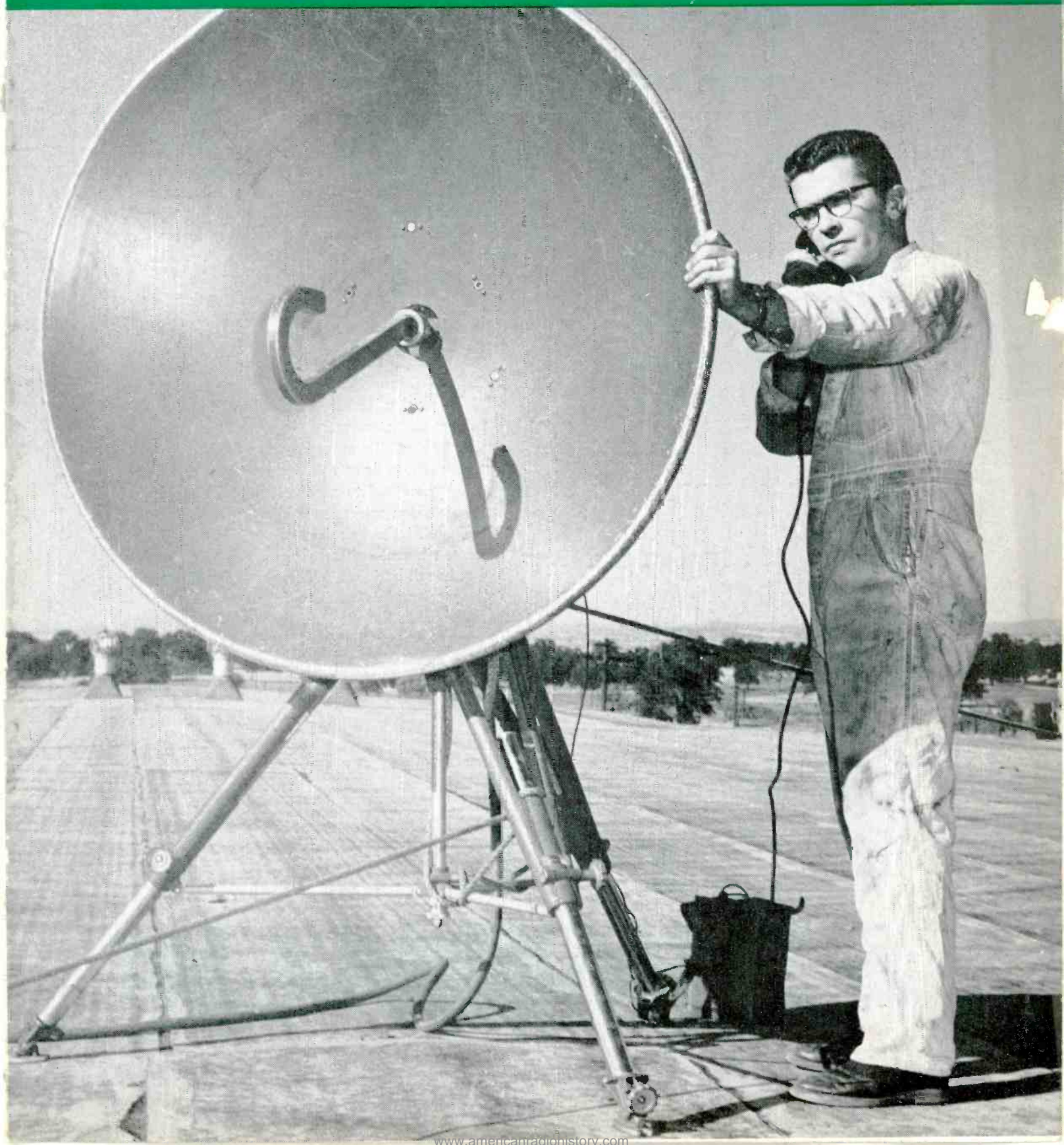


RADIO, TV and RECORDING



TECHNICIAN-ENGINEER

MARCH, 1957



RADIO, TV and RECORDING
TECHNICIAN-ENGINEER

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The INTERNATIONAL BROTHERHOOD of ELECTRICAL WORKERS

GORDON M. FREEMAN International President
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 JEREMIAH P. SULLIVAN International Treasurer

ALBERT O. HARDY

Editor, Technician-Engineer

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. . . the cover

Setting up and aligning the microwave transmitter for a remote telecast is a task for both rugged and skilled hands. On our March cover, Phil Linn, KOVR engineer, talks to fellow engineers from a mid-point relay site, as he trains the reflector on the transmitter pickup receiver approximately 60 miles away. Linn is checking out the parabola from on top the Roseville, Calif., Fair Grounds Auditorium, from which "The California Hayride" will originate. A full story on KOVR's skill with remote shows begins on page 3 of this issue of the TECHNICIAN-ENGINEER.

commentary

A major campaign, using all the gimmicks of propaganda and public relations, is under way to try to undermine ability of workers to get decent wage increases through the collective bargaining process.

Organized labor has a responsibility to see that the general public gets the facts with which to answer this type of fallacious propaganda.

Here are a few of the facts, as put together by the AFL-CIO Research Dept.—and they deserve serious consideration:

- Last year's 20-cent-an-hour wage increase cost U.S. Steel Corp. \$80 million. It was used as an alibi for a price increase of \$230 million.

- General Motors and Ford have been making a profit of about \$3 on every employe's hour of work. But when those firms raised wages by 21 cents an hour, they refused to absorb it out of high profits and insisted on raising prices instead.

- The oil industry raised prices on petroleum by 35 cents a barrel—although wages had not changed and although basic oil fields were operating at only half capacity. Furthermore, it is clear the Administration knew the oil industry was going to raise prices as soon as the Suez Canal was closed—and took no step to halt this price gouge.

—From the AFL-CIO News.

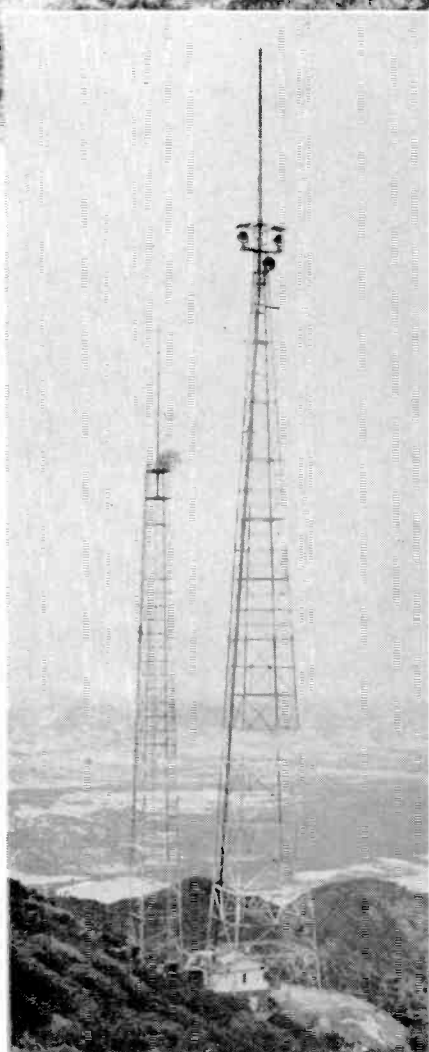
the index . . .

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 1956 figures: January, 1956—114.6; January, 1957—118.2.

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The KOVR transmitter, left, looks out from Mt. Diablo across terrain regularly spanned by microwave feeds. Remote signals must be "hopped" many miles.



Of Men, Mountains, And Microwaves

By R. E. PICKTHORN

IN the fall of '54 KOVR made its initial salute to western viewers on Channel 13, in Stockton, Calif. From the 4,000-foot crest of Mount Diablo she looked west out over the San Francisco Bay Area to the Pacific, east to the Sierras, land of the Forty-Niners, north to the towering Siskiyous, and south down the Santa Clara Valley. Twenty-seven counties. Over four million potential viewers. Like the pioneer who topped the passes and scanned the Golden Gateway of the West a century ago, this newcomer must prove the right to her inheritance. And thereon hangs a tale—of men and of mountains.

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3



Pictures from top of page, reading counterclockwise, include:

1. Master control at the studios.
2. A view inside the transmitter building.
3. The KOVR transmitter building.
4. The studios in Stockton.
5. The station's remote unit is a fast motor stage converted to a rolling television control room. From the rear of the unit, engineers pass up a microwave dish.
6. Camera checks for the "California Hayride" from the Fair Grounds Auditorium, Roseville.

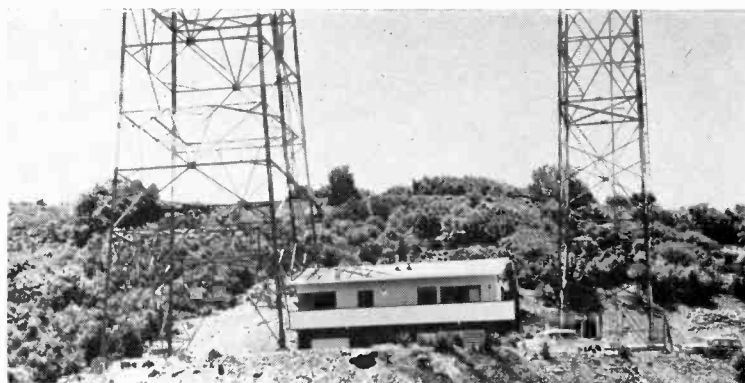


KOVR's claim to early fame is in large degree attributable to three factors, namely: a transmitter sweeping nearly half the State of California, a crew of five picked men in a sleek, fast motor stage packed with modern remote equipment, and a wonderful esprit de corps.

The first element involved wise engineering procedures and a most unusual transmitter site which was fortunately available on the highest peak of the range separating the San Joaquin Valley from the coastal region. The third factor is characteristic of the men of IBEW Local 202. It is the second which will especially interest you.

Between April 9 and September 9 of last year the KOVR remote unit handled 158 separate originations, rolling up some 4,000 miles in reaching the widely separated locations. Little wonder someone nicknamed the crew "The Rover Boys." The schedule included baseball, boxing, wrestling, and traveling Western musical shows on regular weekly schedules, each event requiring complete set-up and breakdown. And setting up a remote telecast is a real chore, complicated by the problems of microwave transmission and local power services.

Take a typical week, for example. Begin anywhere, for there were not many days without



remotes. Sunday, a three-camera lineup for a double-header baseball game at Seals Stadium in San Francisco; Monday, more baseball, then a quick knockdown and transfer to the Wintergarden Arena for the wrestling matches; Wednesday, more games; Thursday, more baseball, then out and away for the boxing bouts in the evening; Friday, ball game again; Saturday, the big afternoon at the ball park. Now the heat is really on, for as soon as the cameras could be capped they were pulled down and packed with all their associated equipment, together with the dismantled microwave gear and the mass of mikes, monitors and other incidentals so essential to an operation of this kind. Quickly every item went to its place in the mobile unit and was checked off.

Then, all aboard! and with police escort and sirens screaming, the dash through the city, across Golden Gate Bridge and up-country in a race against time as measured in minutes. At 9 o'clock this same evening multitudes of fans would be laying aside their evening papers and turning to their television screens for the regular, hour-long "California Hayride" starring Cottonseed Clark and his troupe of entertainers. It is safe to say that very few of the watchers up and down the country had any idea of what it meant to bring them that opening shot at the stroke of 9.

In one instance, to get live pickup of the Hayride it was necessary for the mobile crew to shoot their signal 45 miles from Marysville to the top of an intervening mountain, relaying it from there 65 miles to the transmitter on Diablo.

As usual, the entire operation was performed with KOVR equipment, by staff engineers. It is worthy of note that this was done, not with permanent installations and extensive facilities, but with 4-foot dishes and 1 watt clystrons in Lamba Pacific portables operating on 7,000 megs.

Again, this was not an occasional stunt. This

signal through successive strata of radically different atmospheric temperatures. When, as in the "double-hop," the signal must be caught midway and reshot to the main transmitter location, problems are multiplied.

Sometimes the midhop engineer is fortunate enough to find himself situated near a friendly Forestry Service look-out station or in some gracious family's back yard. Under these circumstances he may come in with annoying stories of tantalizing refreshments and nothing to do but sit and watch. But often it is different, as when the set-up is on some bleak mountain at the end of a firetrail, or on a building-top blistering in summer and storm-swept in winter.

Amusing incidents are bound to crop up. The fellows like to tell of one job where the vantage point for the midhop gear proved to be almost too close to a farmer's corral fence. One of his mules became interested in television engineering and narrowly missed becoming a sensation on the spot.

One of the most interesting pickups of this type was successfully organized on the occasion of the



is the way the program innovations were "brought out of the woods." Over such distances this is quite an undertaking for regular telecasting service.

On the front cover of this issue of THE TECHNICIAN-ENGINEER one of the engineers is shown adjusting the dish, a process akin to sighting in a rifle on a target a few feet wide and 65 miles away in the haze or darkness. If not securely anchored, the radiator may be deflected from its target by a light wind, bypassing the distant receiver at the transmitter, and so causing a fade. More difficult to counteract, an even greater cause of fades in this region becomes the plague of the long hops in a phenomenon known as temperature inversion resulting from passing the

annual Rio Vista Bass Derby on the Sacramento River, in the heart of the great Delta Waterways. A favorite locality with anglers for many miles around, once each year the town plays host in a fishing contest, the fishermen competing for the honor of taking the largest striped bass. Since festivities include a water show, it was decided to cover this in part from a floating position out on the river. A complete layout, camera, control, microwave transmission facilities, and audio and cueing system, was installed on a small yacht. A portable generator furnished power. Keeping the transmitter accurately aligned with the onshore receiver feeding the relay transmitter proved a touchy matter in the chop stirred up by racing power boats and water skiers, however, as usual,

the Rover Boys came through magnificently. The bus served as a master control and relay point.

Perhaps some would be interested in the arrangement of equipment within the remote bus proper. Back to back with the driver sits the director of the show. He faces the video switching controls and, beyond these, the monitors and control units where the technical director is stationed. Across the aisle, at the program director's elbow, is the audio engineer with his equipment for handling the varied sound requirements, including mixing and patching channels sufficient for almost any assignment. The balance of available space is taken up with power-supply racks, repair facilities, and equipment storage cabinets. The luggage compartment at the rear is stacked with lighting gear, tripods, cables, etc. The railed top of the bus serves as a splendid camera platform and, in transit, a riding place for ladders and other articles too bulky for inside storage. The electronic equipment is shock-mounted and lashed down for greater safety on the mile-a-minute sorties cross-country.

To date, the longest single-hop remote telecast has been about 70 miles, a feed from Turlock to the Mountain. The shortest was 35 feet. For a United Crusade subscription drive the mobile unit had been parked on the street in front of the Stockton studios. A camera mounted topside gave donors the pleasure of seeing themselves on a live television pickup. When difficulty arose in getting a coaxial feed to lock in with studio, the problem was quickly solved by setting up the regular microwave gear and taking the outside feed as a standard remote.

Incidentally, the entire program schedule at KOVR depends on long-hopping. Two microwave studio-transmitter links feed from Stockton to Mt. Diablo 35 air-miles away. Audio is normally shipped via a 910 meg. rig with audiplexer standby.

Many interesting experiences have come our way in getting this new station on the air and keeping it there to serve this great western empire represented by a forest of antennae stretching away even across the high Sierras into Nevada. A rightfully large measure of credit is due the men at the studios, and especially those at the main transmitter where, as an addition to the customary duties, remote and studio feeds must be integrated on cue, a demanding task when many studio cut-ins break up the remote program. But to the Rover Boys in the mobile rig must go the credit for what we believe to be one of the biggest jobs in this strange business of sending pictures through the air.

Can I Believe My Ears?

By JANE GOODSSELL

Press Associates Columnist

THESE old ears of mine have never heard any of the following statements. But I can dream, can't I?

"The election results certainly surprised me. I had no idea that it would turn out the way it did, and I lost every bet I made."

"Yes, Mommy, I'll go upstairs right this minute and clean up my room."

"We went to that restaurant you recommended, and it was just as good as you said. Good food, fast service and reasonable prices."

"Of course we can afford it, darling, and I agree with you that you really need it. Why don't you go downtown first thing tomorrow morning and buy yourself a new dress?"

"Oh, little Mary's just like any average three-year old. She doesn't do anything that other kids her age don't do."

"You have a ten o'clock appointment with the doctor? Well, come right in! He's all ready for you."

"I can understand perfectly why kids are crazy about Elvis Presley. I like him, too."

"Yes, it is a good picture of me, isn't it? I think it looks exactly like me."

"No, I don't feel cross as a bear before I have my first cup of coffee in the morning. I wake up feeling okay."

"I quite agree with you that your allowance isn't nearly big enough. Why, when I was your age, I had twice as much spending money as you do."

"No, I wasn't offended by the sexy passages. Matter of fact, they were my favorite part of the book."

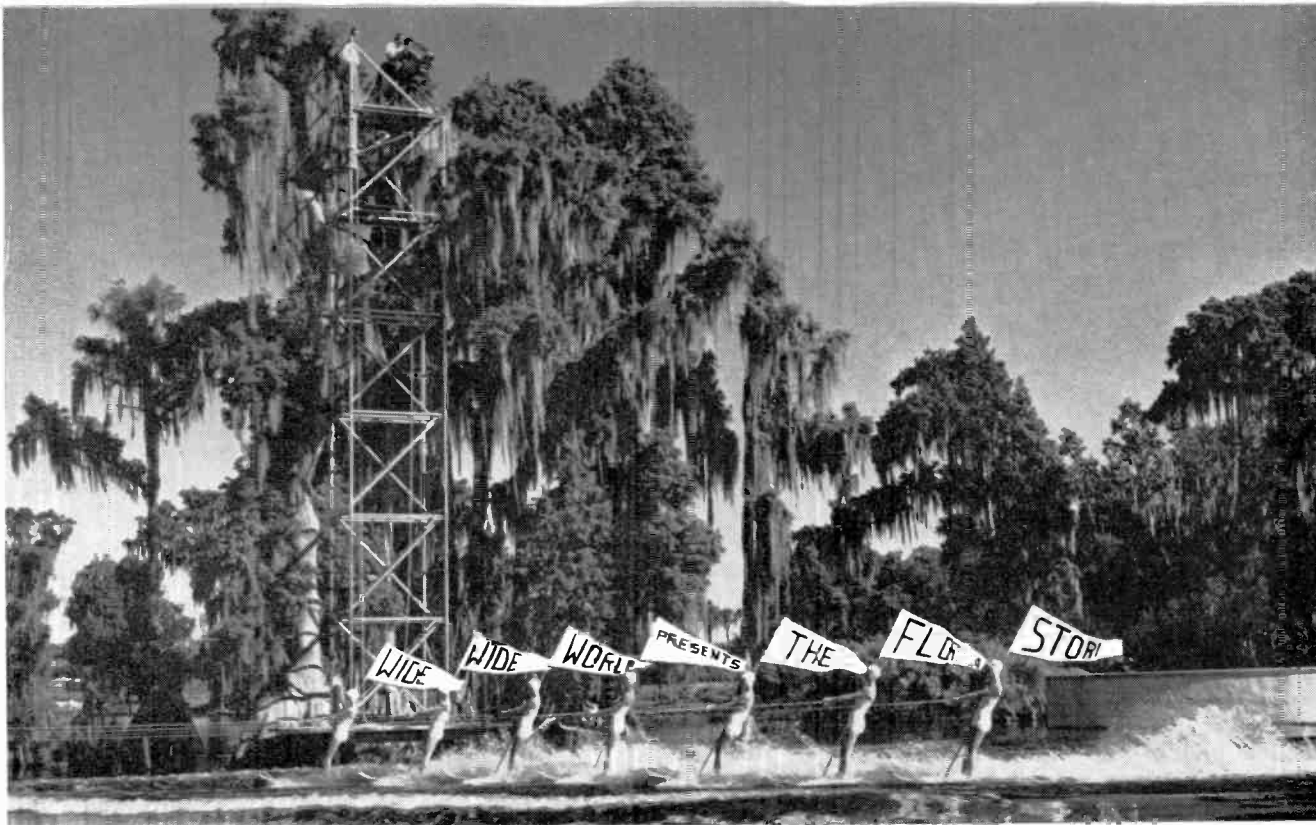
"I understand perfectly why you can't be chairman of the hospitality committee. It would take a lot of time, and there are lots of other people who aren't as busy as you are."

"Yes, we had a very nice trip. No, we didn't take any pictures or keep a diary or anything like that."

"No, I'm not planning to give up smoking. I couldn't if I wanted to."

"Yes, she is pretty and has such a lovely figure. I've invited her to dinner next week because I know my husband will enjoy meeting her."

Technician-Engineer



From high among the moss and cypress branches a WFLA-TV cameraman covers a bevy of water skiers as they flash by in the opening scene of the hour-and-a-half NBC extravaganza.



Water Wings for 'Wide Wide World'

Tampa technicians get sea duty, operating at 30 knots aboard a speeding motorboat

by JOE RYAN

*Vice Chairman, Unit 7,
IBEW Local 108, Tampa, Fla.*



A sea gull's eye view of the camera boat loaded with gear. The booms serve as hitching posts for skiers.

FAMED Cypress Gardens, noted for its exotic scenery and champion water skiers, has once again played host to WFLA-TV engineers of Local Union 108 of Tampa, Fla. The occasion, which brought scores of technicians and truckloads of equipment to the beautiful showplace of Florida, was "The Florida Story," a "Wide Wide World" presentation for Armistice Day, November 11.

The Cypress Gardens show was a portion of a completely live one-and-one-half-hour television program narrated by Dave Garroway, dealing exclusively with the State of Florida.

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Local Union 108's contribution to the spectacular was indeed a unique one. IBEW technicians employed by WFLA-TV were called upon to man a live television camera in a speedboat traveling 35 m.p.h. The problems involved in such a technical setup as this were many and varied. The job was made easier due to the fact WFLA had been called upon once before to set up a similar operation at Cypress Gardens. Also, the Gardens seemed to have an abundance of beautiful women and bathing beauties, all of which served to lighten the workload on some of our brothers from Local 108.

The Cypress Gardens portion of the show was approximately nine minutes long, yet took months of planning, thousands of dollars and many hundreds of people to accomplish. Realizing that this was only one of the many segments of the

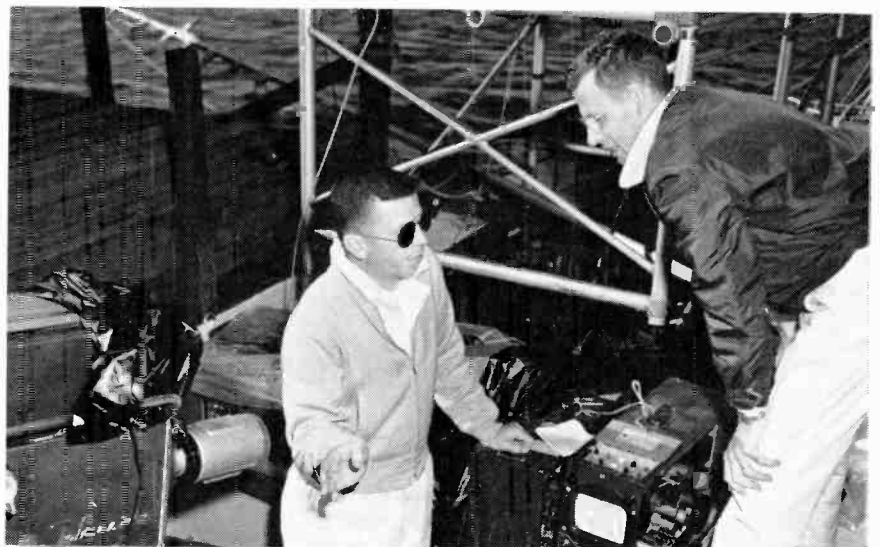
90-minute show, the reader can get some idea of the extent of the overall operation.

The technical set-up of the Gardens involved placement of five cameras, one of which was on the camera boat operating far out on picturesque Lake Eloise. The other four cameras were spotted at key positions throughout Cypress Gardens. One camera involved 1,500 feet of camera cable run alternately on the bottom of the lake and through the tops of cypress trees to a camera located on top of a 50-foot scaffold overlooking a swimming pool designed in the shape of the State of Florida. Another camera was located on a pick-up truck so as to be able to serve two locations. One camera was located out in the lake on a platform. Another was placed on a pier extending out over the lake. The layout and planning was coordinated by National Broadcasting Company personnel and



ABOVE: The camera boat in action. The signal reaches shore via the microwave aimed from atop the platform amidship. The dish was aimed at blinkers ashore.

RIGHT: Technicians Ryan and Kelly discuss the engineering problems involved in keeping a picture afloat.

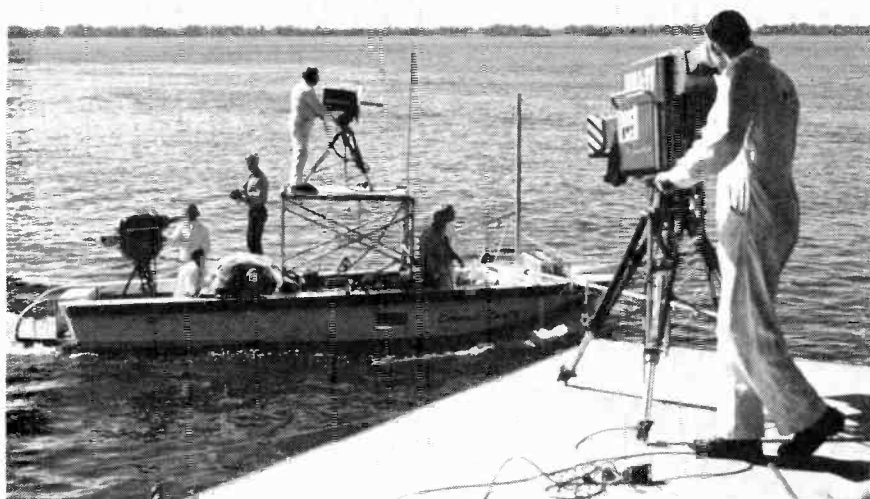


Charley Hartman, technical operations supervisor of WFLA-TV.

Probably the most unusual and elaborate operation point of the entire pick-up was the camera boat working as a complete television station in itself. With three technicians, a production coordinator, boat driver and generator man, plus the necessary equipment, space was absolutely at a premium. The equipment included a television camera and camera control unit, a sync generator to manufacture the necessary pulses for television broadcasting, a power supply for the camera, motorola transmitter for communications to our mobile unit located on shore, P. A. system for communications to the water skiers off the rear of the boat, a microwave transmitter and transmitter control for transmitting the television signal back to the shore receiving point, and a generator to supply the power

necessary to run the equipment.

In order to receive a signal from the camera boat, the microwave transmitter on the boat had to be kept in constant alignment with the microwave receiver at the shore point. This was accomplished manually by one of our technicians and involved some fancy footwork whenever the boat changed direction or speed. A flasher system was installed on the parabolic dish on the receiver to assist in spotting the dish from across the lake. Credit is due to all who participated in the operation for the show went off as planned and was claimed to be a complete success. The Radio and TV Group of Local 108 chalked up another mark on their list of achievements, which have included operating television equipment in airplanes, under water and on boats. One time they even faced swooping eagles and hawks.



TOP LEFT: A behind-the-scenes view of an unusual method of introducing a live television program to the nation.

ABOVE: Kelly checking equipment to assure close communications with the shore point during the actual telecast.

LEFT: Don Gesner mans a camera from one of operating points ashore.

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READING TIME

Electronics Test Equipment Descriptive Data Sheets, Vols. I to V. Carl L. Frederick and Associates, 4630 Montgomery Avenue, Bethesda 14, Md. 3500 pp., \$170.00.

At long last, a comprehensive survey of electronic test equipment is available from a single source. A five volume set of "Electronics Test Equipment Data Sheets" is now published by Carl L. Frederick and Associates, which covers some 1300 separate test equipments. Periodic additions and revisions are planned to be issued by the publisher, which will be available on a subscription basis.

Volumes I thru V run the gamut—from voltage and current measuring equipment through nuclear energy test and measuring devices, standards and calibration equipment and including optical testing, measuring and alignment equipment. Cross-references to similar and related equipment are included in the description of each device, along with military type numbers and similar nomenclature. In short, if no reference to the equipment desired can be found in these five volumes, the chances are that no such manufactured item is available.

Each of the five volumes is bound in a 3-post, hard-cover binder. Additions and changes will thus be facilitated, as well as easy handling of the more than 3500 pages.

Low Power Telecasting, A Handbook for Station Owners and Operators By Harold E. Ennes, Published by Howard W. Sams & Co., Inc., 2201 East 46th Street, Indianapolis, Ind., 112 pages. \$2.95.

Mr. Ennes, author of this volume also wrote an authoritative book previously published by the Sams Company, "Principles and Practices of Telecasting Operations." His latest book is a companion in the telecasting series.

Although the book presents the basic considerations of planning in the field of low-power telecasting, its contents are pertinent to all engineers whether concerned with low, medium, or high-power telecasting. Included is data for using an existing AM tower, the TV radiator support, and information on the new "economy" TV antennas developed for use in this field. The design of low-power transmitters, transmission lines, and duplexers are also thoroughly discussed. The prediction

of coverage is presented by graphs for the various bands, ERP's, and antenna heights. The Vidicon camera is fully described and a comparison, on an operating basis, between image-orthicon and vidicon practices is also presented along with advantages and disadvantages of each. Correlation of lens angles and depth of fields; the conversion of image-orthicon data to vidicon data; multiplexing arrangements; operating practices; and lighting requirements are also described in full detail.

A chapter on system planning and installation includes complete diagrams of "economy" stations, descriptions of existing installations at Air Force TV installations, planning procedures, space, and conduit and power requirements.

An Introduction to Junction Transistor Theory by R. D. Middlebrook, published by John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 296 pages. \$8.50.

This book effects a bridge between the physical processes in semiconductors and the circuit properties of a junction transistor, the areas of physicist and engineer respectively.

The author's starting point is a qualitative discussion of crystal structure and the motion of electrons in crystals. The quantitative treatment is begun with the assumption of two results of statistical and quantum mechanics. Upon this foundation a continuous development of the basic theory of transistor action is presented, leading to a circuit representation of the small-signal performance of the transistor.

Dr. Middlebrook has organized his material into three major sections. Part I covers qualitative development of junction transistor theory; qualitative and quantitative semiconductor physics; current flow in semiconductors; and boundary values for a forward-biased p-n junction. In Part II, the author deals with the p-n junction under applied d-c potential; the p-n-p transistor; internal capacitance, high-frequency and feedback effects; the generalized solution of the p-n-p transistor; approximations for the diffusion admittances; and the complete small-signal a-c equivalent circuit.

The final part goes into a modified a-c equivalent circuit for practical applications; and some modifications to the basic theory of the junction transistor. The entire last section, rather unorthodox in approach, rests primarily on the assumption that compromise is inevitable between theoretical accuracy and ease of practical application. The new practical equivalent circuit presented here represents the small-signal behavior of a junction transistor over its useful frequency range as an amplifier.

PT and T Cancels Pact With Toll Maintenance Men

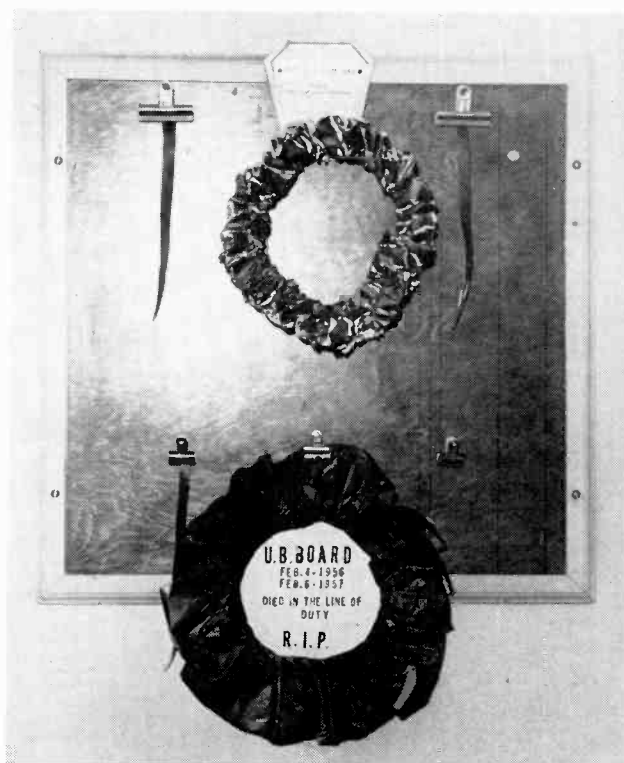
ONE year ago, the toll maintenance men of Pacific Telephone and Telegraph were very happy to report that they had been successful in negotiating an agreement with Pacific Telephone and Telegraph Company, the Bell affiliate on the Pacific Coast, after three years of litigation. This group has dealt with the PT and T for many years as a craft organization, but in 1953 the company cancelled its contract, signed an agreement with the CWA merging the toll men into the Plant Department agreement. But they maintained their organization, and three years to the day later they signed an agreement in Seattle, after winning their point and defeating the company's attempt to destroy their union.

After one year of dealing with the PT and T, in which time the company has been unable to point to a single violation of the agreement or any abuse of its provisions by the union, the company summarily cancelled the agreement on the very minute it was to expire, setting forth in unilateral action the conditions the toll men will work under. The company's attempt to weaken the organization by cancelling payroll deduction will have the opposite effect. As was stated in the article a year ago, this group maintained their organization over a three-year period without any payroll deduction, contract, or bargaining rights. The members interpret this childish action on the part of the company as very comical.

The picture at right has been widely circulated and all the other offices wished they had thought of doing the same thing. Following is the text of the letter from the company:

"This is to advise that for the time being the company will continue in effect the wages and working practices provided for in the contract between the Pacific Telephone and Telegraph Company and the Order of Repeatermen and Toll Testboardmen, Local Union 1011, IBEW, AFL-CIO dated March 6, 1956, covering Transmission Men and PBX Repairmen (under Toll supervision in the Washington-Idaho Area, except for the following which will be discontinued effective 12:01 a. m., February 7, 1957.

1. The bulletin board privilege as was provided



After the Pacific Telephone and Telegraph cancelled the bulletin board privileges of Local 1011, this memorial appeared in place of the regular local union literature.

in Article 20 of said contract. (The company is agreeable to leaving the bulletin boards in place as long as they are not used by the union.)

2. Payroll deduction of union dues as was provided in Article 21 of said contract.

3. Arbitration, as was provided in Article 24 of said contract."

Local Union 1011 covers the entire Pacific Tel. and Tel. and Bell Telephone of Nevada. It is broken down into three units, one covering California and Nevada, the second Oregon, and the third Washington and the panhandle of Idaho. In the initial bargaining sessions, which lasted three years, there were 33 separate meetings with management in three different states. Three units were ordered, where the union had asked to consolidate the units.



The street bus named Desire—which has replaced the street car of that name—moves down colorful Bourbon Street in New Orleans. The studios of WDSU-TV, an IBEW-contract station, are on Royal Street, a block away.

NEW ORLEANS

Progress Meeting City

ON June 14, 15, and 16 the 1957 Progress Meeting of the IBEW Radio, Television and Recording Division will be held in New Orleans. The host local will be No. 1139, a veteran of more than 17 years engineer representation in the Deep South.

This will be the sixth annual gathering of representatives of broadcasting and recording locals. Early registrations indicate that it will be highly successful.

Meetings will be held in the Roosevelt Hotel, one of the city's largest hotels, located just off busy Canal Street. Arrangements are now being made by Robert L. Grevemberg, vice president, and a crew of co-workers.

Room rates in the Roosevelt have been announced, as follows: Single—\$8 and \$9; double—\$11 and \$12; and twin bedrooms—\$15 and \$18.

Local 1139, our host group, promises a full schedule of activities. This local was chartered on November 27, 1939. It has agreements with the following Crescent City stations: WDSU, WDSU-FM, WDSU-TV, WJMR, WRCM (FM),

WJMR (TV), WMRY, WNOE, WTPS, and WWL.

For an old city steeped in Creole traditions, New Orleans is a thriving, forwarding-looking metropolis. Orleans Parish—which includes the major part of the city—has many industries along the Mississippi River and out toward the shores of Lake Pontchartrain. The city's population totals 629,500. As of January, 1956, the metropolitan population has been tabulated at 801,000. Seventy-two percent of the households have television—the highest percentage in the state.

New Orleans is the third largest city in the United States in area, covering 363.5 square miles. As a leading industrial and financial center, wholesale and retail market and convention and tourist objective, New Orleans is the hub of business in the South.

The Chamber of Commerce reports that records of the U.S. Department of Labor show that New Orleans workers, 97 percent of whom are native-born, have a higher percentage of days on the job and a smaller percentage of days out on strike than any other large city in the country. This is

used as a blurb to attract industry, of course, but the fact remains that labor does attain many of its objectives in the Crescent City. Louisiana was a "right-to-work" state until last year, when organized labor, led strongly by New Orleans unions, was able, to elect friends to the state legislature and get the law repealed.

But enough about the industry and the statistics. . . . We must tell delegates to the Progress Meeting of the climate and the sidelights:

June is often one of the best months to be in New Orleans. The hot summer has not yet arrived. The normal average temperature from April through September is 79.1, with June a relatively cool month. We are told that the temperature in New Orleans has risen above 100 degrees only 18 times in the last 82 years.

New Orleans is known the world over for the excellence of its food, and its restaurants enjoy international fame. Cooking in many parts of this city is a subtle art.

The city of Dixieland music has its night life, too. In the Vieux Carre, or French Quarter, there are many spots to visit and much to see and enjoy.

Labor Posts Filled In Nation's Capital

Two new men have been appointed to the work of the National Labor Relations Board, and there's a new top level appointment in the U. S. Department of Labor.

James T. O'Connell of Upper Montclair, N. J., was sworn in as new Undersecretary of Labor on February 2. The oath was administered by the new Associate Justice of the Supreme Court, William J. Brennan, also of New Jersey. The new undersecretary has been vice president of the Publix Shirt Corporation since 1946.

Meanwhile, Jerome D. Fenton of Westport, Conn., has been named new general counsel of the NLRB, filling a vacancy left by Theophile C. Kammholz. Fenton is former director of the Industrial Security Program of the Defense Department. From 1943 to 1954 Mr. Fenton was involved in labor relations work and other activities with Pan American World Airways.

Fenton's responsibilities with Pan American included contract negotiations and administration, grievances and arbitrations. He helped to establish at each PAA base a department of industrial relations. Approximately 12,000 employees of the airline were represented by trade unions.

Another new man joined the NLRB last month when Joseph A. Jenkins, 38-year-old attorney, was nominated to fill a vacancy on the Board itself. The \$20,000-a-year post has been open since Ivar Peterson's term expired last August. Jenkins has served as a trial attorney in an NLRB regional office from 1948 to 1951 and as head of a regional enforcement branch of the Wage Stabilization Board. He is a member of a private law firm in Fort Worth, Tex.

Strike Benefits Are Taxable Is Ruling

Strike benefits paid by a union are subject to the federal income tax just as wages are, the Internal Revenue Service has ruled.

The Internal Revenue Service was asked whether strike benefits constituted income or whether they amounted to tax-free gifts. IRS concludes that they are income and taxable. Strike payments are made to further strikes aimed at securing economic benefits for union members, says IRS. Hence, benefit payments cannot be considered "spontaneous" or "gratuitous." Strike benefits must be included in a worker's gross income when he files his tax return.

March, 1957

Local 1215 Awards Pins To 10, 15-Year Members



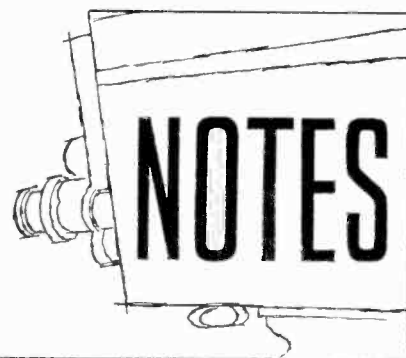
10-YEAR PINS: Left to right, Frank Detwiler, Bruce Vaughan, Robert Black, Charles Ray, Earl Harbaugh, Charles Schrider, Henry Works, Anthony Vogel, and International Secretary Joseph Keenan, who made the presentations. Ten-year members not present for picture included Earnest Belote, J. B. McPherson, Robert Reynolds (He was there, but didn't get into the picture.), Norton Richardson, Leroy Van Winkle, and Nelson B. Wilson.



15-YEAR PINS: Left to right, front row, are Roy Bechtol, Kenneth Cox, John Fels, Leonard Euzent, Lindsay Coffman, C. W. Stromwall, and International Secretary Keenan. Back row, A. O. Hardy (20-year pin), Walter Brester, Lewis Rice, and Ralph Shultz. Not present: Marcellus Beale, Ralph Cannon, Herman Groom, William Kriz, Edwin Laker, Lynwood McDonald, Robert Pilcher, Franklin Seville, Howard Stephan and Oscar Brubaker.

Local 1215, Washington, D. C., periodically awards length-of-service pins to its veteran members. On March 6 at a regular monthly meeting, 10-year pins were presented to eight members, and an additional six members not present became eligible to wear the pins. Meanwhile, 15-year pins were presented to nine members present, and 10 additional members not present became eligible.

International Secretary Joseph Keenan presented the service pins, Local President Cleatus Barnett presided.



Tone Squelch System

General Electric Company has announced a new tone squelch system designed to relieve two-way radio users of the necessity of listening to transmissions of other operators sharing the same channel.

The new product embodies a double-barrelled approach which combines the advantages of both tone squelch and conventional noise squelch. It provides one-way or two-way protection against unwanted calls, noise and disruptive interference.

Robert L. Casselberry, manager of product planning for the General Electric Communication Products Department, said Channel Guard represents a significant industry advancement in enabling two or more users in the same geographical area to share a channel without having to listen to messages other than their own.

The system super-imposes continuous tone on normal squelch to assure a greater degree of privacy in communications than has been previously possible in the mobile radio field, Casselberry said.

Channel Guard makes it possible for mobile radio users to turn a "deaf" ear to on-channel interference by locking out all signals except those from their own transmitters, which are tone-coded for positive recognition by receivers equipped with the new device.

One of several new features General Electric engineers have included in Channel Guard is "automatic monitoring" before transmission. This permits the operator to determine whether anyone is using the channel the instant he picks up his microphone. Because he is able to hear any transmission being made on his frequency, he knows immediately whether the channel is clear and is able to send his message without having the communication interrupted.

The automatic monitoring function in Channel Guard is accomplished without additional manual operations. As a result, more effective use of the radio equipment is attained and more cooperative

sharing of the channel with other occupants of the same frequency is realized.

Using Channel Guard, the radio operator is able to comply easily with FCC recommendations regarding monitoring for transmission of messages on a shared frequency.

Another distinguishing advantage of Channel Guard is that it supplements, but does not eliminate, the standard squelch circuit in a receiver. General Electric engineers explain that "ordinary" tone-code systems differ from Channel Guard by lacking the standard receiver squelch. When standard squelch is not present, a loud, objectionable burst of noise occurs if the channel is clear and the tone squelch is disabled.

With the new General Electric system, the operator may choose between Channel Guard's protection or standard squelch at will. This inter-system compatibility permits Channel-Guarded mobile units to be operated in a non-Channel-Guarded system when desired. When an operator wants to hear everything on his channel, he may disable Channel Guard by lifting the microphone from its hanger. Standard squelch is still present to silence the loudspeaker when the channel is not in use.

Channel Guard may be added to General Electric Progress Line transmitters and receivers at the user's option. It is available in kit form for easy installation in Progress Line equipment now in service in the field. A primary benefit to existing users is that Channel Guard does not obsolete equipment currently serving in the industry. It is unnecessary for users to trade in their current set to procure Channel Guard's protection.

Raw Stock Tape Ready

Availability of Magna-Striped raw stock magnetic recording tape on a commercial basis was announced recently by Reeves Soundcraft Corp., New York. Reeves noted that the "striped mag-

netic" process has been accepted for tv spot news programming, specifically CBS-TV's use on its *Douglas Edwards and the News*.

The process is said to produce a live sound quality not possible with conventional photographic sound tracks. According to F. B. Rogers Jr., executive vice president of Reeves Soundcraft, commercial use of the tape opens a "new era" for both network and local tv spot news coverage and ends distorted sound on tv filmed news pickups. Existing film equipment, he said, can be easily and inexpensively converted to handle the magnetic process.

As explained by Reeves Soundcraft:

"The raw stock is produced by applying magnetic stripes to undeveloped film in total darkness. The magnetic stripes must not affect the photographic sensitivity of the film or be affected in any way by the developing process. The raw stock is then used in a 16mm motion picture camera which has been equipped with a magnetic sound recording system.

"During filming, the sound is recorded on the magnetic stripes in much the same manner as a tape recorder. Since the film developing process does not affect the stripes or the quality of sound recording on them, the processors can develop the film for the best possible picture.

"It was in the developing process that optical sound tracks became distorted. Since the film had to be developed for picture clarity rather than sound quality, the optical track never received the proper photographic development; hence the poor sound quality."

Color TV Tubes

A miniature triode pentode and a beam power pentode, designed for color television, and a miniature pentode for use in hybrid auto receivers are among five receiving tubes made available to the renewal market by Sylvania Electric Products Inc., it has been announced by H. H. Rainier, Distributor Sales Manager of Electronic Products.

Type 6AZ8 is a miniature triode pentode for use in both color and monochrome television receivers. Type 6CB5A is a beam power pentode designed especially for use as a horizontal deflection amplifier tube in color television receivers.

Type 12BL6 is a miniature sharp cut-off pentode for use as an RF or IF amplifier in hybrid auto receivers where plate and screen voltages are supplied directly from the battery.

In addition to the three pentodes, the following tubes have also been made available to the renewal market:

Type 6T8A, a controlled warm-up time version of the 450 ma. 6T8.

Type 12BW4, a miniature cathode type full wave rectifier featuring relatively high output current capabilities.

Transistorized Amplifier

Commercial availability of a fully transistorized portable amplifier by far the lightest equipment of its type so far developed—for use in remote radio and television broadcast service was announced in February by Radio Corporation of America.

E. C. Tracy, Manager, RCA Broadcast and Television Equipment Department, said the lightweight portable amplifier (BN-6A), a four-channel type, is designed to provide the amplification and control facilities necessary for transmission of remotely originated signals to a broadcast studio via telephone lines. It will also have application in closed-circuit TV service and as a remote mixer for industrial and school sound systems. It weighs only 15 pounds.

"Completely transistorized and featuring printed circuitry," said Mr. Tracy, "the RCA remote amplifier is capable of a greater output level with less distortion than any comparable amplifier available. Self-contained for battery or AC power operation, the BN-6A amplifier measures only 4½ inches high, 17¾ inches wide, and 8 inches deep.

"Engineering features include: four separate microphone input channels which can be operated either single ended or balanced; incorporation of complete cueing and monitoring facilities; and use of plug-in transformers for balanced operation."

For operating convenience, all controls are located on the amplifier's front panel. These include the four mixer controls, master control, phono jack, cue switch, power switch, and a VU meter which serves both for monitoring output levels and for battery tests. The amplifier includes long-life mercury batteries which, together with the unit's other components, are available through a hinged panel.

A developmental model of the RCA BN-6A transistorized amplifier was shown for the first time during the 1956 trade show of the National Association of Radio and Television Broadcasters.

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New Orleans, June 14, 15, 16**

Station

Breaks

WALA Pact Signed

Local 1264, Mobile, Alabama, signed a new two-year contract with WALA and WALA-TV, last month. The pact followed several weeks of negotiation between station management headed by W. B. Pape, vice president and general manager, and union representatives headed by Fred Couey, president of the local.

The new agreement brings wage increases, health and sick leave benefits, and other fringe improvements. Both announcers and engineers come under the 1264 contract.

WIL Marks 35 Years

The largest independent radio station in St. Louis, Missouri—WIL—recently commemorated its 35 years in business. Employing members of Local 1217, WIL now operates day and night on 5,000 watts. It began 35 years ago with 50 watts, beaming a signal to the 1,200 radio receivers in St. Louis and the few thousand more in a 300 mile radial pattern. Now it broadcasts to 2¼ million people in Greater St. Louis.

The first broadcast in 1922 was co-sponsored by *The St. Louis Star*, a local daily. L. A. Benson, founder of the corporation and now president of the Missouri Broadcasting Corp. and owner and operator of Station WWIL in Fort Lauderdale, Florida, did all the programming and announcing in addition to engineering the entire first broadcast.

Strange As It Seems

The experience of a former bookkeeper at an IBEW-agreement station in New Jersey was recently featured in the "Strange As It Seems" newspaper panel. She had been custodian of the station safe at WTTM, Trenton.

The safe was sold to *The New Hope, Pa., Gazette* when the station moved into new quarters last year. It had not been used for a time, and the bookkeeper, who was the only person to use it

regularly soon forgot the combination to it. No written record of the combination could be found.

The station management called in a professional hypnotist, and while the bookkeeper was in a hypnotic trance, she spoke the series of numbers needed.

The trance was produced before the station's listening audience. Using long-distance phone hookup with New Hope, an announcer relayed the numbers to the *Gazette*, and the safe was duly unlocked!

Teachers on Tape

Using tape recorders as a substitute for classroom teachers was proposed to 4,000 high school principals attending a convention in Washington, D. C., last month.

W. Houston Elley, principal of an Omaha, Neb., high school, said that in an experiment at his school four tape-taught seventh grade spelling classes were pitted against one teacher-taught class.

It "appears," he said, that "tape students" have done somewhat better than those who were teacher-taught.

He said tapes have also been used at his school for conversational Spanish. "Teachers who know no Spanish at all are in charge of tape classes in this language," he said.

In "tape" classes, Mr. Elley said, students are seated in groups of four around tables, each table equipped with its own distribution box and four single earphones for student use.

He predicted that if the method works out as well as now indicated, 90 or 100 pupils could be shuttled into a tape drill room, with one or two teachers in charge, and the students could go quietly about the business of learning a drill subject on three or four ability levels.

Technician-Engineer