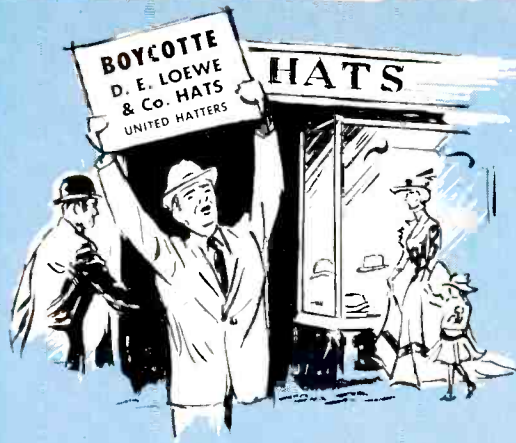


TECHNICIAN ENGINEER

MAY, 1962

Published for the Employees of the Broadcasting, Recording and Related Industries

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS — AFL-CIO



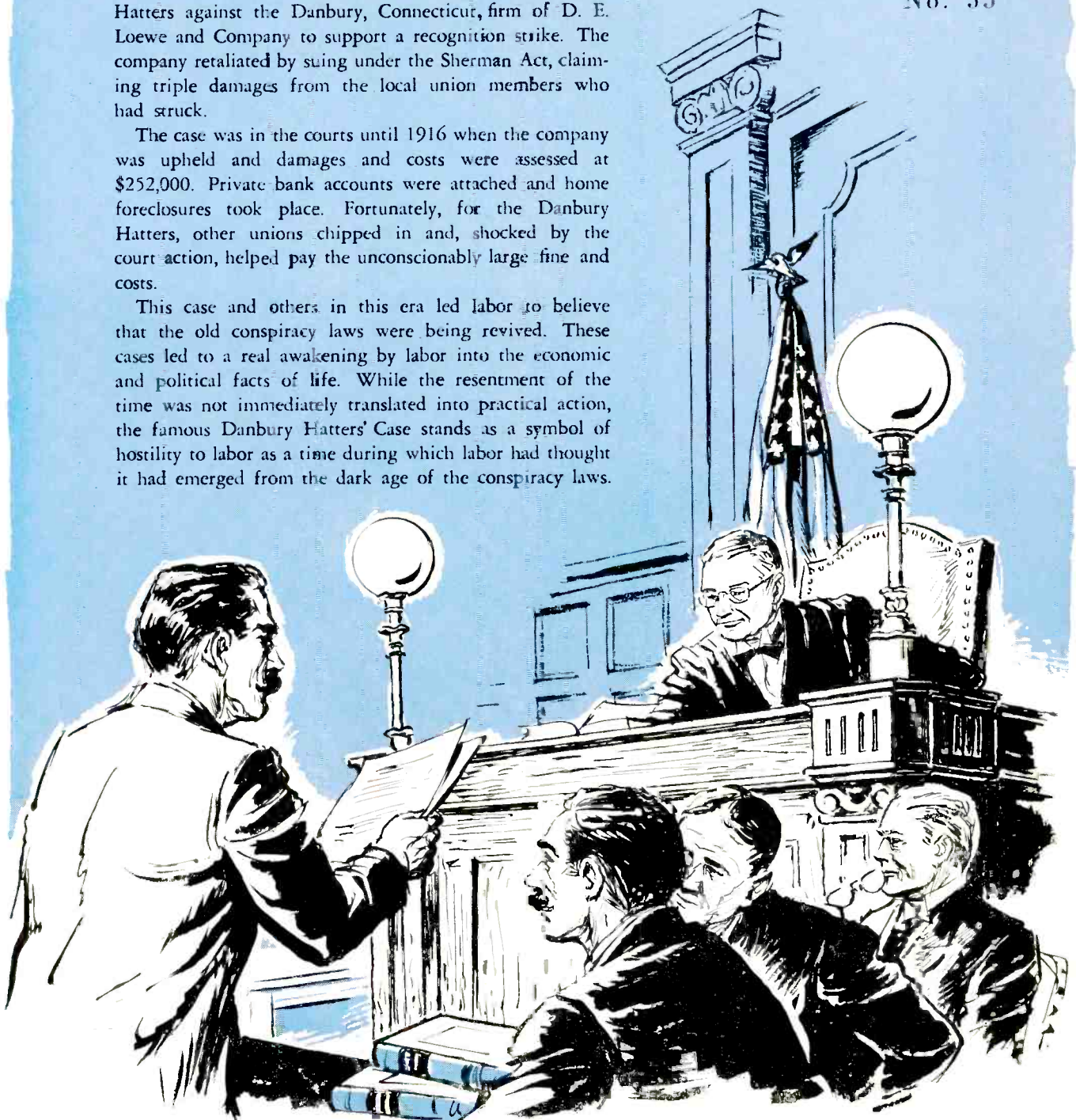
THE DANBURY HATTERS' CASE, 1902-1916

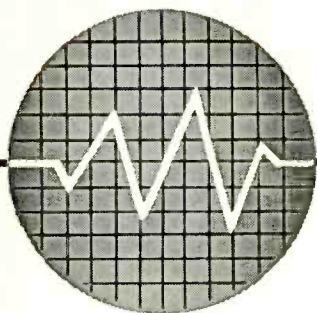
LANDMARKS
OF LABOR
No. 35

In 1902 a national boycott was declared by the United Hatters against the Danbury, Connecticut, firm of D. E. Loewe and Company to support a recognition strike. The company retaliated by suing under the Sherman Act, claiming triple damages from the local union members who had struck.

The case was in the courts until 1916 when the company was upheld and damages and costs were assessed at \$252,000. Private bank accounts were attached and home foreclosures took place. Fortunately, for the Danbury Hatters, other unions chipped in and, shocked by the court action, helped pay the unconscionably large fine and costs.

This case and others in this era led labor to believe that the old conspiracy laws were being revived. These cases led to a real awakening by labor into the economic and political facts of life. While the resentment of the time was not immediately translated into practical action, the famous Danbury Hatters' Case stands as a symbol of hostility to labor as a time during which labor had thought it had emerged from the dark age of the conspiracy laws.





TECHNICIAN ENGINEER

VOL. 11, NO. 5

ALBERT O. HARDY, Editor

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the cover

The oscilloscope shows heartbeats, as it did on the occasion of Colonel Glenn's orbital flight. Medical personnel with a familiarity with electronics "tracked" Glenn's heartbeat and the 'scope shown on our cover was located at the Telemetry Data Processing Center at San Diego, California.

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 1961 figures: March, 1962—105.0; March, 1961—127.5; April, 1962—105.2; April, 1961—127.5; (Please note: With the January, 1962, index, the reference base was changed to 1957-59=100, from a previous base of 1947-49.)

COMMENTARY

In the course of being interviewed recently, Secretary of Labor Goldberg made an interesting observation about the art or science of collective bargaining which is worthy of repetition. While many schools and universities have excellent formal training programs, there is much to be said in support of the Secretary's remarks.

He said, "Looking back, I wonder how I felt I had any qualifications for the work. I had had no academic courses in collective bargaining, and not even any formal training in economics, and yet I participated in many strike settlements and didn't seem to be especially overwhelmed by the difficulties or to feel the need for formal instruction. This has led me to the conclusion, which I

still hold very strongly, that this art, or science, or whatever you may call it, of collective bargaining is something that probably cannot be taught. It must be largely intuitive, and in this sense I suppose it's like any creative process. You either have the qualifications or you don't. The main thing you must have is the ability to realize there are two sides to the story, and so to be generally calm and courteous in the handling of people in inflamed situations, but at the same time not to relinquish a position of leadership, which on occasion will require the calmness and courtesy to be submerged in a show of vigor and strength and even anger."

Broadcasting

Not a Business

But a Profession

Chicago Broadcaster Calls for Quality vs. Quantity and Return of Radio to Sound Footing

WARD L. QUAAL, Executive Vice President and General Manager of WGN, Inc., Chicago, addressed the Radio and Television Executives Club of Toronto early in May and very little of his thoughtful remarks were reported in news or trade publications in the U. S. *The Technician Engineer* received his permission to extract some of the interesting things he said which, in the editor's opinion, are worthy of further thought and repetition. Some pertinent excerpts follow:

When he called me several months ago asking me to appear before you today, our mutual good friend, Andy McDermott, stated that he wanted me to stress radio in my remarks and that I am happy to do at this visit with you. We in the States and you good people in Canada share many wonderful things together—our traditions, our open borders, our priceless democratic way of life and the radio waves that are heard, in many cases, the length and breadth of both of our countries.

I have been in the radio industry since 1935 and in television since its first year of infancy as a commercial medium. I still feel today, as I have throughout these 27 years, that radio is the greatest mass communications medium of all time.

On two different occasions, early in the period of his Presidency, I heard the Honorable Dwight D. Eisenhower refer to radio and television as "media to inform the people fully, fairly and freely, to hearten their spirit with healthy entertainment, to encourage in every possible way aspiration toward a better state of all mankind. These are the high purposes to which you are dedicated.

It is a tragedy, therefore, that in the United States it is being so badly misused in so many instances, in so many areas. When we went to war in 1941, we had a few more than 800 radio stations licensed and operating. Today, we have approximately 4,000 stations, combining AM and FM, with more than 3,500 being in the AM field alone.

This "population explosion" has wrecked the onetime solid front of sound engineering standards. The Federal Communications Commission, by its wholesale granting of licenses with reckless abandon, has become the midwife of the "rock-and-roll" formula. This trashy programming has attracted to our industry the "Johnny Come Latelys," the "Experts of Expediency" and the "Quick Capital Gains Boys." Such people in a day can ruin the good programming efforts and public relations of the pioneers who made this industry so great and made its service so vital to the people of the United States.

Think of it, gentlemen, the city of Albuquerque, New Mexico, with a population of 204,000, has 15 radio stations, not to men-

tion three television properties. Phoenix, Arizona, with approximately 600,000 people, has 17 radio stations and 13 FM stations, plus four television stations.

Now, let us examine what happens when engineering standards are thrown "out the window." In the city of Phoenix, a metropolitan area that has had the most constant growth of any in our country, the then 15 radio stations reporting to the Federal Communications Commission in 1960 showed a total loss of \$62,000. Orlando, Florida, because of its proximity to Cape Canaveral, is the second greatest growth area in our country today. In 1960, the last year for which complete figures are available, the eight radio stations in that market reported a profit *before taxes* of \$8,200 among them.

* * *

Taking entire states as examples, in Utah, 13 stations in 1948 shared \$137,000 income before taxes. In 1960, 28 stations in that state shared a loss of \$51,000. In California in 1948, 93 stations shared \$1,447,000 income. In 1960, 192 stations shared \$1,665,000. In the state of North Carolina, 84 stations shared income before taxes in 1948 of \$872,000. In 1960 in that state, 160 stations had a smaller income, namely, \$842,000.

This is the reason that we have stressed in all of our filings with the Commission, involving both radio and television, that ours is an industry where increased competition does not necessarily mean a better product for the consumer, because if a man cannot make a profit in any business, he resorts to a routine that often departs from standards of integrity. The figures above demonstrate very aptly why so many stations have taken the cheap routine in programming and community service.

At the recent convention of the National Association of Broadcasters in Chicago, the traditional program featuring the FCC panel of seven members answering questions of delegates evolved the issue of the damage to the U. S. radio industry stemming from too many stations. One broadcaster, in a written question to the FCC panel, asked what was going to be done to elevate engineering standards, at which point the veteran and highly respected Commissioner T. A. M. Craven replied: "We have the finest in engineering standards, but they have been ignored."

* * *

With further reference to the station "population explosion" in radio in the United States, I might add that we have learned the hard way that in our business additional competition does not necessarily mean a better product for the consumer. In fact, quite the opposite is often true. When a businessman cannot make a profit, he resorts to all types of sub-standard approaches. I regard the broadcaster who disseminates nothing but "rock and roll" and other trashy, noisy programming as being guilty of thievery of the very populace he has been licensed to serve.

Recently, a fellow broadcaster said to me: "Quaal, no matter what statements we make about radio today, we can best describe our state in five short words: We are in a mess."

Yes, we are, and it can be dramatized by comparing 1946 and 1960 in our country. In that 14-year span, our population showed an enormous increase from 140 to 184 million people.

The number of radio homes increased from 34 to 53 million. The Census Bureau estimates that we had 97.7 million sets in American homes and 47 million automobile receivers in 1960.

While the total number of radio homes has increased since 1946 from 34 to 53 million, the reported income before taxes of all U. S. radio stations, exclusive of those owned and operated by the networks, reflected a *decrease*, mind you, from \$57 million to \$51 million. As stated earlier in these remarks, a great many of my associates in broadcasting are losing money. In fact, roughly one-third of America's radio stations reported a loss for 1960. About 30 per cent managed to keep their feet out of red ink, reporting a profit of less than \$5,000.

In the words of the distinguished Chairman of the Federal Communications Commission, the Honorable Newton N. Minow, "The United States has become a nation wired for sound, motorized or on foot." Today, radio follows us wherever we go, and that is why programming in the aural medium must be designed for individual listening. We must cater to the mobile audience, persons going to and from work, the motorist on our highways, the homemaker in her kitchen or laundry room or den, the hobbyist as he plies away in his workshop. And, now, with the development and the perfection of the pocket radio, we visit each day the gardens of our community, the beaches, the ski lodges and toboggan slopes, the grandstand, the subway, fishing streams and cottages and camps in the woods.

Radio, in our country and yours, will continue to be a highly personalized medium, and by 1970, we predict that we will have 250 million receivers in use in homes and automobiles in the United States. In 1970, we predict radio will be very much patterned after today's newspapers, with programs "departmentalized" just like your newspaper of last evening or this morning. News, sports, public affairs and programs designed for the personal needs of the listener will dominate broadcast fare.

Chairman Minow of our FCC and LeRoy Collins, President of the National Association of Broadcasters, are in the process now of making plans for preparatory meetings prior to the holding of a U. S. radio conference. It is hoped that through these sessions, which will be of substantial length, we will be able to "undo," so to speak, at least some of the damage precipitated by the departure from sound considerations in granting of licenses.

* * *

In meeting with other broadcasters, one often feels presumptuous in addressing himself to the business practices of our

Governor Collins Stresses Spectrum Over-population

Nearly concurrent with Mr. Quaal's address, Governor LeRoy Collins, President of the National Association of Broadcasters, told the Kansas Association of Radio Broadcasters that the FCC's record of granting licenses is radio's biggest problem. He said that the station manager "often finds himself in an economic box because the FCC has authorized more stations to operate in his market than the market can possibly support on any reasonable basis."

The NAB president is presumably ready to announce the appointment of a nine-member committee to direct the Association's review of radio's over-population and to cooperate with the Commission in its consideration of the crowded radio spectrum.



industry. Yet, I feel we are long overdue, gentlemen, in making broadcasting not just a business, but a profession. Quite frankly, I think radio's best years lie ahead of us if each of us, as its stewards, are mindful of our responsibilities to the various communities we are privileged to serve.

Radio station owners should take inventory of their management. Are these men and women trained for their responsibilities in this sensitive profession? Are these people equipped to be responsible stewards in an industry that embraces so much of the time of the waking hours of every citizen? People make radio and television what it is.

Let us face it, friends, some persons have no business in this industry. In the words of the highly respected Charles Brower, President of BBD & O (Batten, Barton, Durstine & Osborn, Inc.), "There is no business that so thoroughly punishes the clumsy amateur. In a business such as ours where boys and girls become men and women rapidly, you have got to have a lot more than heart. You have got to have that—plus responsibility, sensitivity, judgment and understanding."

Where we have good management today, that veteran and trained personnel must devote considerable hours each week to the building of future executives for this radio industry. In short, I respectfully recommend that each one of us devotes more time to so-called "in-job" training of our better young people for their roles as tomorrow's leading broadcasters.

In addition to teaching these youngsters about some of the phases in which we feel we have attained some proficiency, we should stress, above all, religious adherence to rate cards to the point where they are regarded as a "daily Bible." We must attempt to bring into reality at the earliest possible date implementation at every station of a single rate card.

I know of no one move that would do more to encourage national advertisers to devote more of their budgets to radio. Let us make it easy for them to buy this great and dynamic medium and, after they make the purchase, let us have them feel confident in the buy that they have made. This cannot be done if we operate on a double set of standards. Our basic responsibility is, of course, our programming.

Better programming, through balanced broadcast fare, is really the only way to improve our lot as a medium and as an instrument of community service. You can have the finest building, the best equipment, the most talented sales and promotion personnel, but without good, sound balanced programming, you might just as well not be in business.

In preparing these remarks, I debated with myself as to whether or not I should speak of the WGN "story." I have



BROADCASTING, A PROFESSION

Continued

elected to be more than a bit presumptuous by addressing myself briefly to the period from August 1, 1956, to the present when I have had the good fortune to serve as the head of operations for WGN Radio and Television. In August of 1956, WGN Radio (and Television) were operating in the red, in disrepute in the industry and the community for lack of quality standards in broadcasting. This situation was quite a paradox, for then, as now, the Chicago Tribune has been greatly respected as a newspaper, even by those who disagree in whole or in part with it editorially.

The Tribune, throughout its history, has been a vital force in and contributor to not just the community of Greater Chicago, but the nation as well. For years, broadcasters had been puzzled about this incongruous situation, where a great newspaper failed to harness effectively its radio and television operation.

The Board gave me absolute autonomy and applauded my efforts to chart a course along the "high road." First, we literally "threw out" \$242,000 worth of pitch and mail-order business and commercial religion from the radio station alone. We dispensed with \$597,600 of the same type of sub-standard commercial traffic on the television station.

Soon the red ink turned to pink and, finally, black, so much so that in the last quarter of 1956, the profits of WGN, Inc., were better than for any 12-month period prior thereto. The upgrading continued. All "rock and roll," including the so-called "Top 10 on WGN," was removed from the schedule in early 1957. More varied program formats were offered so that we could say with pride and justification that we had "something for everybody," catering, of course, to the adult audience.

WGN Radio joined the NAB Radio Code, but adopted its own standards, far more restrictive in nature. We expanded our program staff, our farm department, increased our sports activity, developed the largest and, we feel, best-staffed newsroom in the city and, perhaps, the nation.

Where are we today? We have the largest circulation in radio in Chicago and second nationally. In gross billings, WGN Radio leads in Chicago and, as best we can determine, we are a healthy second nationally, with our only competitor for this honor being east of the Hudson. More home and automobile radios are tuned to WGN Radio each week than to any other Chicago station because of the balance we have instilled in the programming and due to the quality of the over-all operation.

Radio in the United States is, unfortunately, in a relatively weak position today. The success of WGN is shared by only a handful of stations. They, too, have found that the road of quality, integrity and responsibility pays the most dividends. Our sales record in 1960 was such that some wondered if we could ever "top" it. We managed to do so by five per cent in 1961. I can say without hesitation and in spite of the climate involving national advertisers in their use of radio in the United States that WGN Radio this year should show an improved position over 1961 by approximately 10 per cent. This proves it can be done, but you have to have the faith in yourself and faith in this vibrant force of aural communications.

Like its sister radio station, WGN Television does not have the benefit of network service. Yet, over a 12 months' period of

time, according to Nielsen, it finds itself in second place in total quarter-hour audience leadership. Also, WGN Television is in a virtual tie for second place in the market among four commercial television stations and records an annual gross billing far in excess of one of the network owned-and-operated television stations in Chicago.

* * *

The gross billings of WGN Television are such as to find it in sixth or possibly tied for fifth position nationally. These are impressive facts, but they can be better and we are setting out to make them so in the months and years to come.

* * *

The underlying statutory philosophy of the Communications Act of 1934, as amended, is set forth in Section 303 of this instrument, authored by the late Senator Wallace White of Maine, and mentioned no less than 13 additional times in the statute.

This all-important phrase embraces the "public interest, convenience and necessity." Certainly the FCC must determine whether or not a station in radio or television is fulfilling its obligations and, therefore, meeting the spirit and intent of Section 303. The Commission, however, cannot go beyond this point, for as set forth in our precious First Amendment to the Constitution and in Section 326 of the Communications Act of 1934, as amended, the Commission is precluded from involvement in the program structure of the licensee.

Actually, the broadcast portion of the present Communications Act was lifted directly from the 1927 Radio Act. Much has happened in the radio industry since the Communications Act of 1934, as amended, was enacted into law, and we have seen since that time the development of the dynamic new medium of television.

It would seem, therefore, that "piecemeal" legislation, through additional amendments, would be futile, and that we should have in our country a new Communications Act and it should be based upon the First Amendment to the Constitution. There are too many so-called "gray" areas emanating today from interpretation of our present Communications Act. New legislation is urgently needed, not only to update the instant statute, but to define the limits of the involvement of the Federal Government establishment in broadcasting.

* * *

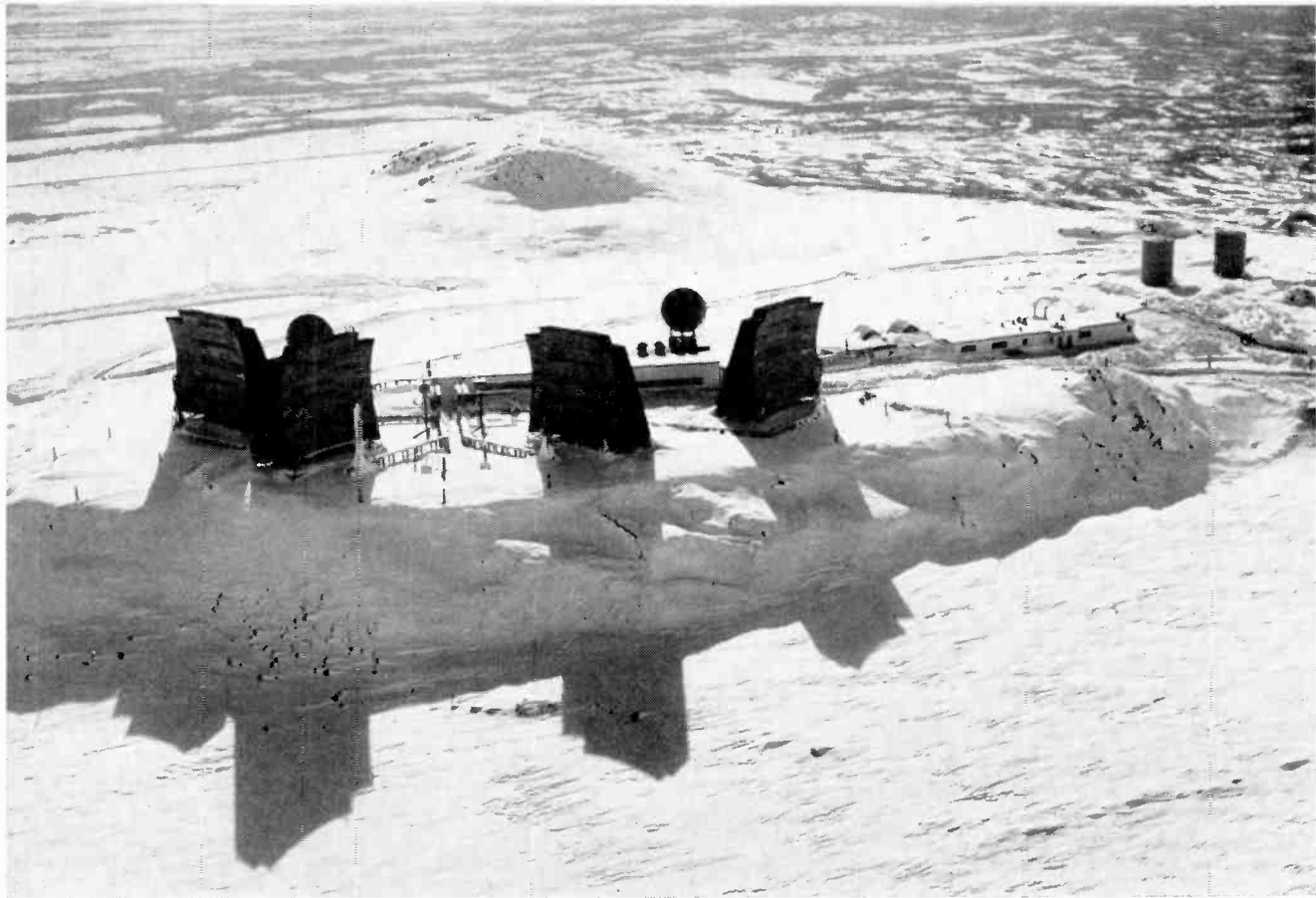
I hope that whatever we do in radio and television, we will place our emphasis on quality throughout our enterprise. In that regard, let me say that my philosophy in broadcasting can best be summed up by a statement by the great Henry David Thoreau, another nonconformist, in his beloved "Walden":

I know of no more encouraging fact than the unquestionable ability of man to elevate his life by conscious endeavor. It is something to be able to paint a particular picture, or to carve a statue and so to make a few objects beautiful, but it is far more glorious to carve and paint the very atmosphere in the medium through which we look, which morally we can do. To effect the quality of the day, that is the highest of arts."



ELEVENTH ANNUAL PROGRESS MEETING

•
Radio—TV—Recording
September 7, 8, 9, 1962
Montreal, Quebec



Aerial view of a remote White Alice site—elevation approximately 2300 feet above snow-covered terrain.

TROPO ATOP THE WORLD

by RICHARD E. WOOD JR.

Business Representative Unit No. 105 (Technicians)

Local Union No. 1547 IBEW

THE 49th State, thought by most to be an inaccessible wasteland, has been penetrated for years by the Eskimo and his dog team, by the trapper and prospector, and by the bush pilots.

True, most areas are remote and communications, as those in the lower 49 know them, are practically nonexistent. Ham radio operators and bush pilots were for years the only link with civilization.

Then in the mid 50's changes began in Alaska. Mountain tops were flattened. Air strips were laid out, and construction was started on what is now known as White Alice. As can be seen from the accompanying photos, these installations are quite large and wholly self-sufficient.

In effect the White Alice system is the long lines department of the Air Force portion of the Defense Communications System and moreover an integral link in the Nation's early warning system. The state of Alaska is completely encompassed by White Alice. From the tip of the Aleutian chain to the frozen wastes of the Bering Sea the horizon has been reshaped by the antennae of these installations.

At these installations you will find members of Local

Union 1547. Their classifications are electronic technicians, crossbar technicians and PBX installer-repairmen—as fine a group of telephone men as has ever been assembled. In most cases there are no towns near or even accessible to the sites, and therefore, dedication to duty and the ability to live secluded are great prerequisites of the White Alice technician.

How were the great distances and remote places linked for telephone communications? For years radio was the only way to span the miles and cross the mountain ranges. The Bell Telephone Laboratories were commissioned to design a better system that could function in these remote areas. They took the task in hand and developed the scatter system in use today.

Forward Propagation Tropospheric Scatter, called FPTS by engineers and known to the technicians as Tropo, is propagation which is accomplished by scattering electro-magnetic waves in the troposphere. FPTS ties together a transmitter and receiver not in line-of-sight. It is point-to-point transmission over the horizon. The scatter volume determines the amount of energy that reaches the receiver. To those technicians in the other states who are intrigued by FPTS, we suggest that for the technical adventure of your lifetime, try TROPO!

MORE ON WHITE ALICE

"CHEECHAKOS"

When the RCA Service Company took over the management, operation and maintenance responsibility of the White Alice communications network in Alaska, the Alaskans decided to look before they leaped into any kind of welcome for the "cheechakos" or newcomers.

As the employees settled into their daily routines, the native Alaskans were surprised at the effort made by the new citizens to become a part of their community with the obvious help and encouragement of their employer. Either individually or as members of the RCA Civic Club, virtually all of the 200-plus contingent at the White Alice Headquarters have pitched in on community projects. Company personnel helped clothe a family of nine that was burned out of its home, they supplied water to an isolated community that had run dry in the middle of the winter, and even housed an entire Eskimo village when the weather endangered their lives.

At least one Alaskan has been convinced to accept the Cheechakos. She's the lady mayor of the town of Bethel, and she recently *married* the company supervisor there!

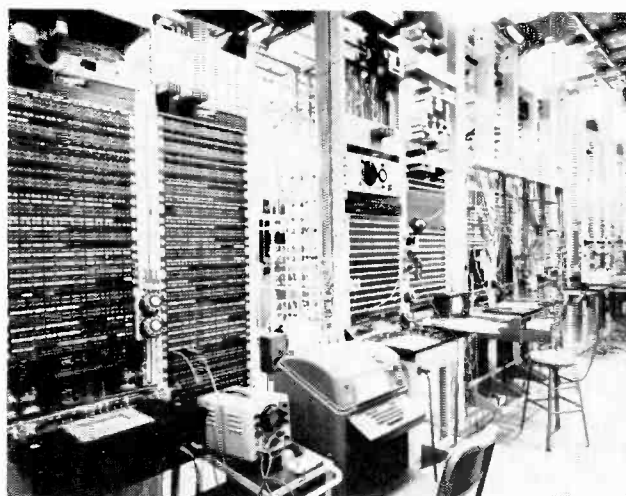
Alaskan Pride

Our April issue contained a story on the White Alice System, too. Almost by return mail we received the following letter from one of our friendliest friends and severest critics. Well, we tried—even if it did turn out to resemble a snow job!

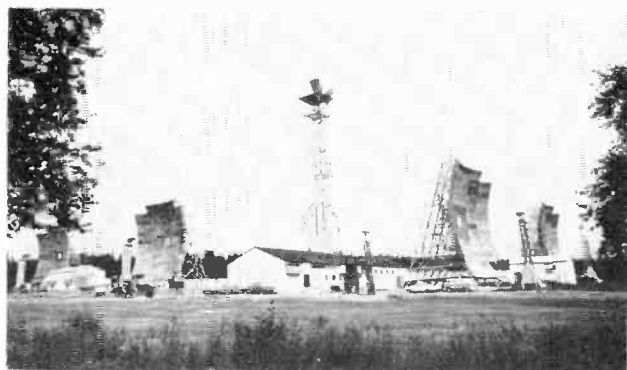
"Dear Editor: When Alaskans talk about Alaska, they use all kinds of finesse to get an opportunity to tell you the size of their state. The editor was mousetrapped into this position by the article in last month's *TECHNICIAN-ENGINEER*. This article was about the visit to the White Alice System by Vice President Foehn, of the Ninth District. The short section of the DEW Line referred to is only a few hundred miles long. The White Alice System could best be explained by the following comparison. It runs in a great arc from Annette Island in the extreme southeast part of Alaska to the end of the Aleutian Islands. This arc would span from Cape Canaveral, Florida, to Vandenberg, California. North of this arc the White Alice System furnishes communication to 574,000 square miles through a crazy-quilt pattern of tropo- and microwave stations."



An aerial view of Ocean Cape, a White Alice site in South-eastern Alaska.



A White Alice equipment array, showing tall test boards.



A view from ground level indicates the size of the big radar search units.

BROTHERHOOD IN ACTION

Charles Christian of Local 1212, New York City, was killed September 15, 1958, at the age of 43. He was a passenger on the Jersey Central commuter train which plunged into Newark Bay when the Bayonne Bridge trestle was left open by mistake. He was one of approximately 45 persons killed.

Charlie was employed at CBS for 16 years, was a member of Local 1212 for 13 years and at one time was financial secretary of the union.

He was promoted to engineer-in-charge in 1956.

A memorial fund was established in Christian's name. Over \$4,000 was donated by CBS technicians, Local 1212 members, employees of other shops and stations, producers (CREI, WTVJ, etc.), show business personalities, directors, and interested friends.

We are in receipt of the following memo from the Fund's trustee:

"I am pleased to announce to all who in 1956 contributed to the Educational Fund for Charlie Christian's children, that his daughter, Lynn, graduated from the University of Ohio on February 3, 1962. Lynn is planning to accept a teaching position, specializing in training handicapped children.

"You will be happy to know that the balance of the trust fund held in the Howard Savings Institution of Newark, New Jersey, (one of the trustees) is still growing, and that the fund will be sufficient to provide substantial assistance to Charlie's two sons, Randy and Bobby, when the time comes for them to enter college. Randy will be ready for college in about five years.

CHARLES GIRIAT, Trustee
Charles Christian Memorial
Educational Fund."

BROWN NAMED TO UN POST

Irving Brown, AFL-CIO overseas representative, has been appointed the representative of the International Confederation of Free Trade Unions to the United Nations.

Omer Becu, general secretary of the ICFTU, announced Brown's appointment, declaring that it marks "an increasingly active world-wide campaign" to implement the principles of the UN charter.

Brown took over his new post on April 2 and will maintain headquarters at the ICFTU office in New York.

The ICFTU is a UN-recognized non-governmental organization which has the right to appear at sessions of UN bodies such as the Economic & Social Council to present the free trade union viewpoint.

Brown represented the former AFL in international labor activities starting in 1945. With the AFL-CIO merger he continued as labor representative on the ICFTU executive board and as a spokesman at labor conventions in different parts of the world.

I.P.P. WINS TIMES ELECTION

One of the nation's most noted bastions of the open shop, the Los Angeles *Times*, now has the first certified union in its 80-year history as the result of a recent NLRB election.

The *Times*' pressroom employees voted for the International Printing Pressmen's Union in a Board-conducted election and following two recounts of the ballots, by insistence of the *Times*' management, the IPP&AU was certified.

With the suspension of the evening Los Angeles *Mirror* and the morning Hearst *Examiner*, the *Times* picked up circulation since last January and it now claims something more than a 750,000 daily circulation and Sunday publication of about 1.1 million. The IPP thus felt organization of the *Times* was more than ordinarily important; the loss of hundreds of newspaper jobs at the defunct papers has created serious problems in all the area's unions.

U.S.I.A. JOBS AVAILABLE

The U. S. Information Agency has openings for T.V. technicians. Qualifications requirements are at least five years' technical experience in radio or television broadcasting, recording or allied fields which demonstrate a good knowledge of electronics and technical experience principles applied in the broadcasting or recording of television programs. At least three years must have been in television broadcasting. The salary scale begins at \$133.60 per week and increases until the maximum of \$197.60 per week is reached at the end of the fourth year. At the present time hiring is limited to the first step but it is possible that this may be changed to the second step (\$148.80) for exceptionally well-qualified applicants, all of these jobs are in Washington, D. C. Applications should be mailed to: Chief, Employment Branch, U. S. Information Agency, 1776 Pennsylvania Avenue, N. W., Washington 25, D. C.

9 WAYS TO KILL ANY UNION

1. Don't go to any of the meetings.
2. But in case you do go, go late and make a lot of fuss and noise when you enter.
3. If you should happen to attend, always criticize the officers and members.
4. Never take any office, but criticize the guy who is in office.
5. Don't say anything at the meeting. Do all your beefing afterwards.
6. If asked to do something refuse, but always yell that the union is being run by a clique.
7. Don't report any grievances, but whisper that the union doesn't take those things up.
8. Tell everyone that nothing is being done.
9. Don't pay your dues but tell everyone that the union is squandering your money.



Computers Can Play Chess, Compose Music, Pick Stocks

ELECTRONIC computers, or so-called “thinking machines,” are triggering a second industrial revolution in offices and factories.

The first industrial revolution, beginning in the 18th century, introduced power machinery that took over many tasks of human muscles. The new revolution is providing a potent assistant for human eyes and brains.

The first revolution gradually ended some of the most brutal forms of physical labor—for example, slaves’ backbreaking job of pumping out silver mines in New Spain with crude machinery. The computer revolution, which got under way during World War II, will free men from many mentally stultifying tasks such as adding and multiplying thousands of figures, filing and retrieving massive amounts of routine information.

TO SIMULATE TRAFFIC

The National Bureau of Standards has programmed high-speed data processing and display equipment to simulate traffic flow over a nine-block length of a principal traffic artery in downtown Washington, D. C. After information on volume of traffic and traffic controls has been fed into the system, the simulated traffic flow is tabulated on printouts and is also shown in a motion picture of simulated cars moving, changing lanes, and stopping for lights, as in a helicopter view of the actual streets. This result has been attained in a three-year program conducted by M. C. Stark of the

NBS data processing systems laboratory for the Bureau of Public Roads.

For some time the rapid increase of traffic on city streets has been a source of concern to traffic engineers and city planners. Municipalities must assume that streets now used to near capacity will have to carry even more traffic in the future. Thus traffic experts feel that detailed studies to correct congestion points—which even now are urgently needed—may become absolutely essential within perhaps the next decade. In such studies the problem is to determine the results of proposed changes in traffic control measures without actually disrupting traffic.

Automatic data processing to determine the optimum use, timing, and placement of traffic control devices appears to offer a promising approach to this problem. Simulation runs can be made with a computer to study the sensitivity of the traffic flow to proposed changes in the signal system and to explore the capacity of an existing system to handle different patterns or increased volumes of traffic. Many other traffic engineering situations—such as use of one-way streets, banning left turns, location of bus stops, and restriction of parking—also can be studied in this way.

Even more startling uses for computers may be in the offing. A United Nations conference discussed an enormous computer to store the world’s knowledge. Using new physical principles, the equivalent of one human’s memory could be written on a piece of glass the size of a photographic plate. Such plates might then be hooked up into a fantastic common memory.

Computers might also be used to forecast a nation’s economic health and perhaps avert depressions. A mathematical physicist has parlayed \$6,000 into a \$240,000 fortune in six years by putting stock market data through a computer and following its advice.

Doctors may some day feed details of patients’ symptoms into a computer and wait while the computer com-

piles a list of diseases that could be responsible. Theoretically, this would prevent the doctor from overlooking rare ailments. Lawyers might also use computers to do research for legal precedents.

TWO BASIC TYPES

Basically, the wonder-working computer is nothing more than a complex of electronic devices hooked up to process data. A computer is classified as analog or digital. An analog computer, like a slide rule, works by measuring. It converts numbers into physical qualities such as distance or electrical resistance. For example, the number 200 might become a fraction of an inch on a cylinder.

A digital computer is like an abacus. A counting device, it converts numbers into units like the beads of an abacus. It then uses these counters in its operations.

Digital computers employ the binary system instead of the decimal system. The binary system uses only two numbers—1 and 0. Binary 1 is the same as decimal 1, but 2 is 10, 3 is 11, 4 is 100, 5 is 101, 6 is 110, seven is 111, eight is 1000, nine is 1001, and so forth.

The binary system is favored because it is easiest for machines to handle the language of the "bit"—the tiniest amount of information that can be conveyed. A bit is a yes-or-no response. A light is either on or off; a switch is either open or closed. Any number can be expressed as a series of "bits." So can any word or idea. An English language symbol such as "New York" or "woman" can be translated into a pattern of holes punched in a card. Such a punched card can be filed, manipulated,

and recalled by a computer. The holes are translated back into English when necessary.

BODY USES BINARY SYSTEM

Curiously, the human body also uses the binary system, according to some scientists. The strength of a nerve impulse is always the same. The nerve cell either sends it or it does not. Thus the brain gets information in the same yes-or-no fashion as do computers.

The parallels between computers and the human mind have struck many scientists. W. Sluckin, a computer-oriented psychologist, said, "The elementary unit of the nervous system, the nerve cell, is a switching organ. The brain, an aggregate of interconnected, locally energized switches, is an organ for handling signals."

Whether machines actually "think" is a question of definition. Sluckin says, "Machines can and do think in *some* sense of the word, and cannot and do not think in other senses." Two other scientists, Oliver G. Selfridge and Ulric Neisser, believe machines can think, but with "an elusive, unnatural quality."

The human brain itself has perhaps a million times more components than the most complex computers. Human beings may also be cheered by the machines' fallibility. A careless computer, asked to translate "hydraulic ram" into Russian, is said to have come up with the equivalent of "wet sheep."

Norbert Wiener, the philosopher of computers, tells of a computer specialist who spent days setting up a machine to destroy itself, then stood by grinning as it dutifully proceeded to commit suicide.

Your COPE Dollar Helps Buy Good Government

AN old song is being revived by some of the popular young folk singers of today. It's called "A Dollar Ain't a Dollar Anymore."

It's true. A dollar isn't a dollar anymore—if you measure today's dollar by yesterday's yardstick. In fact, gauged by the base year of 1939, today's dollar is worth 46 cents.

In at least one case, though, a dollar still is worth a dollar—actually, a lot more than a dollar. That's the voluntary dollar you give to the AFL-CIO Committee on Political Education.

It can help buy good government, and no purchase can beat that.

Your voluntary COPE dollar is used for one purpose only: *To help elect Congressional candidates friendly to working people.*

Just what is a candidate "friendly to working people?"

That's not hard to answer. He believes in an America where a continually improving standard of living em-

braces all Americans. He believes in better schools for your children; a liberalized social security program so that your old age will be secure and free of the haunting fear of poverty.

He believes in a decent minimum wage, in improved benefits for the unemployed and better workmen's compensation laws; in housing, hospital and highway construction to serve the needs of an expanding population.

He believes in lightening the tax burden of those least able to pay and in plugging tax loopholes which are escape hatches for those most able to pay.

He believes that people count for more than profits, and men for more than machines.

YOUR BEST INVESTMENT

It is this kind of candidate who earns the support of your voluntary COPE dollar. And if your dollar helps get him elected, you'll agree it's the best investment you could make.



**PHIL M.
LANDRUM**

and



**ROBERT P.
GRIFFIN**

BY WILLARD SHELTON
Managing Editor, AFL-CIO News

are at it again!

THOSE merry little labor relations experts, Representatives Landrum of Georgia and Griffin of Michigan, took the House floor the other day for an assault on the way the National Labor Relations Board has been interpreting the 1959 amendments of the Taft-Hartley Act to which Landrum and Griffin lent their names.

The incident was predictable and inevitable. The labor board has been reversing or limiting novel decisions of the former board named by Mr. Eisenhower. It has restored long-established precedents the Eisenhower board had declined to let stand. It has interpreted the publicity clause of the Landrum-Griffin amendments in a manner that assumes, among other things, it was meant to conform to the First Amendment guaranteeing free speech.

So Landrum and Griffin charged that the NLRB has "all but gutted" their amendments, has "eroded and all but repealed" the "key provisions." Reiterating their belief that in 1959 an "overwhelming demand" arose for an end to boycotts and what they term "black-mail" picketing, they profess themselves "discouraged" to find the board "has carved out new loopholes."

They supported this press release language with a once-over-lightly House floor analysis of more than 20 decisions, in which they tossed the ball back and forth to express ridicule and avow alarm.

They do not forget, naturally, but they failed to acknowledge that the decisions come from a board to which Pres. Kennedy has named only two of five members, Chairman Frank W. McCulloch and Gerald A. Brown.

They express astonishment at a Brown speech discussing the "policymaking" function of the board. What Brown said he explained clearly—that the board is charged with promoting a "public policy," declared in the original Wagner Act and never repealed or modified, the "encouragement of collective bargaining" as the "democratic method" of settling labor problems.

Brown added that circumstances change—quite naturally—and that arbitrary rules do not necessarily provide permanent guidelines in meeting concrete situations, in which an employer and his workers must live with each other after specific dispute.

He noted that excessive initiative by the NLRB would be, and has been, "limited by the effective check of judicial review."

Indeed, major "policymaking" decisions of the board as created by Pres. Eisenhower were kicked out forthwith when they reached the Supreme Court. On that board's "Black Monday," April 17, 1961, the high court reversed no fewer than four key decisions hitting unions punitively.

Griffin complained the so-called "publicity proviso" worked out in the House-Senate conference committee on the 1959 amendments is being applied by the NLRB "to all sorts of situations." He said that the conferees had rejected then Sen. Kennedy's original language, that he himself "participated" in redrafting it, and that it was intended to be "precise and limited."

This is also what he told the House in 1959, but it is merely what he thought was the case or hoped was the case.

In explaining the conference bill to the Senate, Kennedy as head of the Senate conferees described the intent and meaning of the publicity proviso far differently, far more broadly. He explained it, in fact, in exactly the terms in which the NLRB is now applying it.

In the end, of course, the Supreme Court will apply the tests of legislative intent and how the language should be read in relation to the basic declaration of the law on "encouraging" collective bargaining, and how it must be read to be held valid under the free speech clause.

—AFL-CIO NEWS

THE KING'S MEN ARE UNION

It's all very well to have a job in one of the royal castles in Stockholm, Sweden, but about 100 employes of King Gustav VI have picked a trade union in order to have their conditions of employment settled.

Joining the Civil Servants' Union, an affiliate of the Swedish Confederation of Trade Union (LO) were drivers, charwomen, kitchen workers, silver cleaners, butlers and table-layers. Negotiations have opened on a contract with wage increases and hours of work.

The LO said "the royal employer has asked for assistance during the negotiations by experts of the Ministry for Civil Service Affairs."

NEW LINE BY HEALTH BILL FOES

The cry of "socialized medicine" raised against the Anderson-King Bill (now before Congress) for medical care to the aged apparently hasn't been effective. So opponents are peddling a new approach in the hope of defeating the bill: They claim it "doesn't go far enough."

Many newspapers are taking up this new line. One typical example is the *Columbus (Ohio) Dispatch*. In an editorial, it quotes Congressman Samuel Devine, Columbus Republican, as "warning" that the bill does not pay for physicians' services, or surgeon bills, or dental care, or certain other benefits.

That's true. The bill has been limited to some of the most urgent and costliest needs of the oldsters—that is, hospital and nursing home care, and visits by nurses to their homes. But the fact is that once these benefits have been approved by Congress, there's nothing to prevent improvements in them in subsequent years. After all, both Social Security and Railroad Retirement were started in a small way, but were steadily improved.

Congressmen or local editors who lament that benefits under the Anderson-King bill are "too low" should be challenged to come out and say whether they will support a better program at a higher cost. Of course, they won't do so, because their real aim in sniping at the level of benefits in the Anderson-King bill is to kill the program for medical aid to the aged, not to improve it.

—LABOR, the *Weekly Newspaper of the Standard Railroad Labor Organizations*

FARMER TOLD OF 'WORK' LAW

National Farmers Union President James G. Patton has called on Oklahoma's farmers to reject a so-called "right-to-work" constitutional amendment, warning that it would hurt their "best customer—the working man and woman."

Patton's blast at the "right-to-work" drive came as sponsors of a constitutional amendment to outlaw union shop agreements neared an April 16 deadline for filing the 137,000 signatures needed to place the referendum on the ballot in November.

Patton urged Oklahoma farmers "to stand firm with organized labor for the improvement of living standards for both groups and to help do so by defeating the so-called 'right-to-work' law."

"Oklahoma farmers must realize the target of the so-called 'right-to-work' campaign is destruction of the same kind of security for wage workers that farmers here fought to achieve for themselves in the form of marketing agreements.

"We appreciate help from organized labor to improve farm prices and provide more security for family farmers. We are glad therefore to join with Oklahoma working men and women in fighting this latest of many proposals for destroying the effectiveness of collective bargaining."

ONLY SLIGHTLY BIASED

Celebrating his 101st birthday in Colebrook, Conn., Frederick B. Comstock offered this formula for long life: Smoke if you want; eat what you like; and vote Democratic.

RADIO-TV-RECORDING

ELEVENTH ANNUAL PROGRESS MEETING

The Royal Embassy Hotel

3407 Peel Street

Montreal, P.Q., Canada

SEPTEMBER 7, 8, 9, 1962

Hotel Reservation and

Information Cards

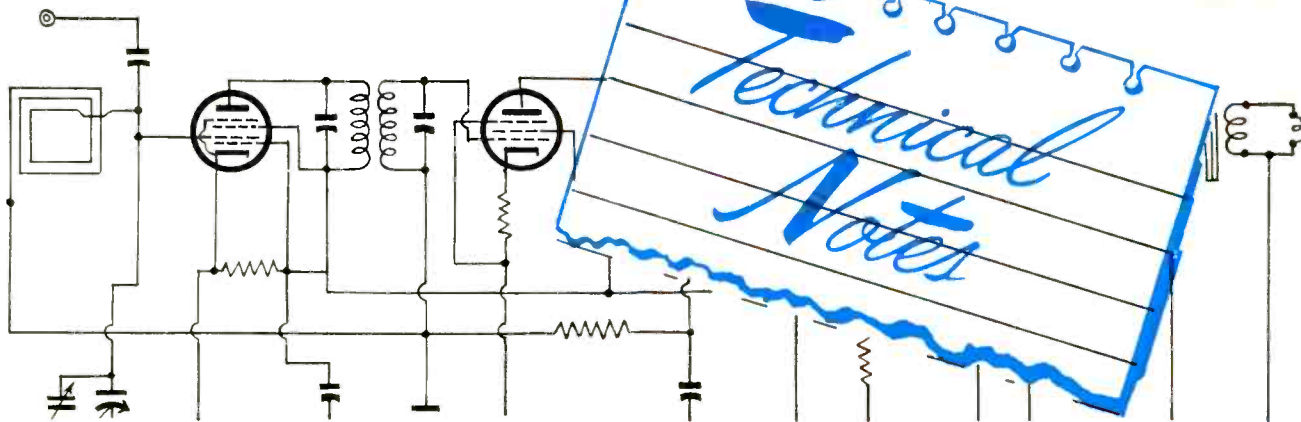
Currently Being Mailed

To All Interested

Local Unions



AN AERIAL VIEW OF THE PROGRESS MEETING CITY



EARTH'S ELECTRIC BLANKET

Rockets are probing the ionosphere, the sizzling electric blanket that wraps the earth.

The charged atmospheric region begins about 40 miles above the earth's surface and extends outward hundreds of miles, the National Geographic Society says. It has become a matter of pressing concern as men plan increasingly ambitious journeys into space.

Physicists had very little knowledge about the ionosphere above 200 miles until October, 1961, when the United States fired a four-stage Scout rocket from Wallops Island, Virginia. The rocket radioed information that is now being evaluated.

Space exploration has speeded research on the ionosphere, but communications experts have long sought answers to its quirks. At times, radio listening becomes frustrating. Signals abruptly fade. A local police call may startle listeners in cities thousands of miles away.

Yet one of the ionosphere's major features is that there is so little in it. There are so few molecules of air that their extremely high temperature—ranging into the thousands of degrees Fahrenheit—is not expected to trouble space explorers.

The ionosphere's impenetrability was dramatically illustrated, however, when Astronaut Scott Carpenter lost communication with *Aurora 7*'s tracking and control stations when he started his re-entry. The heat of the capsule and its speed also caused something of an ionospheric blanket around the capsule and contributed further to the loss of communications.

The existence of the ionosphere was not even suspected until the late 19th century when Scottish physicist Balfour Stewart began puzzling over the fact that the earth's magnetic field fluctuates from day to day.

Stewart theorized that the upper atmosphere contained a layer of air which conducts electricity. The motion of this air would generate electric currents that would, in turn, produce small magnetic fields—and the daily variations in the earth's magnetism.

No one paid much attention to the idea until Guglielmo Marconi performed a seeming miracle on December 12, 1901. Marconi sent radio signals from Corn-

wall, England, to Newfoundland, 2100 miles away. Since radio waves travel only in a straight line, startled scientists wondered how they could possibly go around the curvature of the earth.

Balfour Stewart's hypothesis seemed to be the explanation, and by 1924 radio studies provided direct evidence of the electric region.

It was found that the ionosphere owes its existence to the sun, whose rays separate electrons from the outer shells of air atoms. When an atom loses an electron, which is a negative particle, the rest of it becomes a positive particle, or ion. Both positive ions and free electrons can conduct an electric current.

Free electrons are chiefly responsible for the ionosphere's role in radio communication. A radio wave sets electrons swinging back and forth. The oscillating electrons in turn generate a radio wave of the same frequency as the wave that struck them.

Auroras, the beautiful polar lights that have intrigued men for centuries, occur in the ionosphere. This also is the region of airglow, the invisible light that reaches earth as energy. Both auroras and airglow are caused by excitation of atmospheric atoms and molecules.

Though invisible, airglow is stronger than all the light reaching the earth from the stars. Some day scientists hope to find ways to use that energy—possibly by "mining" the ionosphere just as the earth is now mined for coal.

NEW PUBLICATIONS LIST

A new, revised AFL-CIO List of Publications containing over 60 titles of books, pamphlets and leaflets is currently available from the federation.

Pertinent data on each of the publications, including a brief description, date of publication and price, is contained under each listing.

The April 1962 List of Publications is available without cost from the Pamphlet Division, AFL-CIO Dept. of Publications, 815 16th St. N.W., Washington, D. C.

DEEP-SEA RECOVERY

The U. S. Naval Ordnance Laboratory in White Oak, Maryland, has developed and successfully tested an acoustical method of recalling to the surface selected test mines as late as two years after they are planted on the ocean floor a mile under the sea. By means of three small explosive charges, fired in a preselected time sequence from a plane or a ship, any one of 15 moored mines and its mooring cable can be raised without affecting the other 14.

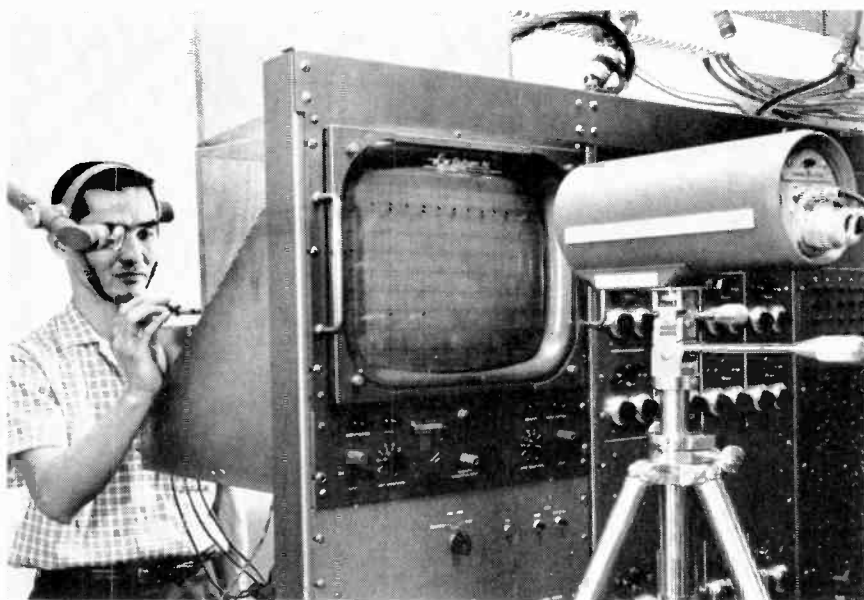
The new method was developed by NOL's Underwater Mechanical Engineering Department to recover for evaluation, newly developed mine components from deep waters or heavy current where divers cannot operate. It permits NOL scientists to examine the components for possible damage caused by the heavy currents and other sea conditions. As such, the method is expected to become a valuable part of the Laboratory's long range mine program.

The key to the new method is a unit called an Underwater Coded Command Release System (UCCRS) which is composed of a receiving hydrophone, several batteries with an expected life of two years, a time coder and an explosive driver. These units are fitted into the anchor of each of 15 test mine assemblies which are planted as a group in deep water. Each mine assembly has an inert mine case, a mile-long mooring cable rolled on a drum and an anchor.

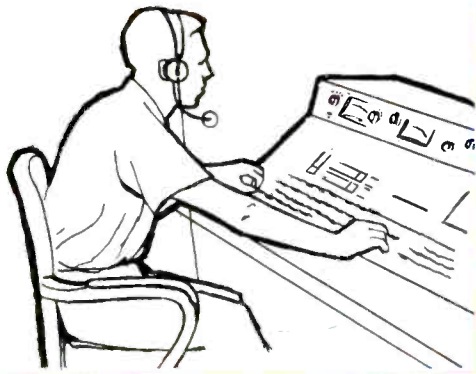
When it is desired to raise a specific mine in the group, explosive charges are detonated on the surface in the proper time sequence as far away as a mile from the dummy minefield. The resulting acoustical signals, received by the hydrophone in the UCCRS unit of the designated mine assembly, causes the corresponding time coder to generate an output pulse which fires the explosive driver. This unlocks a pawling device on the mine mooring cable drum and permits the mooring cable to pay out and the buoyant mine case to rise to the surface for recovery.

PRIVATE VIDEO EYE WITH MANY POSSIBLE USES

ELECTROCLAR TV DEVICE, used to speed work in industry is demonstrated by Hughes Aircraft Company engineer, Ralph Kiyon. Adjustments are being made on rear of digital analog panel, while viewing results furnished to Electroclar unit by closed-circuit TV camera trained on screen on front of panel. Camera may be located in any desired remote area to give Electroclar wearer information necessary to accomplish task.



SAFER FLYING conditions are possible for pilots of civilian aircraft using the new Hughes Aircraft Company Electroclar TV headset. Pilot can be furnished with a television picture of air traffic information and ground conditions without distracting him from his normal flying duties. Either televised radar data from ground sources or closed-circuit TV picture from camera mounted on airplane may be given to pilot using this device. Television with zoom lenses from airplane-mounted camera furnishes pilot with close-up view of vital ground surface areas.



STATION BREAKS

MERIT AWARD IN CHICAGO



A genuine pioneer in broadcasting, Chicago's Carl Ulrich (left), was honored recently with a Merit Award from Local Union 1220, International Brotherhood of Electrical Workers, which represents radio and TV technicians at most Chicago stations. Local President Marv Balousek (right) presented the award in recognition of Ulrich's 40 years in broadcasting with WAAF Chicago. Ulrich, WAAF's chief engineer today, was WAAF's one-man staff when the station first hit the airwaves in April, 1922.

LOCAL 1212 MOVES OFFICES

New York City Local 1212 has moved its business office from Broadway to 150 Fifth Avenue, New York 11. The transfer results in an annual saving of more than \$3,000, *The Local 1212 News* reports. The new local tion has private offices for reach member of the business manager's staff, an executive board room, and general secretarial facilities, although total floor space is less than that of the former location. The room number is 302, and the building is located at the southwest corner of 20th Street and Fifth Avenue.

PARABOLIC DISH NEEDED

One of our readers has requested our cooperation in locating a used parabolic dish for microphone use. Anyone having such a device for sale should address Box 100, Technician-Engineer, 1200 15th Street, N.W.,

Washington 5, D. C., furnishing details and "asking" price.

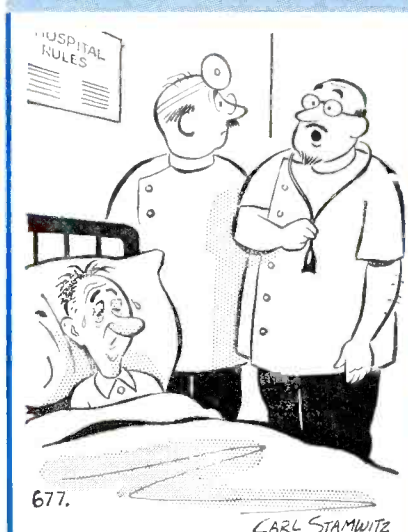
MORE "JUNK MAIL"

City garbage collectors in St. Louis went on strike recently in protest against handling garbage in sub-zero weather . . . A radio program featuring telephone calls from listeners heard one caller note that postmen work in cold weather . . . The next caller had a solution: Mail the garbage to the city incinerators.

THERE'S MORE TO IT?

As the old psychiatrist joke said, "I wonder what he meant by that?" *TV International* reports that the Paris Prefecture of Police has refused to agree to TV programs being given in public and in famous old music halls and dance halls, particularly in Montmartre, until he has been assured that the premises are "100% fire-protected."

LAST LAUGH



"Medicine won't help! Every time he thinks of returning to his non-union job, he suffers a relapse!"

ALEXANDER BROWDY
1962 S STEARNS DR
LOS ANGELES 34 CALIF
45 PM