A SMALL, compact frequency standard that requires only periodic connection to a commercial power line has been developed at the Boulder Laboratories of the National Bureau of Standards. The standard was devised by A. H. Morgan of the NBS Radio Standards Laboratory under the sponsorship of the U. S. Army Signal Corps.

Adapted for use in this unit is the principle of the latent-heat stabilization method for controlling enclosed-space temperature, developed by Robert Alvarez of the NBS Chemistry Division. Using diphenyl at its double-point (about 70°C); i.e., at a temperature where it exists as a mixture of solid and liquid, a temperature stability of a few hundredths of a degree centigrade was obtained. The oscillator stability was ± 1 part in 10^7 over a period of several hours.

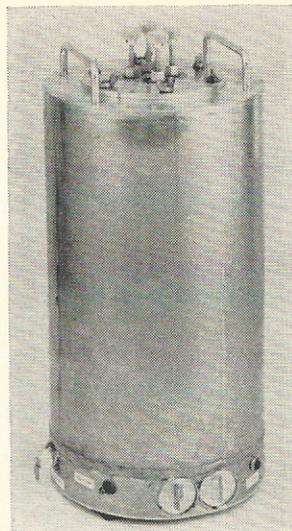
The instrument is expected to prove valuable for airborne use and in other cases where a stable but portable frequency source is required. Until now, all frequency standards of this precision have been large and bulky and have required continuous connection to a commercial power line.

The apparatus consists of a transistor crystal-controlled oscillator and a two stage transistor buffer-amplifier which are operated continuously from four small mercury cells contained in the bottom compartment of the standard. All components of the circuit are enclosed in the diphenyl oven which maintains them at a constant temperature.

Surrounding the diphenyl is an electric heating coil controlled by a microswitch. When the diphenyl is heated it increases in volume and presses against the bottom of bellows located in the inner compartment. This movement of the bellows closes the microswitch and opens the heater circuit. The heater can be adjusted to operate at varying degrees of temperature by a shaft which controls the height of the upper contact point of the microswitch. Heat losses from the oven are reduced by a heat radiation shield and vacuum insulation space.

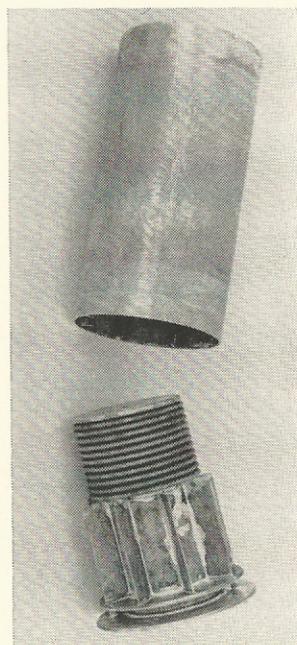
After the oven temperature has been stabilized at the double-point temperature of the diphenyl, the unit may be disconnected from the power source which supplied the initial heat, and operated for several hours on temperature without external power connections.

External controls are provided on the developmental model to adjust the oscillator frequency (coarse and fine frequency controls); the oscillator tank capacitor for best output voltage; and the oven temperature. An inexpensive, commer-



Development model of the portable frequency standard. On the top are the four marked controls: coarse and fine frequency, temperature and oscillator tank. Batteries are contained, two each, in compartments covered by the round covers at the bottom of the unit. A heater on-off switch and cycling light are visible at the bottom as well as the VHF connector for output frequency. The handles on top are for carrying the unit.

Portable FREQUENCY STANDARD



Partially disassembled view of the portable frequency standard. The upper unit is the compartment containing the oscillator and buffer-amplifier. Note the heat fins and the stainless steel bellows. The lower can, with inside fins barely visible, is used to contain the diphenyl. When assembled, the upper unit is fitted in and welded to the lower can.

cial, one-megacycle quartz crystal is used to control the frequency of the oscillator. The output voltage is about 400 millivolts into a 600 ohm load.

Silicon junction transistors were chosen for the oscillator and amplifier because of their ability to operate at high temperatures (up to 150°C), whereas germanium transistors cease operation around 80°C. The overall efficiency of the oscillator and amplifier is around 78 percent (input power from mercury cells is 7 milliwatts and matched load output power is 5.4 milliwatts).



President Freeman cites industry's responsibility.

President Freeman On Free Enterprise

Labor feels that it "can serve its membership better under the free enterprise system than under any other which has been devised," IBEW President Gordon M. Freeman said in an address in Chicago recently.

"So long as labor has that stake," he added, "it will work to preserve and extend the system. One of the jobs of industry is to insure that working men and women are never given reason to adopt the attitudes which exist in countries where the worker has no stake in his economic system."

Freeman, speaking at the American Power Conference, sponsored by the Illinois Institute of Technology, said that while he was "gratified with the labor-management relationships which have been established throughout the greater part of the electrical industry, honesty compels me to say there are still underdeveloped areas in which the idea of a 'people's capitalism' has not penetrated."

He asserted that it "would seem by now that the entire industry would be sold on the modern free enterprise system and would realize that it must be based on free enterprise for all who make up the industry."

He pointed out some labor-management conflict is inevitable, and that "good-faith collective bargaining is the only satisfactory method of resolving such conflicts in a democracy."

"Our system is dedicated to preserving a large measure of individual freedom," he emphasized, adding:

"We want no part of totalitarian efficiency because we know its price is the loss of our liberties."

NOTES AND QUOTES

A hi-fi fan in Chicago recently made somewhat of a splash by buying a Steinway grand piano merely to get the cabinet for his new electrostatic loudspeaker . . . money appears to be no object for a real, dyed-in-the-wool hobbyist.

According to the Institute of High Fidelity Manufacturers, basic components for hi-fi are now manufactured by more than 100 companies. In 1951, sales totalled 27 million dollars—in 1956, this total ballooned to some 166 million and the volume in 1957 will probably be closer to 200 million dollars.

The total cash dividends of corporations listed on the New York Stock Exchange once again set new records in the first quarter of this year, some 5 per cent above the 1956 figure. However, this rate of increase was considerably below the same quarter a year ago, when total payments in the first three months rose 22.1 per cent over the corresponding quarter of 1955. This is an especially interesting trend to employees in retail trade, no doubt. The Department of Labor just released a survey which reveals that more than one out of every four workers in the retail field earns less than \$1 an hour.

AFL-CIO President George Meany, speaking at a dinner held in New York, recently said that emotional stresses of the civil rights issue sometimes are so strong that they "warp the good judgment of even veteran trade unionists." "I have received letters from union members saying that they regard themselves as southerners first and trade unionists second," he said. "I told them that they had things a little twisted—that under the philosophy of our movement, a man first has to be a good citizen before he can be a good union man and that the first duty of a good citizen is to obey all the laws of the land."

"The 'right-to-work' laws are virtual conspiracy of the crafty, the ignorant or the misguided to subvert industrial peace, exploit men's need to work and deluge the community with industrial irresponsibility. 'Right-to-work laws' do not create jobs; they only victimize the worker and make his organization ineffective."—Rev. Dr. Walter G. Muelder, Dean and Professor of Social Ethics, Boston University School of Theology.

"Right-to-work laws are immoral according to Catholic Social teaching."—Rev. William J. Kelley, O. M. I.



Fin-Cooled Transformer

A fin-cooled power transformer for television receivers that solves its own heat dissipating problem and effects savings of about 10 per cent in cost has been developed by Zenith Radio Corporation. G. E. Gustafson, Zenith vice president in charge of engineering, made the announcement.

"By using a multiple fin construction in the new transformer," he said, "we have increased by 185 per cent the surface area which dispels heat developed by the unit. This steps up the rate of heat dispersal by 50 per cent, permits a substantial reduction in the amount of iron and copper used, and markedly reduces the weight of the transformer itself."

Gustafson pointed out that weight reduction, without sacrifice in efficiency, is important to the manufacturer of TV. With the possible exception of the picture tube, he said, the power transformer is the heaviest single component in the television chassis.

Zenith mounts its new transformer on the TV chassis in such a way that it acts as a pump, pulling cool air in from a vent located on the under side of the chassis. The air rises through the vertical chimney-like fins, cools the transformer, and escapes at the top of the cabinet back.

The fin-cooled transformer is manufactured in Zenith's westside Kostner Avenue plant and is currently used in some 22 of the company's 1957 TV receivers. The 21-inch and 24-inch chassis in Zenith's 1958 TV will also include the new-type transformer.

Gustafson said that Zenith has applied for patent protection on its new development.

Transistor Prediction

Development of fully transistorized television receivers will be technically practical by 1959, W. F. Palmer and George Schiess, electronics engineers of Sylvania Electric Products Inc., predicted this month.

Their forecast was contained in a paper delivered by Mr. Schiess before the North Eastern

District meeting of the American Institute of Electrical Engineers being held in Pittsfield, Mass.

Many of the TV receiver sections can be transistorized now with commercially available transistors, Mr. Schiess said. However, transistors of extreme frequency or voltage capabilities required for some circuits are now in the developmental stage and will probably be commercially available in the next two years.

"From then on, the development of fully transistorized TV receivers, comparable in performance to tube receivers, will be practical from a technical point of view," Mr. Schiess stated. Such receivers will initially cost more than tube receivers, he pointed out, but there are advantages which may be expected to offset the higher cost.

Mr. Schiess said the high efficiency of transistors may eventually open the way to battery-operated portable television receivers, practically impossible in tube receivers because of high power consumption. He also pointed out that transistors, having virtually a limitless life, would offer improvements in reliability.

Circuits suitable for use with transistors were discussed by the Sylvania engineer. He said that in general the circuits will follow standard tube practice. In certain cases, the unique advantages of transistors will lead to simplified circuits.

RCA Pict-O-Guide

Publication of the RCA Color Television Pict-O-Guide, a volume of illustrated step-by-step instructions in the installation, adjustment, and servicing of color TV receivers, has been announced by the RCA Electron Tube Division. The book was developed and written by John R. Meagher, RCA's nationally recognized authority on television servicing, who prepared the original Pict-O-Guide for black-and-white TV.

The Color Pict-O-Guide contains essential and practical information with a minimum amount of theory. It is profusely illustrated with full-color photographs taken from an operating TV receiver, supplemented with monochrome illustra-

tions and circuit diagrams that further clarify the easy-to-read notes. A sturdy multiple-ring binder holds the pages flat for easy reference during service work.

Photographs throughout the book speed up color TV service work by showing the actual, visual indication of troubles in the color circuits, effects of purity and convergence adjustments, and color saturation and hue controls. By reference to the pictures, the technician is able to observe the effects of interference and the use of color-bar generator patterns and "green-stripe" color test signals. Illustrated step-by-step instructions make it possible for the service technician to learn the proper procedures without personal instruction.

New Testing Approach



LANKARD

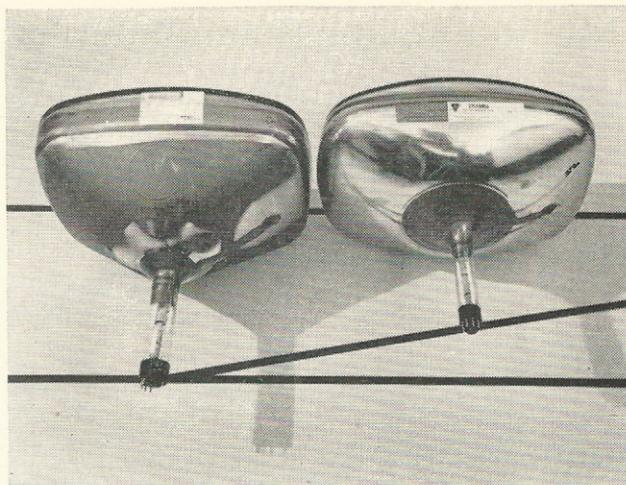
The development of 110-degree wide angle television picture tubes and "off the line" B plus power supplies have made obsolete static methods of testing horizontal deflection tubes, G. M. Lankard, advanced application engineer of Sylvania Electric Products Inc., said in Cincinnati, Ohio, last month.

In a paper delivered at the Eleventh Annual Technical Conference on Television, Mr. Lankard described various grid drive methods of tube testing developed by Sylvania at the company's Radio Tube Division general engineering laboratory in Emporium, Pa. He traced attempts to test dynamically horizontal deflection tubes through the use of 60-cycle sine wave grid drive voltage. Mr. Lankard said that although 60-cycle test equipment was relatively simple to construct, it presents difficulties in obtaining precise measurements.

Mr. Lankard described a square wave drive test recently developed by Sylvania. He termed this test "most promising" because it eliminates precision sampling resistor requirements together with their inherent noise pick-up problem. It also permits the use of simple direct current meters. The Sylvania engineer enumerated three major advantages of peak current testing of horizontal deflection type tubes using a square wave drive voltage.

1. The equipment is relatively simple to adapt to production testing.
2. Testing can be done at higher screen voltages without danger of damaging the tube.
3. Good correlation is obtained both with the static methods used previously and with television receivers' application requirements.

110-Degree Tube Shown



Sylvania Electric Products, Inc., demonstrated at a news conference recently that its 110-degree magnetic deflection picture tube permits a 50 per cent reduction in television cabinet bulk. The 110-degree tube, right, is shorter and lighter than the commonly used 90-degree picture tube, left. The company announced that it is producing the new, wider angle picture tube in 14-, 17- and 21-inch sizes, and also disclosed that its entire 1958 receiver line will use the 110-degree tube.

Navy Color TV Advance

The Navy announced recently it has developed a "revolutionary" television screen which could hasten development of color TV and three-dimensional viewing.

In place of opaque white powders now used, phosphorous in the form of a thin, transparent film is deposited on the face of a tube in the new process. The result, the Navy said, is a screen with a much sharper image and little loss of contrast.

The transparent film admits sunlight, which becomes lost in the darkened interior of the tube. Thus contrast is kept even with bright daylight shining directly on the tube.

Conventional screens have a grainy texture, scattering light and producing images with hazy borders, the Navy said. It said that does not happen in its new screen, "so that the image is as sharp as the electron beam in the tube."

The transparent films also make possible a "completely new approach" to color television. Films creating different colors can be deposited and lighted separately or mixed by controlling the speed or direction of the electrons in the tube.

"By using one film of each of the three primary colors the complete color spectrum can be obtained by proper mixing," the Navy said.

The process was developed by Dr. Charles Feldman of the Naval Research Laboratory. The work began in an effort to simplify aircraft instruments.

Station

Breaks

Tape-Making Buy

A joint statement by George I. Long, president of Ampex Corporation in Redwood City, Calif., and J. Herbert Orr, president of Orradio Industries, Inc., of Opelika, Ala., recently disclosed that Ampex has acquired a 25 per cent interest in the tape-making firm. Financial arrangements were not disclosed.

Team effort by engineering and research facilities of tape maker and recorder manufacturer will be directed toward the subsequent production of the highest possible quality magnetic recording tape for video, computer and instrumentation use. Long indicated that both firms are striving to push forward the boundaries of the magnetic-recording art, which until now has been limited by the tape itself.



LAST

CALL

for the

Progress Meeting

The Radio, TV and Recording Division of the IBEW meets at the Roosevelt Hotel in New Orleans, La., June 14, 15 and 16.

Your local union should be represented in the important discussions which will be held. There is still time to make reservations. The local committee is working hard to make this meeting the most outstanding progress meeting ever held.

Device Films Telecasts

Latest development in the effort to produce high-grade film simultaneously with live telecast is a device called Tele-Cam.

The brain child of two young Pittsburgh technicians, who claim unusual clarity for their 16mm film product, Tele-Cam attaches to the TV camera in 20 minutes and uses a common lens-turret. Tele-Cam attributes an exceptionally sharp color or black-and-white film to a split-beam principle which overcomes the 525-line barrier imposed on kinescope and tape reproductions. This principle utilizes about 15 per cent of light in transmission of the live image and up to 80 per cent in the film camera, with percentages variable to suit different conditions. Two Tele-Cam units used in conjunction with two TV cameras can turn out a filmed half-hour show ready for printing within 10 hours. A separate kinescope is used as an editing guide.

The compact unit was devised last June by Warren R. Smith, president of his own film production-laboratory firm, and Robert Ferber, then a 21-year-old senior student of the U. of Pittsburgh. Four months after they made the original drawings, Tele-Cam units were in use at educational station WQED (TV) Pittsburgh. Encyclopedia Britannica Films has used the units to film a series of physics lectures telecast by WQED, and they are scheduled for showing this month in Chicago high schools.

The first version of Tele-Cam was designed for use with RCA equipment. The second model, slated for mass production, will be adaptable to DuMont and GE cameras, Tele-Cam Inc., says. Elements of the system are base plate, focussing turret mounting plate, beam splitter, optical system and 16mm film camera. The firm is handling distribution on a lease basis.