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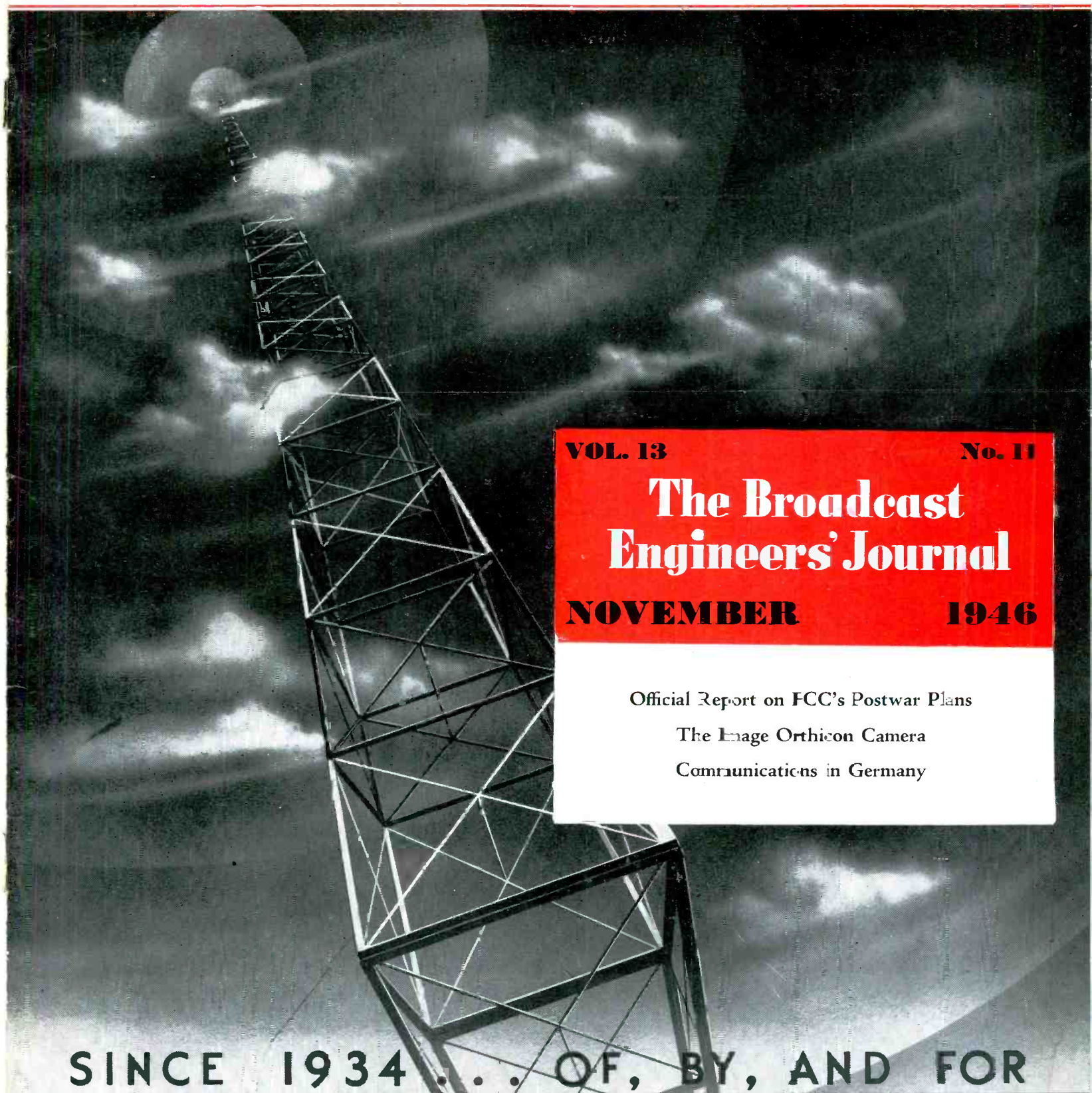

VOL. 13 No. 11

The Broadcast Engineers' Journal

NOVEMBER 1946

Official Report on FCC's Postwar Plans

The Image Orthicon Camera

Communications in Germany

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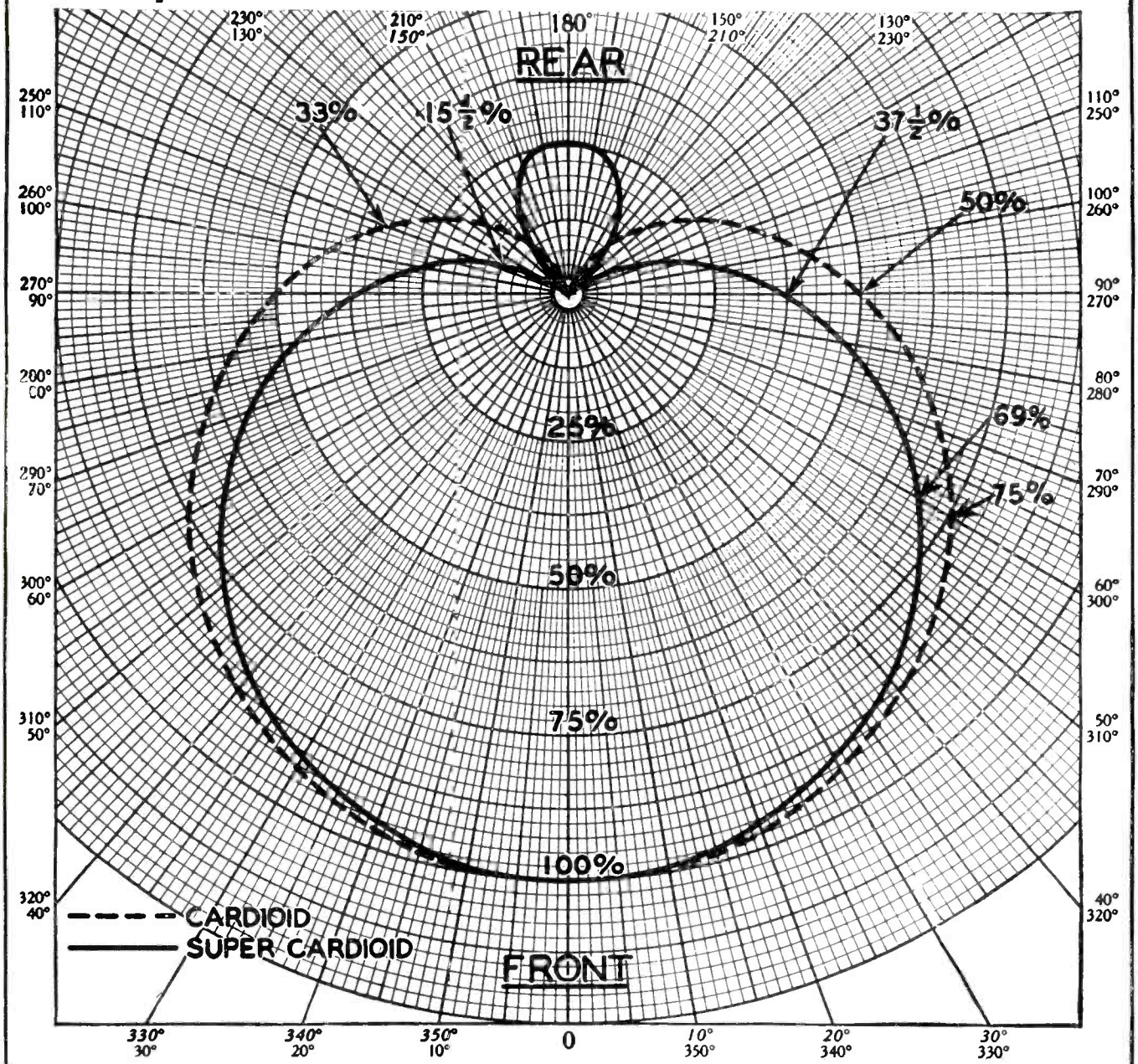
. . . Comparative Graph Proves SHURE Super-Cardioid Microphone twice as unidirectional as Cardioid . . .



Here is the difference in pickup patterns between the Cardioid and the Shure Super-Cardioid Microphone. Maximum sensitivity (100%) is achieved by sound approaching the Microphone, directly at the front. At 60° off the front axis sensitivity of the Super-Cardioid is only slightly less than the sensitivity of the Cardioid (69% against 75%). The Super-Cardioid insures, therefore, a wide range pickup at the front. Beyond the 60° angle, the sensitivity of the Super-Cardioid decreases rapidly. At 90°, the sensitivity of the Cardioid is 50%; the sensitivity of the Super-Cardioid 37½%; 12½% less. For sounds approaching at a wide angle at the back (110° to 250°) the sensitivity of the Cardioid is 33%; the Super-Cardioid 15½% or 17½% less. It has been proved mathematically that the ratio of front to rear pickup of random sound energy is; *Cardioid 7:1; Super-Cardioid 14:1.*

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THE BROADCAST ENGINEERS' JOURNAL

Ed. Stolzenberger Editor and Business Mgr.

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THE BROADCAST ENGINEERS' JOURNAL
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A. T. Powley, President

NABET ACTIVITY

Another Letter to the Editor:

September 23, 1946.

Broadcast Engineers' Journal,
116-03 91st Avenue,
Richmond Hill 18, N. Y.
Dear Mr. Stolzenberger:

This letter is greatly delayed, but since I have been talking to more of the "gang" in the Broadcasting game, I do feel that this letter deserves full consideration on a few statements listed below, towards our Journal.

It appears to me and undoubtedly to the many hundred other readers, that the Journal is now a Ham Journal. I would like to make myself clear. I have nothing against Ham radio, having a call, almost 17 years ago, when I started Commercial Broadcasting, yet, I would like to see more dope, on Broadcast information, pictures and diagrams of various stations, Studio and Transmitter—there is the QST for Ham information. Oh, yes, I know, it is impossible to suit all, hi, yet you represent Commercial Broadcasting—not Amateur Radio. True that they both closely interlock, in conversations, but let's have more on the Commercial side. Oh, yes, the pictures of the Ladies are O. K. . . . I have seen a couple articles written in the Journal, on the same subject—so you can gather from this, a l•gh majority, I feel, will substantiate my statements.

I understand that it is definitely impossible to suit all, especially the merry gang of Broadcast Engineers, but let's give it some consideration . . .

Respectfully,
[Signed] Bert Berg
Transmitter Supervisor W.H.K.K.
ex-W9GHP—W9EUR—W9EXM.
NABET Councilman, Akron, O.

Correction

The article titled "Phase Inversion Circuits," which appeared in our September issue contained drafting errors in the circuits of Fig. 1 and Fig. 4. As shown in these figures, the input terminals are short circuited. The indicated input short circuit should, of course, be replaced with an input resistor. Our thanks to Engineer William L. McDonald of WOV for bringing the error to our attention. His letter continues, " . . . Your magazine is doing a swell job of keeping the fellows up on the latest developments in the industry. Keep it up."—Thank you—Ed.

NABET Members Available for Employment

Grant E. Makinson, 325 E. Scott St., Youngstown 2, Ohio. 1st Class License. Radio Long Lines A.T.&T. exp. Westinghouse KDKA-W8XK, 1933-1937. NBC WTAM, 1937-1942. Western Electric, 1943-1946.

H. W. Schumacher, 4852 N. Winchester Ave., Chicago 40, Ill. Unlicensed. 2½ years exp. radio service, sound, equipment, recording, and maintenance. 8 months studio experience, WLS.

D. I. Massey, P. O. Box 84, Zebulon, N. C. 1st Class License, 30 months' exp. transmitter and control.

Helen Obsharsky, Belle Vernon, Pa. 2nd Class License, WCAE exp.; laid off due returning GI.

National Secretary-Treasurer **Harry Hiller** was in Detroit handling re-negotiations at WWJ, which are still in progress.

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OFFICIAL FCC REPORT ON ITS POST-WAR RADIO PLANS

THE Federal Communications Commission has announced in its recent news release No. 94754, the details of its master plan for policing the enormously-expanded postwar radio spectrum.

Wartime technological developments have increased the usable spectrum space from a prewar limit of 300. megacles to 30,000. megacycles and beyond. The forced wartime growth of radio communication has, according to some estimates, pushed the art ahead an entire generation. Hundreds of thousands of additional channels will be licensed in this added space to augment existing radio services and to introduce many new ones. Despite the vast new spectrum space available, the demand for radio channels still far exceeds the supply, making efficient policing of paramount importance.

When the federal government began policing the spectrum in 1911, after the passage of the first radio legislation, it was concerned only with a few ocean-going steamers. Today, the government, through the FCC, is confronted with the problem of preventing traffic snarls or law violation on radio highways which will carry the following estimated increases in traffic in the next few years:

Standard broadcast stations, from 1000 to 1400.
Frequency modulation (FM) stations from 50 to 3000.
Television stations from six to 200 or 300 .
Radio-equipped planes from 3000 to 50,000.
Aviation ground stations from 700 to 2500.
Two-way service for autos, taxicabs, etc., from one city to 200 cities.
Radio-equipped railroads from one road to 150.
Fire department radio from no cities to 5000.
Citizens walkie-talkie from none to 200,000.
Amateur operators from 60,000 to 100,000.

In addition there will be thousands of channels for radar, for point-to-point communication, for diathermy and many other electro-medical and industrial heating machines, for ship-to-shore communication, for multi-purpose microwave relay link systems, and many other safety and special services.

With many highly developed small radio transmitters readily available, criminals can be expected to increase their efforts to use this weapon to outwit the law.

To cope with the mushrooming radio traffic, the FCC has adopted a master plan which provides for the merger of the Radio Intelligence Division (RID) of wartime counter-espionage fame with the Field Division. The combined unit will be known as the Field Engineering and Monitoring Division and will be under the Field and Research Branch of the Engineering Department. The plan became effective July 1.

The primary wartime responsibility of the RID was the surveillance of the ether for espionage transmissions during the course of which work it discovered hundreds of other cases of illicit operation, located interference to vital war communications and furnished bearings to hundreds of lost planes.

The Field Division has been responsible for all FCC engineering work performed in the field including inspections, examinations, measurements and investigations. It has inspected all licensed radia stations, land, marine and aircraft. It has examined for all classes of commercial and amateur licenses. During the war, it inspected communications facilities as an anti-sabotage measure and enforced regulations regarding radio silence by broadcasting stations during periods ordered by the military. It tested Merchant Marine receivers at the request of the Navy to detect any oscillation which might be picked up by enemy submarines and used for direction finding purposes. It maintained a marine watch for the purpose of reporting disaster calls or reports of submarine sightings or attacks.

The Field Engineering and Monitoring Division will be headed by George S. Turner. The Field and Research Branch of the Engineering Department will be headed by Assistant Chief Engineer George E. Sterling, formerly chief of RID. Chief of the Engineering Department is George P. Adair.

The new combined Field Engineering and Monitoring Division will be the foundation of the FCC's activities for all radio services. It will act as the eyes and ears of the FCC throughout the nation. It will have these major functions:

1. Monitoring the radio spectrum for the purpose of locating sources of interference to authorized radio services and identifying all forms of radio transmission.
2. Detecting and locating illegal radio stations and developing evidence for prosecution.
3. Inspecting all classes of radio stations licensed by the Commission.
4. Conducting radio operator examinations and issuing licenses to those found qualified.
5. Measuring frequency and making technical analyses of the emission of radio stations.
6. Rendering emergency direction finding service to aircraft upon request.
7. Making field strength surveys of radio stations, conducting special engineering projects in connection with frequency allocations and related problems, and conducting propagation recording projects. These functions will be performed in conjunction with the Technical Information Division and the Laboratory Division of the Field and Research Branch.

The purposes of monitoring are (1) to check the frequency and band width of licensed transmitters to see that they do not cause interference on adjacent frequencies in the same area or on the assigned frequency in other areas. (2) To assure adherence to international radio regulations and procedures. (3) To suppress unlicensed transmission, which is an illegal act and a potential if not an actual source of interference. (4) To identify, detect, locate and eliminate accidental interference caused by defects in power lines, electrical equipment and various electro-medical and industrial devices.

The necessity for policing the radio spectrum has been emphasized by a Committee of Congress as follows:

"The radio spectrum is one of our great natural resources and one which we can ill afford to waste. If the spectrum is to be used most efficiently, transmitters must operate with the strictest tolerance in order that the maximum number of them may be accommodated. Interference with authorized communications circuits must be detected promptly and immediately suppressed. Unauthorized operations in the radio spectrum cannot be tolerated. In order to achieve these results there must be an adequate and competent staff for policing the radio spectrum."

Organization Plan of the Field Engineering and Monitoring Division

In the departmental service at Washington there will be four sections: Inspection and Operator Examinations Section, Technical Operations Section, Monitoring Section and Administrative Section.

In the field organization there will be two general groups, the Enforcement offices, which are the Field district offices and sub-offices to which in the larger cities Investigative Units will be attached; and secondly, the monitoring stations which consist of 10 primary stations and 13 secondary stations. The latter are less elaborately equipped than the former.

For the purposes of administration, the nation will be divided into nine regions, with a regional manager in charge of each.

The locations of the District Offices and the Monitoring Stations and the names of the Regional Managers are given below:

North Atlantic Region (Headquarters, New York City)
Regional Manager, Charles C. Kolster
Districts: 1 Boston, 2 New York, 3 Philadelphia, 4 Baltimore and 5 Norfolk.

Prim. Mon. Stations—Milks, Mass., and Laurel, Md.
Sec. Mon. Stations—Searsport, Maine, and Scituate, R. I.

South Atlantic Region (Headquarters, Atlanta, Ga.)
Regional Manager, Paul H. Herndon, Jr.

Districts: 6 Atlanta, 7 Miami, 22 San Juan, P. R.
Prim. Mon. Station—Powder Springs, Georgia.
Sec. Mon. Stations—South Miami, Fla., and Hato Rey, P. R.

Gulf States Region (Headquarters, Houston, Texas)
Regional Manager, Joe H. McKinney

Districts: 8 New Orleans, 9 Houston, and 10 Dallas.
Prim. Mon. Station—Kingsville, Texas.
Sec. Mon. Stations—New Orleans, La., and Oklahoma City, Okla.

South Pacific Region (Headquarters, San Francisco, Calif.)
Regional Manager, Kenneth G. Clark

Districts: 11 Los Angeles, 12 San Francisco, and 15 Denver.
Prim. Mon. Stations—Santa Ana, and San Leandro, California.

North Pacific Region (Headquarters, Seattle, Wash.)
Regional Manager, George V. Wiltse

Districts: 13 Portland, and 14 Seattle.
Prim. Mon. Station—Portland, Oregon.
Sec. Mon. Stations—Spokane, Washington, and Twin Falls, Idaho.

Central States Region (Headquarters, Chicago, Ill.)
Regional Manager, L. C. Herndon

Districts: 16 St. Paul, 17 Kansas City, and 18 Chicago.
Prim. Mon. Station—Grand Island, Nebraska.
Sec. Mon. Station—St. Paul, Minn.

Great Lakes Region (Headquarters, Detroit, Michigan)
Regional Manager, Emery H. Lee

Districts: 19 Detroit, and 20 Buffalo.
Prim. Mon. Station—Allegan, Michigan.
Sec. Mon. Stations—Lexington, Ky., and Canandaigua, New York.

Hawaiian Region (Headquarters, Honolulu, T. H.)
Regional Manager, Lee R. Dawson

District: 21 Hawaiian Islands, and Pacific Island of U. S.
Prim. Mon. Station—Punch Bowl, Honolulu, Hawaii.

Alaskan Region (Headquarters, Anchorage, Alaska)
Regional Manager, Victor G. Rowe

Consisting of Alaska. District: 23.
Sec. Mon. Stations—Juneau and Anchorage, Alaska.

The monitoring stations will operate 24 hours a day, 7 days a week.

The stations are connected by teletype and short wave radio. Whenever any one of them picks up a suspicious signal, it immediately alerts others in the area so that they can take bearings on the signals. The stations report their findings to an Intelligence Center which coordinates the reports and draws the lines of triangulation on a map. When necessary all the stations in the service can be alerted for a nationwide hunt.

Early History of Monitoring and Radio Law Enforcement

First monitoring and enforcement of radio laws was carried on by the Radio Service of the Department of Commerce and Labor following the passage of the Radio Act of June 24, 1910. When the Department of Commerce and Labor was divided into two departments in 1913, the supervision of the Radio Acts of 1910 and 1912 went to the Department of Commerce which was vested with regulatory functions over radio until 1927 and with the policing of the ether until 1932.

The Radio Division of the Department of Commerce maintained nine radio district headquarters and a number of branch offices at important strategical points. Later a primary monitoring station was set up at Grand Island, Nebraska. The Department of Commerce also maintained mobile units.

A. Capturing Bootleggers

Many exciting hunts for clandestine stations operated by bootleggers were staged by the Radio Division of the Department of Commerce and later by the Federal Radio Commission during the Prohibition era. An example was the capture of the rum ship Beatrice L in a New Jersey port, in 1932, after monitors intercepted a message indicating that it had taken on 5,110 cases of liquor. In August of 1930, the monitors in cooperation with the Coast Guard and the Department of Justice had under surveillance 100 illicit stations in the smuggling trade, of which 45 were operating along the Atlantic coast. From January 1929, to June 1930, the monitors intercepted 150,000 messages to and from these smugglers.

In 1929, Forest Redfern, Department of Commerce monitor, kept an almost night and day vigil for a whole month before he had picked up 75 or 80 code words needed to break a new and complex code used by a highly-organized bootlegging ring. Then direction finders were brought into play and the operator located in Atlantic Highlands, New Jersey. As the government men seized the illicit operator, Redfern quickly placed his hand on the key and finished the message. Then he sent a message to lure the rum running vessel to a berth where dry agents were waiting to seize it.

B. Use of Radio by Race Track Crooks

Crooked race track gamblers have also tangled with government radio monitors since the early days. The idea of flashing a running account of the race while it is still in progress to a confederate to place late bets with a bookie has always engendered such visions of big killings that the scheme has bobbed up from time to time despite some spectacular arrests. The first time that the government was confronted with this problem was in 1928, when a tipster attempting to beat the races at Bowie was detected and seized with a transmitter small enough to be hidden on his body. His vest pockets were full of apparatus and his body was wound with wire.

In 1940, at Charles Town, two illicit operators were caught using a portable transmitter about the size of a camera and a larger transmitter just outside the track as a relay station. Both men went to jail.

In 1941, two operators working a similar swindle at the Thistledown Track at Cleveland were detected and sent to prison. The same year, the Los Angeles mobile unit of the RID (Radio Intelligence Division of the Federal Communications Commission) intercepted suspicious transmissions which were traced to the Santa Anita race track. There the monitors found a completely-equipped mobile radio station in an auto which was receiving signals from a confederate equipped with a low-power transmitter inside the track and was relaying them to another confederate in Los Angeles who in turn sent them via high-powered transmitter to offices in Nevada.

In Chicago in 1941, FCC monitors began picking up messages like this one: "Lovers are like mothers-in-law at a baseball game. Signed 'Sis'." Closing in on the operator, the sleuths discovered that these were code messages from a Chicago race track which enabled the gamblers to know the results of a race before the bookie did.

In May of this year, two men were arrested before they could go on the air from the Belmont Park track. Their transmitter was set to operate on the same beam as that used at LaGuardia Field. If they had gone on the air they might have set up enough interference on that channel to cause a plane crash.

C. Eliminating Interference

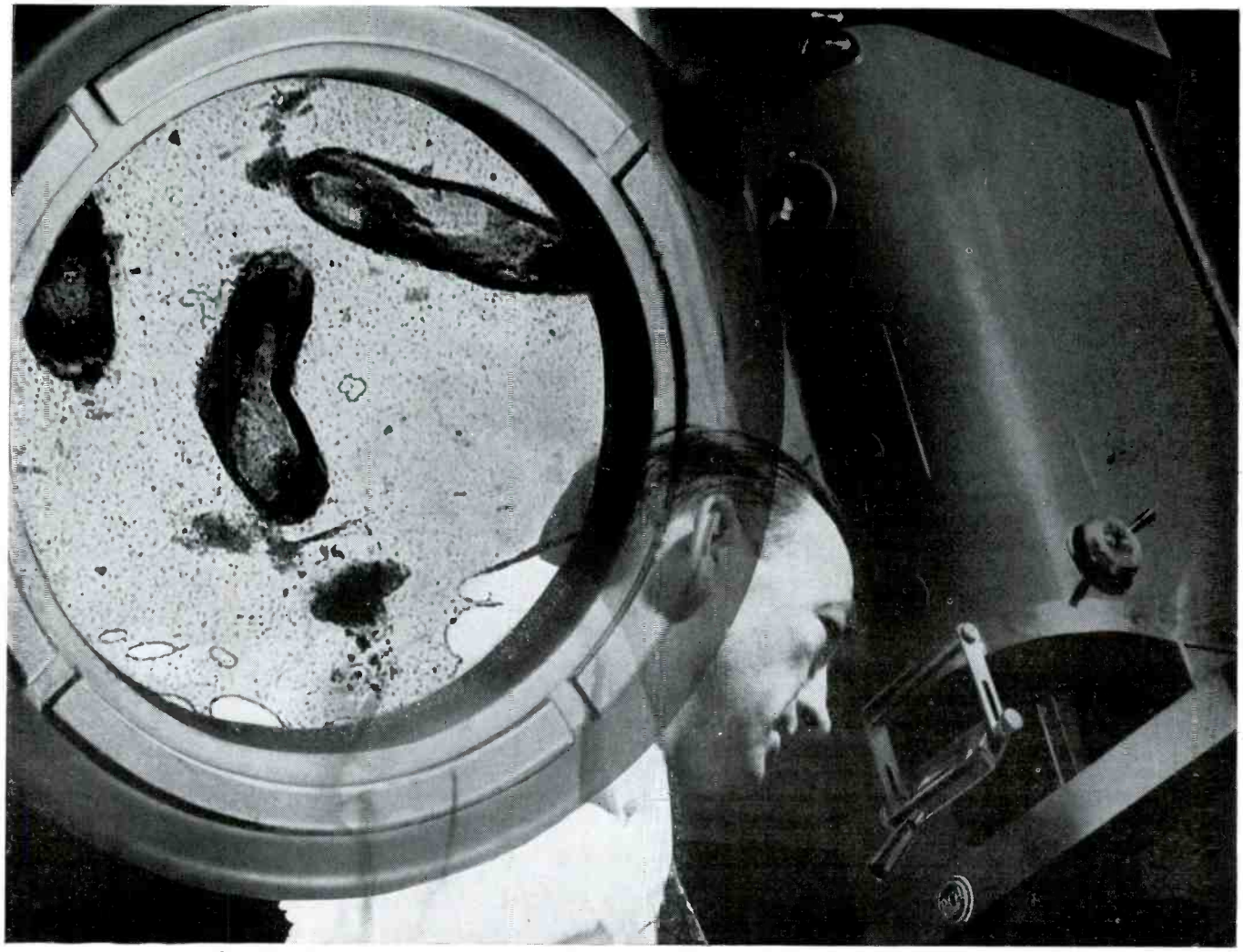
From the earliest days of radio monitoring, one of the biggest headaches has been locating and eliminating various types of interference to legitimate radio transmissions.

Such interference can be caused by broadcasting stations or other radio transmitters which slip off their assigned frequency. It can be caused by diathermy machines, phonograph oscillators, neon signs, glue drying apparatus in plywood factories, drawbridges, vacuum tube bombarders, test oscillators, faulty radio receivers, improperly tuned transmitters, automatic electric switches, X-ray machines, high voltage lines. Most of such interference is caused by negligence but sometimes it has been caused deliberately with criminal or mischievous intent.

In either case such interference can cause the crashing of an airliner which is seeking to maintain contact with the control tower. It can frustrate radio direction-finding devices and disrupt vital radio communication. In most cases it is essential that such interference be located and eliminated quickly. Broadcast listeners have been highly appreciative of this service.

The FCC has employed the same equipment, the same network of monitoring stations and the same techniques in locating interference as it has used in locating clandestine radio stations.

(Continued on Page Nine)



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A new weapon "pointed at the heart" of tuberculosis!

This improved RCA Electron Microscope can recognize 50,000 distinct particles in the width of a hair!

Through such magnification, never before possible, science can now examine the structure of the tuberculosis bacillus (shown above)—in its vital search to learn why these organisms behave the way they do.

Until the electron microscope came to the aid of disease fighters, scientists had seen this bacillus only as pin-point specks in optical microscopes. Today they can examine the membrane, body structure and details of this killer.

New knowledge of the fine structure of viruses and living cells will also be of inestimable value in the battle against still unconquered diseases.

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Radio Corporation of America, RCA Building, Radio City, New York 20 . . . Listen to The RCA Victor Show, Sunday, 2:00 P. M., Eastern Standard Time, over the NBC Network.

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RADIO CORPORATION of AMERICA

The Image Orthicon Camera

(Additional operational information is presented on both the tube and the camera that is bringing closer the day when the television industry will be self-supporting. We have witnessed this uncanny tube in operation during the recent baseball season; in several cases where the umpires deliberated calling the games due to darkness, the television picture continued without perceptible impairment of brilliance, contrast, picture noise, or entertainment value.—Ed.)

THE new RCA's Image Orthicon television camera (RCA type TK-30A) weighs only about 100 pounds complete, including the electronic view finder, and breaks down into several units for easy carrying. Its extreme sensitivity makes it possible to telecast a scene at incident light levels as low as one or two-foot-candles with an F 1.9 lens, which is now available.

The RCA Image Orthicon camera is built in two cases which fit snugly together when set up for operation. The lower unit houses the Image Orthicon pickup tube and the video preamplifier circuit and controls. On the front is a four-position lens turret which is operated by a handle on the back of the case. A smaller unit, containing the electronic view finder, mounts on top of the camera proper.

The lens turret control on the back of the camera, engaging the turret by means of a stainless steel shaft supported on needle bearings, which runs through the inside of the unit, permits the cameraman to change from one lens to another of a different focal length and refocus in less than two seconds. A trigger switch incorporated in the turret control cuts off the picture while the turret is being revolved.

One of the lens positions may be used for mounting a small film projector with a continuous strip of 16mm film, containing 36 different pictures, to provide illustrative material or titles. This permits insertion of "commercials," test charts, station call letters, and still pictures in remote pickup programs without switching back to the studio.

It is also possible to insert a special lightweight telephoto lens into any of the turret openings, for use when it is necessary to locate the camera at a considerable distance from the action.

Because the photocathode of the Image Orthicon is much smaller than those of previously used pickup tubes, it is possible to use relatively inexpensive standard camera lenses for all types of pickup.

Focusing of the RCA Image Orthicon Camera is accomplished by rotation of a large knob on the side of the camera, which moves the pickup tube backward or forward, bringing the scene in focus on the photocathode without moving the lenses themselves.

Controls for centering, linearity, brightness, contrast, and picture height and width are adjusted when the camera is first set up. Controls for adjustments necessary during actual operation are located on a remote camera control unit. The operator needs only to keep the camera directed on the scene of action and the picture correctly focused.

The electronic view finder employs a 5-inch Kinescope with sufficient second-anode voltage to produce a very satisfactory picture under normal light conditions. Since this picture is identical to that which is being transmitted to the camera control equipment, the operator is able not only to accurately frame and focus the picture, but also to monitor its quality. The electronic view finder also eliminates the need for a complete set of duplicate lenses which would be required for an optical system.

For shutting out extraneous light from the viewing tube, two viewing hoods are furnished with the camera, one opening directly into the view finder, while the other is a periscope-type hood with two 45-degree mirrors mounted in it, for viewing positions either below or above the level of the view finder.

An "on the air" tally light inside the view finder hood informs the cameraman when the camera is supplying video signal to the transmitter and red signal lamps on both ends of the camera indicate to the announcer and all others concerned which camera is "on the air".

The camera case is constructed to give ready access to all the interior components. By a half-turn of two catches, either of the side doors can be opened to expose all the circuit components, tubes, resistors, and condensers for easy maintenance and replacements. On the bottom of the camera case is the connecting plug for the power line and a 110-volt utility outlet for a soldering iron and lights to assist in minor adjustments when needed. There is a screened air-intake in the bottom of the camera for an air blower which furnishes forced-draft ventilation for cooling the Image Orthicon unit. A set of jacks is provided for plugging in interphones which allow the cameraman to communicate with the video engineer at the central control position. There are also plugs for the announcer's microphone and for his headphone for cueing and monitoring.

The electronic view finder unit is also constructed in such a way as to allow for easy checking and replacement of parts. It is electrically coupled to the camera circuit by means of a contact plug which engages automatically when the view finder is placed in position on the camera.

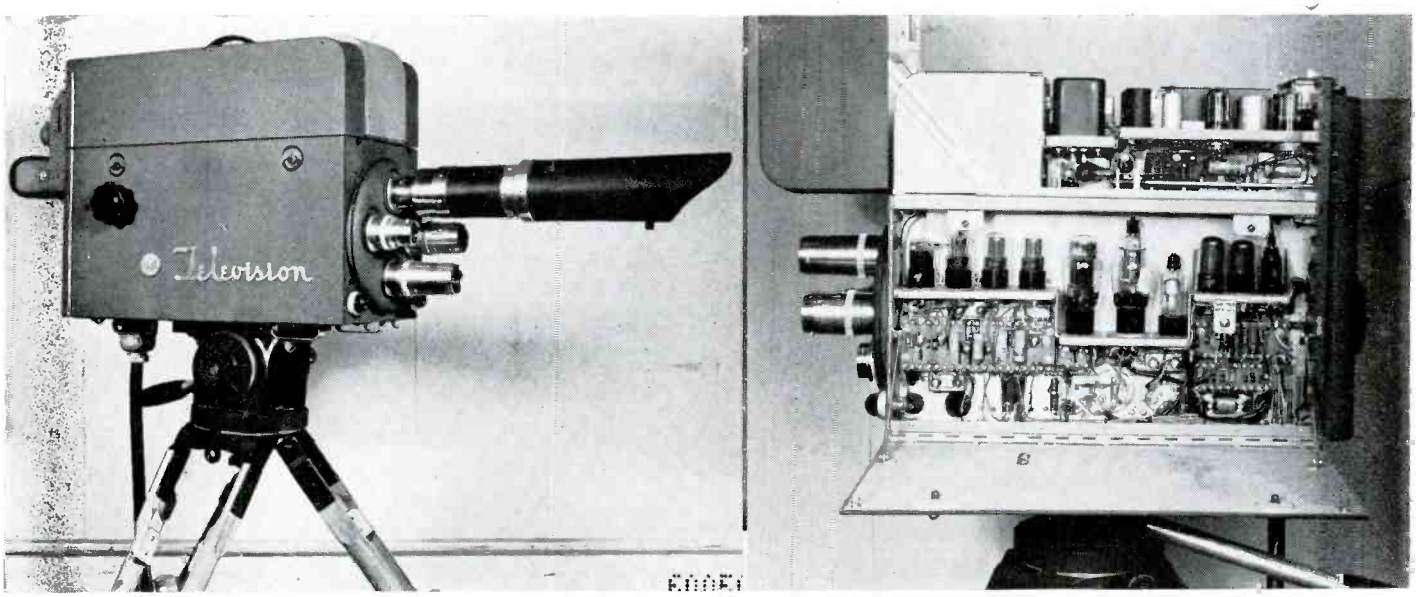
When used in the field, the Image Orthicon Camera is usually mounted on a tripod or a turret. For studio use, it can be mounted on a tripod which in turn is placed on a dolly for easy maneuverability. It is also possible to use the camera with a crane-type studio dolly for special angle effects and overhead shots.

The Image Orthicon Pickup Tube

The RCA Image Orthicon pickup tube, which is about 15 inches long and 3 inches in diameter, has three main parts: An electron image section, which amplifies the photoelectric current; an improved Orthicon-type scanning section, smaller and simpler than those built before the war; and an electron multiplier section, the function of which is to amplify about 1,000 times the relatively weak video signals before transmission.

The principle which makes the new tube super-sensitive to low light levels is known as secondary electronic emission, which makes use of electrons emitted from a primary source as missiles to bombard a target or series of targets known as stages or dynodes. At these dynodes, two or more electrons are emitted for each striking electron.

Light from the scene being televised is picked up by an optical lens system and focused on the photocathode of the tube, which emits electrons from each illuminated area in proportion to the intensity of the light striking that area.



Left: Telephoto lens puts television audience in "front row." Use of a telephoto lens on the RCA Image Orthicon television camera brings the "ringside" to the fireside. Although, at the recent Louis-Conn fight, it was necessary to locate cameras about 235 feet from the center of action, this camera, with telephoto lens, brought the television audience the same view they would have seen within ten rows of the ring. The special lens can be quickly mounted in one of the four openings in the revolving lens turret.

Right: Camera construction affords easy access to components. Maintenance and replacement requirements of the new RCA Image Orthicon television camera are simplified by the streamlined arrangement of tubes and circuits and the hinged side panels and cover illustrated by this view of the video preamplifier compartment (lower section) and electronic view finder, (upper section). The Image Orthicon pickup tube is housed in a center compartment, behind the vertical partition seen in this view.

Streams of these electrons, accelerated by a more positive voltage and held on parallel courses by an electromagnetic field, speed from the back of the photocathode to a target. Secondary emission of electrons, caused by this bombardment of the target, leaves on the target a pattern of varying positive charges which corresponds to the pattern of light from the scene being televised.

The back of the target is scanned by a beam of electrons generated by an electron gun in the base of the tube. The electrons making up this beam are slowed down so that they will stop just short of the target and return to the base of the tube, except when they approach a section of the target which carries a positive charge. When this occurs, the beam will deposit enough electrons on the back of the target to neutralize the charge, after which it will again fall short of the target and turn back until it again approaches a positively-charged section.

The returning beam, with picture information imposed upon it by varying losses of electrons left behind on the target, is directed at the first of a series of multiplier stages near the base of the tube. Secondary electrons, knocked out of this electrode by the bombardment, strike a second dynode, and this process continues, with the strength of the video signal multiplying at each dynode until it reaches the signal plate and is carried out of the tube through an external connection.

POSTWAR RADIO

(Continued from Page Six)

Wartime Activities

A. Locating Clandestine Stations

When war broke out in Europe and began to threaten the security of this hemisphere, America was faced with the immediate problem of guarding against espionage radio transmission. Without adequate precautions spies and saboteurs would use the radio as one of their most dangerous weapons.

Fifth columnists and Nazi spies were already using small, compact but high-powered radio transmitters with great effectiveness in Europe. German secret agents were reported to be sending information to Germany from powerful transmitters in South America. Rumors of similar activities were circulated in this country. There were, of course, thousands of short wave transmitters in this country which might be used by enemy agents. In addition, there were many thousands of electro-medical devices which could easily be converted to transmitters.

To cope with this new problem, the FCC put its monitoring activities on a wartime footing by organizing the Radio Intelligence Division (RID), greatly expanding its personnel, establishing many new monitoring stations and building or purchasing specialized equipment.

Monitoring stations were also maintained in Hawaii, Alaska, and Puerto Rico.

In cruising the spectrum for espionage or subversive radio transmissions, and in tracking down clandestine transmitters during wartime, the FCC expanded the techniques it had developed in battling the illicit radio activities of bootleggers and crooked race track gamblers during peacetime.

At the height of its wartime activity, the RID had 102 monitoring stations. Various networks could be instantly alerted, as required to check on suspicious signals.

As the result of this intensive around-the-clock surveillance, enemy espionage transmission in this nation was kept almost to zero, despite the huge size of the country, the enormous shore

lines and the desperation of the enemy. The RID became the largest and most efficient organization of its kind in the world and was studied by representatives of many foreign nations.

When a transmitter in the German Embassy at Washington went on the air two days after Pearl Harbor, the signals were picked up by five monitoring stations and the transmitter was located within a few minutes after it went on the air, and before it could establish contact with the station it was calling in Germany.

The bulk of the enemy espionage transmitters were located by the FCC outside of American jurisdiction—in Latin America, in Africa and elsewhere within the territory of the United Nations. The Emergency Advisory Committee for Political Defense in 1943, issued this statement: "The pernicious and constant activities of the German spies . . . are proved by the hundreds of messages intercepted by an agency of the Government of the United States of America by means of detecting equipment situated in that country." (The agency referred to was the FCC.) The FCC sent some of its best men to assist South American nations in suppressing subversive radio transmission and also trained some of the natives in the techniques of radio intelligence work. More than 200 spies were rounded up in South America.

Between July 1, 1940 and V-J Day, the FCC located some 500 unlicensed transmitters within the United States, its territories and possessions. In addition, thousands of suspected cases of illegal operations were investigated.

B. Lost Plane Direction Finding Service

One of the most dramatic phases of the FCC wartime monitoring activity by its nationwide network of stations was furnishing directions or bearings to lost planes.

At the request of the military a plan was perfected shortly after Pearl Harbor whereby these networks could use their high-powered direction finders to locate lost or distressed aircraft and this service resulted in an impressive score of thrilling rescues. The Army and the Navy and commercial air lines leaned heavily on the FCC monitoring service for this lost plane assistance.

As long as faint radio signals could be heard, bearings could be furnished to a lost or distressed plane even though it might be hundreds of miles out at sea. In scores of cases such directions came just in time to lead to safety a plane which was rapidly running out of gas.

An example of this work was the location and rescue of a plane carrying 25 flyers and soldiers, grounded in the wilderness of Northern Quebec. A plane carrying Kay Francis was given bearings at sea and was brought in safely just a few minutes before it ran out of gas.

During the war, the FCC furnished emergency bearings to more than 600 planes, including military craft, many of which would otherwise have been lost.

Among the many letters of appreciation received from the military was this one from General William J. Flood, chief of staff of the Seventh Army Air Force in Hawaii: "I wish to commend the FCC and its men responsible for this assistance. It has been of great value and in numerous cases directly responsible for the saving of lives and valuable equipment."

C. Locating Interference

Thousands of cases of interference, many of them hazardous to vital military and civil communications were located by the FCC during the war.

When the lives of pilots were endangered by interference to plane radios at the Glen L. Martin Bomber Plant, during test flights, the offending signals were traced to a nearby hangar and the case turned over to the Plant Protection Chief for appropriate action. A calibrating device was found to be interfering with test flights at Kansas City. A small radiophone transmitter accidentally left on was found to be disrupting communications in the 13th Naval District. A defective transmitter was discovered to be the source of interference so serious that planes approaching the Naval Auxiliary Air Station at Kingsville, Texas, could not communicate with the control tower. Improper operation of a transmitter was found to be causing an interference which paralyzed all operations on a certain frequency throughout the West Coast area of the Fourth Bomber Command.

Special Postwar Problems

The availability of surplus military stocks of radio equipment, the increased number of persons familiar with radio operation and the expanded use of radio in air navigation in police work and in many other types of communication are creating special problems for FCC radio law enforcement officers.

Operation by unlicensed operators, by persons unfamiliar with the radio laws or by pranksters or criminals can create far more havoc than in the prewar days of a relatively uncrowded radio spectrum. They can cause ships to go on the rocks, airplanes to crash, police departments to lose the trail of hoodlums .

Interference from diathermy and other electrical machines has greater potentialities for danger and confusion in the ether.

The addition of many huge airliners and the advent of many private flyers will add to the burden of locating and furnishing directions to lost planes.

Stocking of surplus walkie-talkies and other transmitting equipment in recent months has created a special problem. Under the Communications Act, no person may operate a radio transmitter without first obtaining a license from the FCC. Such unauthorized use is punishable by a $10,000 fine or imprisonment or both. No licenses will be issued by the Commission for the walkie-talkie and other transmitters by the general public, except in the Amateur Service, until the Citizens Radiocommunication Service, designed to govern such use, is put into effect. Retailers are asked to attach tags to their equipment explaining the penalties involved in unauthorized operation.

Functions of the Laboratory Division

The Laboratory Division of the Field and Research Branch of the FCC Engineering Department is located on the land also occupied by the FCC Primary Monitoring Station near Laurel, Md. Construction of a new building to double the present space will begin soon.

Chief functions of the Laboratory Division will be to study the civilian uses of radar as they affect frequency allocations, to study wave propagation, develop new monitoring equipment, to test all types of transmitters, and diathermy and industrial heating equipment for type approval.

As the result of wartime technological progress, hundreds of new pieces of communication equipment will be presented to the FCC for type approval. This equipment will include not only such well-known devices as FM, television and other radio transmitters but also such relatively new devices as pulse modulation equipment, radar equipment, facsimile equipment. Before standards can be set for such equipment it must be carefully studied under controlled laboratory conditions. After standards have been set each make and model must be subjected to laboratory tests to assure that it meets the standards set.

In the Frequency Allocation Hearings of 1945, the FCC was seriously handicapped by the absence of the detailed knowledge of this type of equipment which can only be acquired through laboratory study.

A pressing problem at this particular time is the study of antenna structures of all kinds. Wartime antenna developments have revolutionized scientific thought concerning the relation of antenna design to propagation of radio waves. In the exercise of its licensing functions, the Commission must have full knowledge of the best antenna technique for the solution of each particular propagation problem.

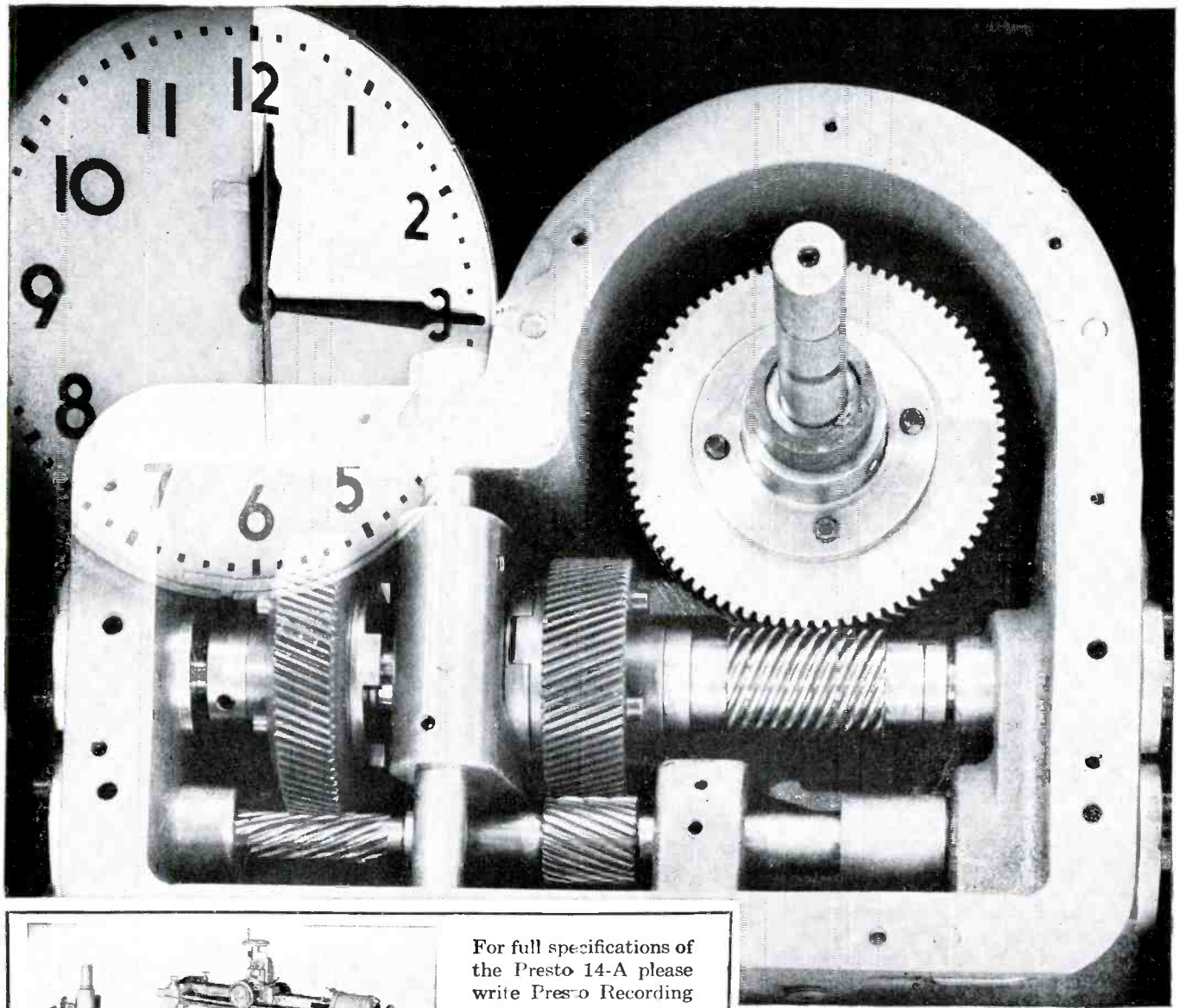
The allocation of frequencies to the various services and the establishment of rules, regulations and standards of good engineering practice require expert knowledge of all the technical factors involved. In addition, the Laboratory will carry out the specific mandate of the Communications Act to "study new uses for radio, provide for experimental uses of frequencies and generally encourage the larger and more effective use of radio in the public interest."

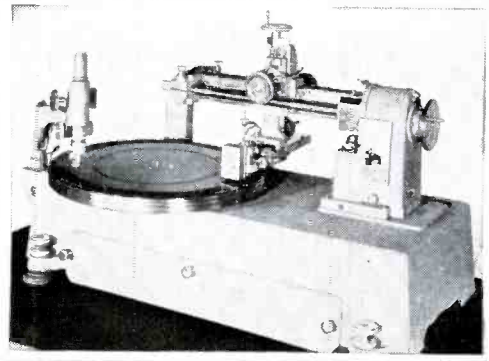
Chief of The Laboratory Division will be Charles A. Ellert, who has been serving as technical supervisor of the RID. Willmar K. Roberts, engineer-in-charge of the Laurel Laboratory of the Field Division, will be assistant chief.

Playback Time = 15 Minutes ± Zero

▶ Directly gear-driven at both 78.26 and 33.33 rpm by a synchronous motor, the playing time of recordings made on the Presto 14-A corresponds to the original program time with split-second accuracy. The only deviation in speed may be due to variations in power supply frequency which seldom exceed 0.1%. Rotational flutter and background noise from mechanical sources are at an absolute minimum.

▶ The Presto 14-A represents a major advancement in the design of recording turntables, having all of the performance characteristics demanded by experienced engineers. Illustrated below is the new 14-A gear drive.





For full specifications of the Presto 14-A please write Presto Recording Corporation, 242 West 55th Street, New York 19, N.Y. To insure future delivery within a reasonable time, we suggest you place your order on our priority list since orders are considerably in advance of production.

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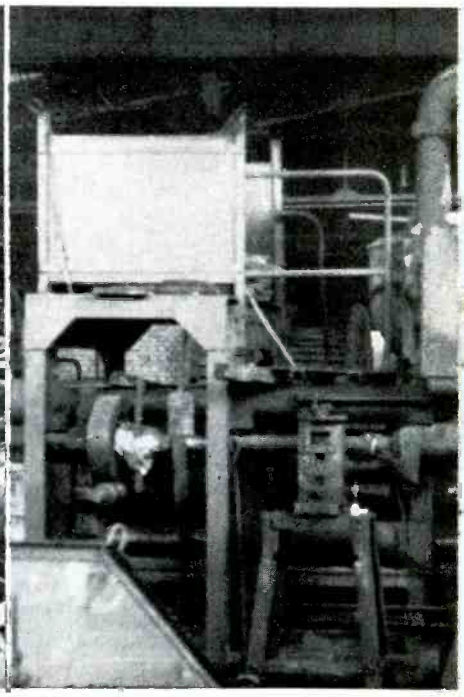
WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS SOUND RECORDING EQUIPMENT & DISCS

Bombs have ripped apart this section of a cable factory in Osnabruck, Germany



Some other sections of the damaged. This is a cab

Communications in Germany*

By Pierre Mertz

Transmission Engineering, Bell Telephone Laboratories

GERMANY'S principal cities were connected by a network of coaxial cable designed to handle two hundred simultaneous telephone conversations plus one television program in each pipe.

The Germans had set up an extensive wire broadcasting system providing three programs led into the home by carrier over the regular telephone channels and tied into the home radio receiver.

Some of their component designs were in advance of ours. Much of their system's planning was patterned after and somewhat behind ours.

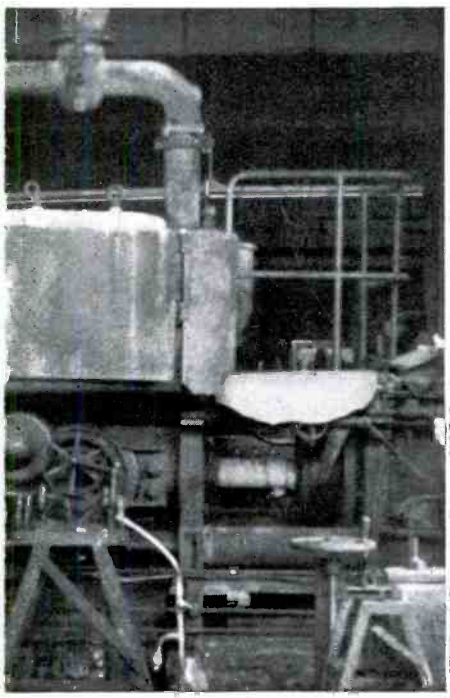
These items reflect the findings of a six-week tour of Western Germany's communications facilities, factories and laboratories from June to August 1945. J. R. Townsend, also of the Laboratories, R. H. McCarthy of Western Electric, and I were members of an American-British delegation sent by the Technical Industrial Intelligence Committee of the Combined Intelligence Objective Subcommittee to study developments produced by German science before and during the war.

We visited—among other places—Hamburg, Nordenham, Frankfurt, Nuremberg, Munich, Konstanz, and Cologne, talked to many specialists, and inspected operating plant and manufacturing sites. The state of destruction, by now fairly well known, was new to us. Factories producing communications equipment, we learned, were partially but not completely destroyed. Many were in relatively good shape and a substantial number were repairable. The Germans had located numerous communications stations and factories underground and these were little or not at all damaged. Centers of large cities were, in many cases, completely obliterated by bombing, but since factories were usually located in the suburbs, they often suffered less damage.

German communications were owned, operated and maintained by the government. Equipment manufacture, including cable, was concentrated in a relatively few private concerns which, however, had many branch offices and subsidiaries. Significantly, university professors were employed to a large extent by private concerns as consultants on industrial problems.

As mentioned, the civilian system included a broadband cable network for multi-carrier telephone and television between the principal cities. The telephone equipment for this network was in place and was said to be operable although it was not in use due to difficulties involved in crossing occupation zone boundaries. No high definition television had ever been carried on the network except over the very short distance from Berlin to Brocken on Berlin's outskirts. The intermediate television repeater stations spaced halfway between the carrier telephone stations, which were placed at 35-kilometer intervals, had been installed but never connected with the circuit. The coaxial pipes were somewhat larger than ours to give less attenuation at higher frequencies, and styroflex insulation had been used extensively. There was a fairly dense network of more conventional toll cables, mostly underground, and some open

*(Reprinted by permission from the Bell Laboratories Record, July, 1946)



same factory were little
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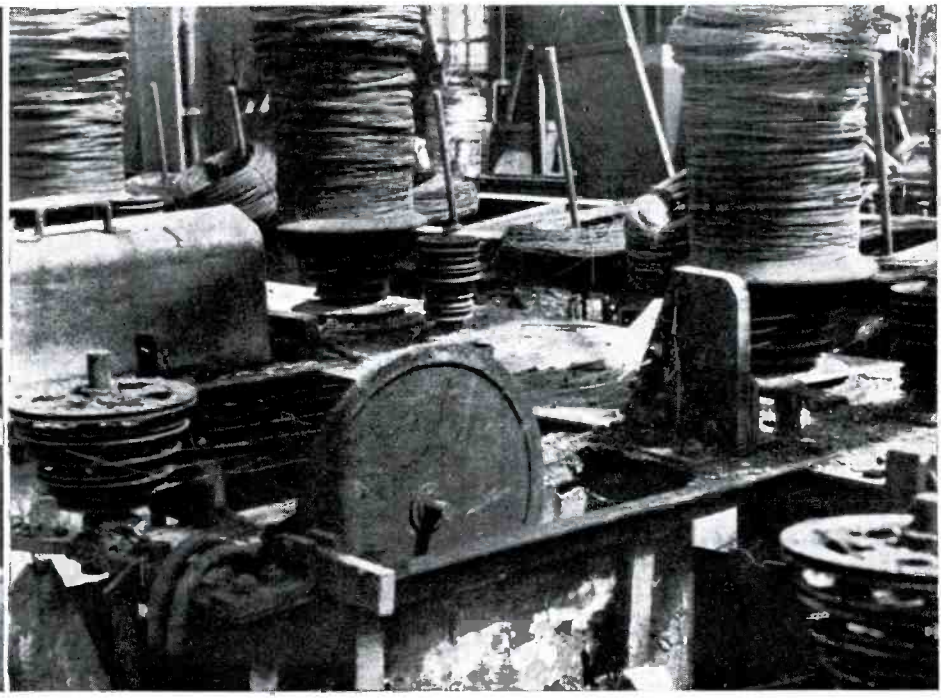


With slight repairs, this wire-drawing machine can begin producing again—Photos by J. R. Townsend

wire. To this network, military communications had added field open-wire circuits designed for multi-channel carrier operation, and some short-wave radio.

Many types of civilian carrier systems had been developed, most common of which was a "two-band" circuit with a carrier band immediately above the voice band frequencies. The total spread of the two bands was 6 kc and they were handled as a pair throughout the entire transmission path. No obvious precautions had been taken to prevent cross-talk between the two channels. There were also infrequent extensions of this system by superposition of higher frequency channels immediately above the two bands. Complete systems of eight and fifteen channels, and, of course, the two hundred channel coaxial circuits, had also been developed. Some German engineers seemed to think the fifteen and two hundred channel circuits too complex for practical operation.

Voice frequency program circuits to interconnect radio stations were included in the German communications networks and differed not radically from ours. The wire broadcasting channels mentioned previously which led directly into the home via telephone channels were also provided. Through modification, radio sets could be adapted to receive the program.

German workmanship tended to be good with the emphasis on durability rather than speed and simplicity in manufacture. A considerable number of plug-in contacts were used, which provided flexibility but which we might consider undesirable from a noise standpoint. Vacuum tubes, produced extensively in underground factories, had been so standardized that large quantities were made of a very few types.

Shortages of both materials and time affected German products. Aluminum wire was replacing copper wire even to the point where it was planned as a substitute in new broadband cables. Lead sheathing for cables was almost paper thin and was supplemented with a heavy covering of impregnated paper, steel wire and tape. Some military cable had been so hurriedly made that it consisted merely of paper-insulated pairs tied together with cord, and with no outer covering at all. Heavy fighting that surged back and forth at Julich littered the ground with what seemed like cobwebs of cable, which included much of this temporary type.

Die castings were prominent in radio equipment manufacture. Near Stuttgart we saw a factory especially designed to handle large size and complex castings for radio set chassis. Among components to which the Germans gave particular attention were condensers. They had a process for vapor deposition of metal on the dielectric for weight-saving and self-healing properties, and another for extrusion of styroflex into thin sheet material as a substitute for mica or paper. This latter product appears useful not only for condensers, but in cables and other high-quality dielectric applications. They had also found a process for saving silicon in the production of crystal rectifiers by vaporizing silicon on carbon. The rectifiers were designed for radar use and appeared to have properties not too different from ours.

Little was learned about German propagation studies. It was found, however, that the Reichsanstalt (German Bureau of Standards) had measured the properties of a variety of materials to waves ranging from 3.5 mm to 50 cm and that low power, continuous wave magnetrons had been developed for use in the shorter wave measurements.

Television specialists interviewed said they had been principally concerned with development of a large-screen projector system and high definition running up to 1,000 lines, before the war transferred their attention to military applications. Small and simple transmitters for guided missiles had been turned out but never used significantly in combat.

Photosensitive surfaces, photoconductive materials, and materials whose dielectric constant changed with light seemed of particular interest to the Germans. A photo-cathode used as an image tube in converting an infra-red beam into a luminous picture on a fluorescent screen had been brought to the

(Continued on Page Twenty-one)

from HOLLYWOOD *by Norman Dewes*

WELL

IT HAS been Lo! these many moons since the Hollywood Column has reared its lovely head . . . of SKIN, that is . . . and thousands of protesting letters have been received from the same number of avid readers of the Journal, protesting . . . the gist of their letters being ". . . jist keep that tripe OUTA tha mag and we'll ALL be happy . . .**" So-O-O-o-ooo, in the interests of keeping everybody happy here we come again with as much CHIT 'n stuff like CHAT there as Stolzie has fits to print. NATCHERLY, we should have an alibi or two as to where the Hollywood Dewes has been for the past several Muntz, ("Mad Man," that is . . . we get a used CAR after only 9,999 more Muntz mentions . . .) and as a matter of fact we HAVE quite a nice assortment of alibie, or alibae or alibei or alibam or alibum or TOHELLWITHIT, but after looking and thinking them all over, it seems better not to mention ANY of them . . . all we can definitely remember ANYWAY is spending the last week of our vacation last June with Mabel over at Catalina Island and after THAT everything has been going around in a lovely, warm, bright golden HAZE . . . some days the haze is a lovely, warm, bright chartreuse, and on OTHERS a lovely, warm, bright CERISE . . . and on SOME days we simply can't tell what haze it IS . . . we DO definitely recall the SPENDING tho . . . boy, they sure can take it away from you over there, but SYSTEMATICALLY . . . it was such FUN, tho . . . and we had a very GAY time letting it get taken away from us as many as SEVERAL times each day and Mabel, you are SOME KID . . . but now it seems we must FACE LIFE (Oh Gawd not THAT!! . . .) again and get down to the BUSINESS in HAND, to wittily The Column and the getting out of it, as we seem to have BEEN doing for the past several issues . . . OR, as we say in the writing fraternity, "getting the RAG out . . . " Any questions?

NBSCENES

IN ASMUCHAS we don't know just WHERE in the heck we stand as regards SPACE this month, are gg to OMIT the usual greetings to Stolzenberger, platitudes on California, weather observations, and other trivia, and put in FAKS instead of YAKS . . . which we are safe in doing for they are usually SYNONYMICAL . . . so here is a pre-digested swait of NBCvents, transpired EARLIER for release at this less AWKWARD time . . . we were gg to say "transcribed" but THAT word is top-drawer TABOO with NBC these days . . . it scares thahelloutathem . . . FIRST, we better explain about the PICTURES which have appeared in the Hollywood Dep't in lieu of WORDS recently . . . if what Confucius say is SO, we should be several 1000 words AHEAD by now . . . the three-shot of the FISH in the July issue is a piscatory CHALLENGE to the Hudson Chapter from Eddie Miller, NBC SE and leading piscator (watch yer diction . . .) among the Hollywood engineers . . . Johnny De Grazzio actually caught THIS one, four and a quarter pounds and twenty-five inches of the nicest trout you ever saw, in the stream below Lake Malibu, but Eddie got one an inch LONGER and sez let's see yuh beat THAT, you Hudson guys . . . and then in the September issue on page 17 is a REVOLTING photo of Jimmy Brown, pre-war NABET National President and not long ago back from the Navy to resume civilian duty at Hollywood Master Control . . . Jimmy is also now Hollywood Chapter Chairman and we were SUPPOSED to have included a biog and profile with the shot but DIDN'T, but WILL shortly since it is quite LURID and should make good reading . . . Ralph Denechaud of ABC's Hollywood Engineering Office snapped the shot, together with some OTHERS which we hope Stolzie will run with the biog . . . under Jimmy is Johnny, who is the Good Mixer on the "Truth or Else" program and who was chosen to introduce the NEWEST THING in mike stands, OR, Figgins' (NBC Hlyd Maintenance Supervisor) answer to Petrillo . . . Frank claims that this ingenious mess of chrome-plated PLUMBING will make one musician sound like a FULL ORCHESTRA . . . and please note the black affair immediately BEHIND Bro. Pawlek, which is a FILTER Mike whose function is to filter out the LOW frequencies of any incident sound striking it . . . seriously, the piping items were made up in Frank's department to replace the old double mike yokes and are very FANCY and ANYWAY the fellows had taken home most of the old ones for their lawn sprinkler systems, so the new ones are very welcome . . . so much for pix . . . We would like to extend a belated GLAD HAND to Dave Moloney, NBC Audio-Video Field Representative and out here from NY to overlook the engineering installations in the new studios and Recording Plant now nearing completion adjoining Hollywood's Radio City . . . Dave has been here for several weeks and is still hoping to find a nest somewhere . . . in fact, ANYWHERE . . . has a fine crew working on the wiring, but finds materials SCARCE so doesn't know WHEN he will be back to NY, if EVER . . . Dave has been very active in NABET and Journal affairs for many years (see honorary biog in August issue, page 13). Murdo McKenzie, who has been engineering the Crosby show has PULLED OUT of Engineering and, following in the footsteps of Capstaff, Bob Moss and other SMART engineers, gone with the Agency, as a sort of Technical Producer on the new Crosby series for Philco . . . as no doubt you have heard, shows are transcribed . . . at Radio City by ABC for later release over the ABC net and also a number of independent stations . . . our Jimmy Banks, ABC SE is doing the mixing, with Murdo breathing down his neck and checking on every twitch . . . many other changes in staff, occasioned by vacations, war returnees, etc., and as soon as things settle down for the Fall Season, which is an understatement of wishful thinking if we ever HEARD one, will report on the new line-ups in full . . . just space now for a few VITAL statistics, which we would like to mention even tho occurring some little while ago . . . it was a BOY for the Al Gages . . . name of Curtis Clayton, brown hair, blue eyes and 10 lbs. even, at California Hosp 6:04pm the 8th of May . . . this is TWO for Virginia and Al who is a Recording Engineer for NBC and they're going to call him "Porky" . . . mama was a former Med Lab Technician at the same hospital . . . Howie Cooley, also NBC RE segued recently with Betty Emory, former NBC secretary and now with Benton & Bowles and Glamour Manor show for ABC . . . were married in church with Recording pal Max Burnham as best man and thence to San Fran on Howie's vacation . . . Howie's back now and last WE heard they were living in his one and a half room apartment on Fairfax . . . no kitchen, so no cooking . . . in fact, Howies can't give her anything but Love, BABY . . . and then Willis Oborn up 'n made the crossover with Nan Wallace from out of Recording Supervisor Les Culley's office a few weeks ago, and this leaves Jim Thornbury as the last blank in Recording . . . Jim is a VERY eligible engineer, but SO FAR just takes 'em and LEAVES 'em . . . no DETAILS on the Willis-Wallace grooving except that Willis was IMMEDIATELY placed on the NIGHT shift . . . no comment . . . which is all the NBC space available, since we GOTTA save a little for the OTHER network . . .

ABC / KECA

SO MUCH has happened since we last took our typewriter in hand, and gently but figuratively threwn it out the WINDOW, that we probably will NEVER catch up so will mention only the more RESOUNDING events . . . Bill Williams, Roger Love and Hal Powell are back on staff, having completed their assignments with the Armed Forces or thereabouts, which winds up the returning returnees for ABC in Hollywood . . . Williams has been gone since 1942, with N.D.R.C. at Columbia and then ALL OVER with Navy Radio & Sound Lab . . . Bill is one of the "Famous Five," the original chosen chameleons who changed from Red to Blue in '42 . . . both Love and Powell were Signal Corps men and were rife with experiences, SOME of which we hope to be able to relate in a future issue . . . as on NBC, many and varied has become the ABC Engineering gang thru the summer vacations, additions and replacements and perhaps by NEXT time we will have COMPLETE DETAILS available as to whom are WITH us and whom AIN'T . . . would like to mention the truly excellent

work in photography being done currently by our man Ragsdale . . . Fred's camera efforts have recently appeared in many national publications, including his "Arizona" on page 72 of "The Camera" for July, a first prize winner of a California Ghost Town character on page 20 of "Desert Magazine" and a very fine photo-illustrated article on "Ghost Towns" in the June "Minicam Photography," page 28 . . . Fred specializes in desert scenery and spends all of his spare and vacation time roaming the western desert country in search of new subjects . . . and then we have a NEW ABC Engineering Secretary, name of Willie McDaniel, who replaced Miss Corinne Murphy who pulled up stakes and went back to Chicago, having gotten P.O.'d with Radio in general and engineers in particular . . . as soon as we have cultivated Miss McDaniels a little DEEPER, will report FURTHER . . . latest ABC flurry is the New Car Pool which has been arranged with the Studebaker Corporation, whereby we gets a new 1947 "Studie" of our choice in color, body style, etc. and SOON, we hope . . . so far, nearly EVERYBODY is going for the deal, and we can just SEE the Parking Lot so full of 'em that it will also be full of ABC owners wandering around trying door keys trying to find THEIRS . . . and last but certainly not LEAST was the ABC Outing, as it was so naively called, at V.P. Don Searle's Valley rancho, with swimming, ping-pong, horse shoe pitching, dancing and many OTHER activities too numerous to mention . . . or simply too TOO . . . as USUAL, nothing happened to US that we can MENTION, and we don't recall falling in the swimming pool at ALL . . .

AROUND 'N ABOUT

WELL, we managed to get AROUND a little during our relapse, and were ABOUT to, we mean TOO, several times . . . but were always interrupted by the phone ringing or something. but nevertheLESS accumulated QUITE a hook-full of very choice items of GENERAL interest, but are SURE there isn't enough space left to do 'em justice, so will hold 'em OVER until next issue . . . would like to TAG this stint however, with one of those quite frequently very APT quotations from the neat blotters EVERYBODY'S insurance man Frank Davis sends out to all his customers in the Building each month with your name on 'em . . . THIS one was by Andrew Jackson and said, "Take time to deliberate; but when the time for action arrives, stop thinking and go in" . . . BCNU.

Hudson Eddy Currents . . . *by Pat Miller*

THE Carteret Gang are wondering when Carl Berry is going to screw up his courage and "pop the question" to the attractive Miss he is escorting of late. Dick Quodimine of Carteret finally got his car back from the hospital. $600 was the sad news. Luckily he is insured. Lowell Frank (studio) has been seen arm in arm with a scintillating lovely. Rumor has it she does her bit on Lowell's "Leave it to the girls" show.

Earphone Prattle

Gene W2HTA Clark (studio) finished his one half kw final but alas he needs more grid drive. Al "xxxxx" King W1JM/W2 has started to build a similar final. Ye Ed knows Al well enough to say that he will worry about grid drive after he finds he needs it. Both guys are yapping away on 28 mc phone. Alex (W2KSC) Stanford of Cartetet has 35 watts on 80 phone and believe it or not he gets out.

Next Month

"The Whale that got away," starring Bill "Striper" Boher and Ex-Editor Carter.

Bert Harkins

Unlucky Bertram in the Middle as Usual

P. B. "Slippery Hips" Harkins is the best verbal broken field runner in the business. He is noted as being the number one tuffy to pin down.

But you would be hard to pin down if you were in his shoes. Part of his job is to

BERT HARKINS

be in charge of some odd ninety people who work as receptionists, studio guards, attendants, switchboard operators, porters, etc. He directs engineering traffic, acts as liason for special engineering requests from the sales department, interviews prospective employees, estimates special costs and does his bit in setting up the administration budget. Yes this is one man I'm talking about. Old P. B. comes in for a lot of ribbing in his job. But if you ask anyone if they would like to fill his shoes, they turn pale and run off like frightened gazelles.

He left a cozy nook up in master control to take his present job. When he did, it was a straightforward one of purchasing. But as time passed, more work was loaded on him until he became a sort of solar plexus for the great brain known as management. Of course, we all know the favorite place to aim a wallop is the solar plexus and old P. B. takes it all day long. He gets it from the boys upstairs and the gang below are snarling at his heels, too. So if he is hard to pin down, look upon it as a defense mechanism he needs in a tough job well handled. Motto fellers: Either be on the board of directors or in the union. All others lead short lives!

Yep, he's mortal. He was born in Elizabeth, New Jersey, in 1901. Prep School and Stevens Institute taught him his tricks. 1923 found Stevens handing him his cardboard hat and an M.E. Degree. From there he went to work with Public Service of N. J. in their research lab, and stayed with them until 1929, when WOR snapped him up. He started with us in the field and studio department, but stayed there just a few months and then was placed in Master. While in Master he aided in the setting up of what was then the Key station for CBS. They left after awhile and from what I hear they are doing ok in their new locale.

1933 and the offer from management to do the job of purchasing. Bertie snapped it up, little dreaming that it would grow into the phantasmagoria it now is.

Though he never pounded brass as a sparks or a ham he still managed to learn to copy morse on the sounder when he was eleven years old. His father, who was a railroad man, did the teaching. He still does well with the dots and dashes, copying 35 w.p.m. He keeps in trim by listening to L.F. on a Navy Surplus RAK-7 receiver.

His major outside interest is his wife and two grown boys, aged 16 and 18. Both lads are set to shove off for their fall term at Prep School.

There is a rumor to the effect that P. B. committed himself once. He was supposed to have said that the Arlington Time Signal was correct. However, during my interview I quizzed him on this, but he hedged.

Harold Hadden

Hax "Always a Bridesmaid But Never a Bride" Hadden, is one of ye ed's favorite people. I think he is one of the most intelligent people I have ever encountered. Most intelligent people are not necessarily kind. The mere fact that they can mentally set sail beyond their nose into this world of bitter conflicts make them natural setups to become cynics. But Hax is gentle and kind to all and when a Chief Supervisor is that way he really is a rare critter.

Since I took over the column I have given management a chance to speak its piece. That, incidentally, is a rarity in a Union Journal. Management encourages us to come over when opportunity beckons. They say they have a wise and all seeing eye when it comes to picking their men. However, when that eye peers at Hax, it seems to suddenly

HAROLD HADDON

get nearsighted. So, dear Management, when next it comes time to perform opportunity's nuptials, put on a pair of glasses and throw the bouquet right at Hax. You can't lose.

What of this favorite of mine? He was born in Manhattan in the year 1907. Grammar schooling was rugged. First grade took place right across the yard from his home, so any hopes for hookey were out. A change of address put him in another school down in Hell's Kitchen in New York's west fifties. To all you non-New Yorkers, rest assured Hell's Kitchen is no lawn party and Hax's tender years were busily occupied with ducking the gang fights. A move to Milford, Connecticut, put him in high school, and ambition's first amoebic form was twin celled with radio and photography running a close race. Photography almost won as one of his school chums had a dad who was a student under the great Steiglitz. However, when photography thought it was about to breast the tap, radio came zipping by in the form of an "AD" inviting him to start a career in radio. So off he went to the old Marconi school on Warren Street. 1923 found him leaving with a First Class Commercial ticket in his trembling fingers. That very day he spotted some towers being erected on one of Broadway's skyscrapers, and being always aware of opportunity, he sought out the Chief, a Mr. G. V. Willets. Ten minutes later the aborning WRNY had a maintenance engineer. From then on, he really learned radio and some old timers like Maresca, Candido, Carl Young, Bill Lynch and Bill DeMello, lent him a helping hand. Maresca also introduced him to the mysteries of shipboard operating when they both did relief duty on the old mail boat NURL.

Hamming came in for its share of interest with great goings on under the call W2AED. At that time he lived on Manhattan's upper west side, but woe of woes, in a DC house. However, he just up and bought himself an ESCO M.G. with 6000 plate volts and 14 for the filaments. A Telefunken 1 KW air cooled bottle in the old Hartley did the R.F. generating.

1926 and the offer of the Chief's job at the new WKBQ. The powers that be thought Hax was supposed to spew forth the necessary condensers and resistors like ectoplasm. "After all," they reasoned, "he was an engineer, wasn't he?" Strange but that type of thinking seems to still be with us.

Well, times brightened up when WOR came along with an offer of a field job. That bright event occurred in 1927 and two years later he was in Master. Promotions came along and 1935 found him well up the ladder of success with the job of Chief Supervisor. However, some one must have come along and stole the rest of the rungs as he hasn't been able to climb since. One thing I'm sure of is that he is what you might call a deserving democrat who is always handed back an empty plate when there is a pie being cut up. Tammany Hall doesn't treat their deserving Democrats that way.

He has much good fortune to take the place of this disappointment. A lovely wife, growing energetic children, and a charming Jersey home bring him much happiness. He's lucky too, to be the owner of immense mental wealth. I'm sure he would be willing to share with anyone who recognized its value. Any bids?

N. Y. NEWS

By Gil McDonald

AFTER two years on the job, George Anderson has been forced to retire as editor of the New York NBC column. Effective this issue, I am taking over for NBC, Muzak, RCA-Victor Recording, and ABC, so please contact me at ABC/NBC room 558 whenever you have anything of interest.

Joe Miller transferred to television from the WEAF transmitter where he spent several years. WEAF loses a swell guy, but television gains one.

Bill Haerer was in Radio City the other day checking up on his pals there. Bill's out at WEAF too.

Al Horwath who did such a sterling job as New York Chapter Yearbook co-ordinator last year, has been re-appointed to that spot this year. He tells me to sound off as follows. "Hollywood, here we come. You beat us by a little last year, but we are getting an early start and expect to be on top this time." Get on the job and give AX a hand and incidentally make yourself a few bucks.

Joe Silva tells us he gets regular mail from Johnny Pawlek, Ex NY SE who is now on the coast. JP encloses several golf score cards with totals of 67, 70, 69, 68, etc., played by him on several California links. Joe says that's mighty peculiar goings on since JP used to caddy for him here in the east and he just couldn't be that good. Or IS that California wx as good as they say?

Gil Markle spends his time delving into gamma, D-72, over exposure, under exposure, fast film, slow film, and many other things photographic between trips to the attic to squint through his home made telescope at things ethereal.

Jim McNally is one of NY's busiest guys these days between teaching radio at the Radio Television Inst., and working the 4 to 1 shift here at NBC.

Some people have all the luck. Take Dud Connolly for instance. He came up from Bilboland, applied for a W2 call, sat back expecting W2QXX or something; what happens? Come the mail the other day with a brand new call. He's now W2DD. I know 70,000 guys who would give their right arm for a two-letter call.

On Nov. 1st, WEAF passes out of being and will thereafter be known as WNBC to conform with the network letters. They follow the example of WABC which was dropped in favor of WCBS for the same reason. Now if ABC could get WABC, it would eliminate a lot of confusion.

Ed Watkins soon expects to startle the electronic and musical world with a new electronically operated Vibratone Hammond organ speaker of his own design.

So much for NBC. Let's take a look at the ABC gang.

Jack Stoody bought a new house out in Rockville Center, L. I. also the home town of Pat Haines, Gil McDonald, Paul Gallant, Vernon Duke, Westy Westover, Carlos Clark, Charley Phelan, and several others. We are thinking of petitioning ABC and NBC to make Rockville Centre the summer Radio City. Jack is doing lots of reconstruction and says even he hardly recognizes it any more.

Bill Perry took his vacation in his native England and decided to stay over there for a while. At present he is on a leave of absence but we hope to be seeing him around the lounge one of these days soon.

Dick Berrien is finally settled in a new apartment after his July marriage. Belated congratulations and we all wish you and Betty all the best Dick.

Fred Moore is on his feet again but literally. After a two month siege of arthritis, Fred can once more put on shoes and hobble around from studio to studio almost like a two year old.

Bert O'Leary says quote Love that Long Island Railroad unquote. Bert rented a summer cottage out in Babylon on the Great South Bay and stayed there from May until Sept. 15th. Somebody forgot to tip him off that Babylon is 50 miles from Radio City.

Bill Simpson and Pete Narkon are really polishing off the DX on 20 meters (they say). Why I heard Pete working Ramsey, N. J., the other day! He said, "Aw heck, a guy gets tired of trying to make those foreigners understand English."

I would appreciate receiving some news from the transmitters at Pt. Washington, Lodi, and Bound Brook by the 25th of each month if possible. Til next month then, so long. Gil.

The Philadelphia Story

By E. T. Darlington

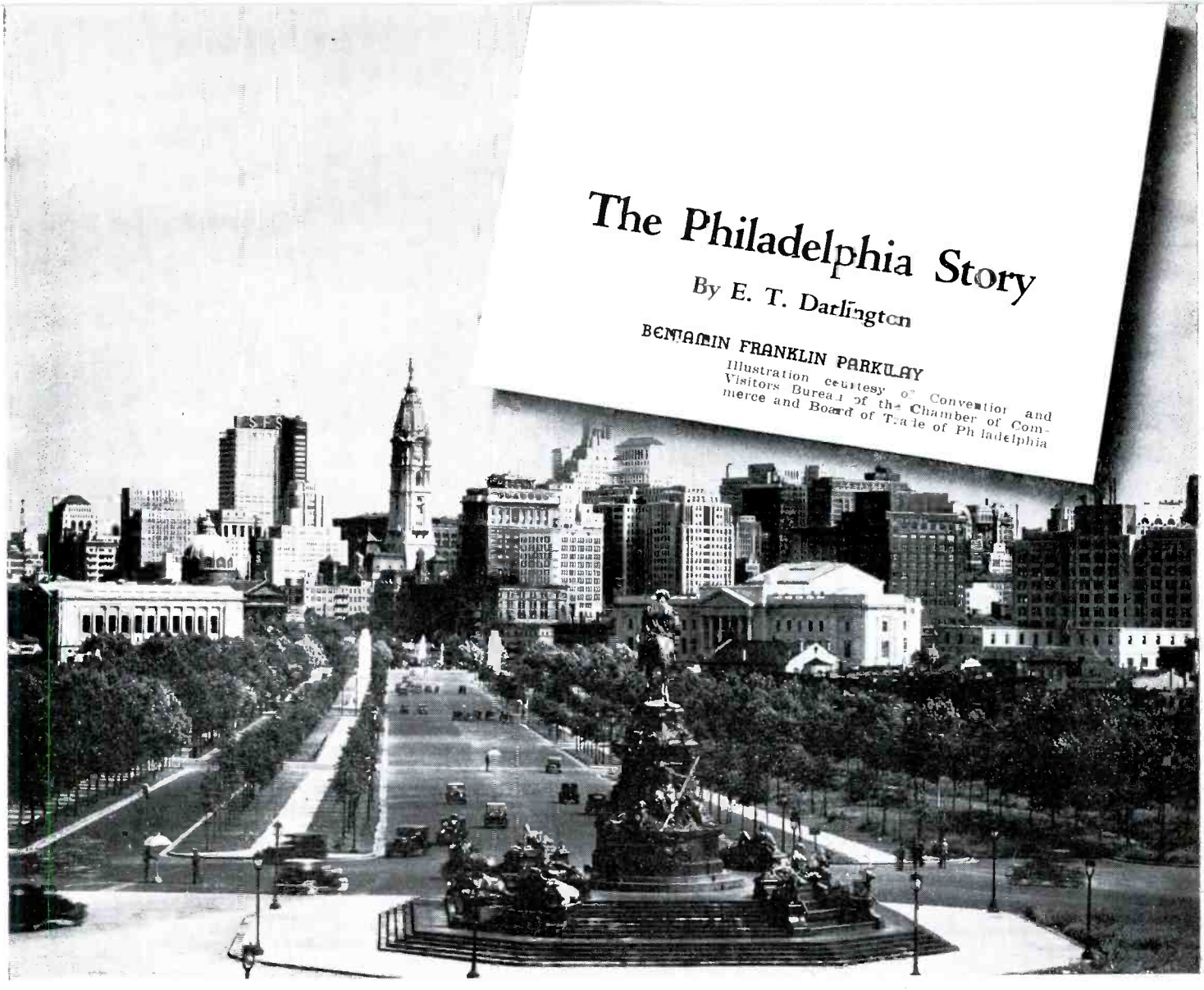


Illustration courtesy of Convention and Visitors Bureau of the Chamber of Commerce and Board of Trade of Philadelphia

PICTURED is Roy Nuss, KYW Engineer for past nine years, who was the first Philadelphia Chapter Chairman, prior to the NLRB's certification of NABET at KYW and WFIL.

Roy is currently a Chapter Councilman for KYW, and has played a leading part in negotiations with Westinghouse, U. S. Conciliator, and all KYW activities.

At WFIL, contract negotiations are at the moment proceeding peaceably enough. To the Company's first counter-offer on wages, a ridiculously unrealistic figure, one observer proposed that the station, owners of the Philadelphia "Inquirer," might at least offer a newspaper route to each engineer, if they expected the scale to be in the least attractive!

The boys at KYW are experiencing, in various degrees, an ailment known as picket-line fatigue. WFIL boys are supplying occasional relief, either on lunch hour or on off-time. The two outfits are only four blocks apart.

Dick Delp, away for year and half on extended sick leave, plans to be back on job before end of September. Doctors say the ticker is now in better shape.

Along Passyunk Avenue, out of the 10 billboards adjacent to the entrance road to FIL's AM job, no less than 6 signs extol the merits of competing air-conditioned Funeral Parlors! Write your own gag for that one. But after toiling all day over a hot transmitter, many's the guy who heaves a sigh of envy for the lucky "stiffs."

Well, the WFIL annual picnic was attended by just about everybody free to go . . . weather was coolish; the gals appreciated their coats, and few were hardy enough to venture into the swell pool . . . Manufacturers' Country Club, where Pres. Clipp was host, a beautiful and ideal setting . . . Bill Neill and Geo. Koehler did a round of 18 holes . . . Frank Kern and Jim Stewart gave "lessons" to Ethel Case, on the putting-green . . . Irv Mitchell awed the ladies, and surprised the boys, with some basso-profundo renditions; as did Pat Lynch with piano ramblings . . . the irrepressible Maxie Solomon promised everyone a 40% raise, retroactive to 1939; he said it in the boss' presence, so must be true! . . . bridge, gin-rummy, quoits, elbow-bending, gossiping, more elbow-bending, and singing, were the most frequently patronized diversions . . . our regrets to the fellows who had to leave before the group photo was taken . . . All in all, a pleasant, relaxing time was had by each staffer and their guests.

Mary Biddle, WFIL Woman's-programmer, pulled a modern yankee-doodle t'other week, when, placing a feather in her cap, she rode into town riding on a Helicopter. Major Seversky delivered 3 such transports to a local airport, landing them first in the heart of the city for the Mayor's blessing. The

WFIL PICKNICKERS
(Seated left to right) Dick Seitz, Charlie Colman, Jack Schantz, Ed Darlington. (Standing) Pat Lynch, Jim Stewart, Bill Neil, Frank Kern.

Major was later interviewed on Mary's program.

KYW Production-man Fred Karch has been named director of the Neighborhood Playhouse, well-known Philly theatre group.

The Studios of WFIL and KYW will again be used as classrooms for The Junto. Benjamin Franklin started this "Fun in Learning" idea back in 1727. It was given a rebirth in 1941, and is today beginning its 13th Term. 81 varieties of subjects are taught in these nominal-cost Adult Education classes. Radio Acting will be taught by John Scheuer, WFIL Production Director, and Ruth Brierley, Radio Ass't to Board of Education.

The staff's sympathies go to Mr. and Mrs. Roger Clipp, for the speedy recovery of their son, Samuel, in Presbyterian Hospital.

There are plenty of platter-spinners who wish the recording industry would adopt Ralph Ward's bright idea: providing for a "beep" (infinitesimal shot of tone) to be recorded, say, approximately one turn ahead of each ET's live portion. It would benefit both the station and the disc-jockey; eliminating the urge to back-track when cueing (with its eventual scratchy results and shortened life), and be a panacea when time is short and you run into some of those discs that begin with 7 or 8 dead turns.

Not to be outdone by Lew Lehr's (ABC) interview of Rosie the Bear, (Life, 8/19)—Tom Moorehead, FIL's Sports Commentator, gave it to the fans "straight from the horse's mouth," when Roy Rodgers brought his famous hoss right up to the 18th floor Widener Bldg. studios. Needless to add, it made the flock of kids in the visual audience quite trigger-happy. That Friday the 13th jinx nearly worked, when Trigger skidded on the waxed studio floor; but Roy's crew saved the day. (The jinx was yet to win, however, when, that night, Jane Greeley, star rider in his Rodeo at the Arena, mysteriously collapsed after her broncho-busting contest, and never recovered).

Roy and the Sons of the Pioneers also made two guest appearances in KYW studios, plugging and building up a potential audience for his new NBC show scheduled to premiere in October.

Wedding bells rang out for KYW Announcer James McCann, who married Mildred Brown of the Wellman Agency. The ceremony took place in Villanova, Pa.

Not only Philly, but all broadcasters can take pride in the glory attending the exploits of veteran radioman Lt. Col. Frank J. Shannon. Not content with having done his stint as radio-gunner in World War I, during much of our recent fracas Frank had charge of Army Bomber Communications at Guam. More recently, he helped man the B-29 "Dreamboat," that made history in its non-stop flight from Guam to Washington, D. C.

Back at broadcasting only a couple of months, he was recalled into active service to prepare the radio gear and make the initial 10,000 mile, 45-hour non-stop flight from Oahu to Cairo (via the North Pole), in the Boeing Superfortress "Pacusan." In the words of Chief Pilot Col. Clarence Irvine, who hand-picked the crew: making the North Pole trip without Shannon would be "like fielding a football team without a left end." Many happy landings, F. J.!

Going the rounds these days, in search of news, leads to the inevitable question: "What's KYW got that WFIL hasn't?"—particularly when we run across former FIL'ers like Ben McDonald, now Gen'l Sales Mgr. for WRS; Roy LaPlante, Production Dept.; Musical Arranger Al Boss; "Col. Bill" Gallaher, Dir. of Education; plus old-timers like Engineers Ed Stenzel and LeRoy Wolfe. One exception is Bill Harvey, who found the announcing pasture at FIL 'greener' than at KYW.

Our idea of time fascinatingly spent, is to sit back and listen to George Schisselbauer (WFIL-MCR) relate the 1,001 experiences and observations he fell heir to, as the result of spending two weeks of his vacation in Bermuda. From the time he took off from Baltimore, via British Airways flying-boat, it seems there was never a dull moment; and George has such a masterful way of painting with words, that it's a pity he couldn't be persuaded to write a personal article.

He had the good fortune to arrive there the same day as President Truman's yacht Williamsburgh; met practically all of the U. S. official entourage, and renewed acquaintance with Mutual's William Hillman and ABC's Bill Coyle; (George being an ex-newsman himself).

Unlike musical-clocker LeRoy Miller, who spent his honeymoon in Bermuda last May; George's trip there was entirely unpremeditated—he having asked for a ticket to Mexico City! Being more considerate of their passengers' "tummy," than of their corporate income, American Express suggested an over-water flight as more comfortable for a novice, than the more bumpy cross-country kind.

His fluid spiel about the wonders and incidents of the trip, would do the Hamilton-St. George Chamber of Commerce's heart good! Understand Pan American Constellations now make the trip from N. Y. in 2½ hours. That's for us!

Among vacation items, we hear that KYW's Jack Wynkoop visited Richmond, Va.; Geo. Mayer spent his'n fishing in the Atlantic; Carroll Roder was heard from as he touched Schenectady, Boston, Saratoga Springs, etc.; Ed Stenzel stayed at home; Ray Wilkie was set to drive to Florida for a 3-wk's stay, but the strike may have changed said plans; Walt Wilson utilized his to visit Springfield, Ill., and then on to Texas.

At FIL, Dick Marshall cabin-cruisered in the waters around Lavallette, N. J.; Ray Rodgers believed to be up in N. Y. State; Bill Neill writes from Ocean City (N. J.); while Charlie Wrigley spent the time at home, building a garage.

While the new rule, that the cute femme "motormen" on FIL's Widener Bldg. cars may no longer converse with passengers, hasn't assumed the proportions of an international incident; it definitely assails one of the favorite indoor sports of those making the 18-floor ascent. (Did one of the gals speak too familiarly to some exec., when he had an important client tagging along? Watch it, kids!) Say what you will, no one can give you that certain "lift" like an elevator-operator.

This Report Comes To You By Way of San Francisco

By Jack Van Wart

YOURS truly just returned from a much needed vacation which took him all the way to Texas by way of Arizona, New Mexico, Colorado, Utah, and Nevada, a total of 4650 miles. The only regret outside the fact that the time was naturally too short was the fact that the wife does not drive. When I returned I found that some of the fellows had not done as planned on their vacation. One was Alan O'Neil who got out of town for two days only. The rest of the time was spent building up his new ham rig. (He sold his Calif. kilowatt). All the hams are busy these days. The fellows that are on the air are, Ed Parkhurst, MCD; Russ Butler and Warren Andresen, studio; Bill Roddy, Hugh Turner and Herb Haley, announcers; Glen Hurlburt, artist; and at the KGO XMTR, Herb Kramer and Jim Blanchett are sending out CQ's. About 25 of the fellows bought the BC 375 Aircraft transmitters from a war surplus disposal company for a very reasonable price. Some intend to put them on the air as was; others intend to remodel them, and still others bought them for the parts in them alone.

Bob Salle is still racing the weather man in an effort to complete the remodeling of his newly acquired home before the rains start.

Harry Jacobs and Clark Sanders were away last month in the Northwest for football pickups and Steven spent a couple of weeks in Seattle and Portland for the pickup of the Standard Hour which was originating in those cities.

Yours truly is quite proud to be a member of the crew of a sailboat racing in handicap division 7 on the San Francisco Bay waters. The boat, the "Volante," came through with flying colors this season winning six out of ten races entered. The honors earned were the Bay Championship, the Windjammers race to Santa Cruz (a 90 mile ocean race) and the Flood Trophy (best record in three races; the Vallejo race, the Farrollone Island race and the Lightship race). I hope it doesn't happen often but one has to boast once in a while.

The San Francisco Chapter was host to President Powley on his recent trip to the west coast. He was met by Chapter Chairman McDonnell, Syd Blank, Alan O'Neil, Russ Butler, C. T. Stevens, Elma Oddstad and George Irwin. Monday night there was a dinner and chapter meeting held in the San Francisco Press Club. We had as an added feature, a report from the Athens Chapter of NABET. This is a chapter organized by the local chapter and the report came as a complete surprise to Mr. Powley. We were all very interested in what Mr. Powley had to say regarding the organization of additional chapters in NABET and also his detailed accounting of the expenses involved.

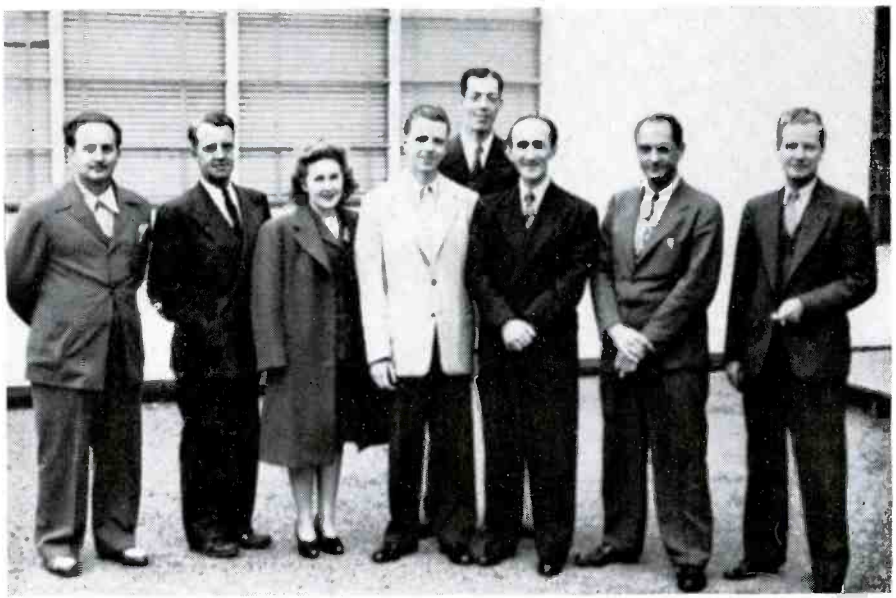


Foto by Lee Kolm

The welcoming committee for President Powley upon his arrival in San Francisco. (Left to right) Russ Butler, C. T. Stevens, Elma Oddstad, Alan O'Neil, Chairman McDonnell, Syd Blank, President Powley and George Irwin.

NEWS OF BALTIMORE

By Alex Beauchamp

IF ONE were to sum up the many customs that have made this land, "Our Country" the greatest nation on the face of the earth, none would be as great as Thanksgiving. A day set aside, by the President, to give thanks to God, "after one's manner" for the blessings bestowed upon us during the year.

We have come a long way from the first thanksgiving; today, it's no more than a form. I don't mean to say we are not thankful, but we are more thoughtful of the day and the festive activities in which we are the willing participants, or the enthusiastic spectators of: foot-ball, fox-hunts, quail shooting—listening to the rabbit-hounds giving chase to the scared cotten-tail, until it's in the range of your gun. Last, but by no means least, the feast: with rich browned turkey, stuffed with oyster dressing, cranberry sauce, mince pies, hard cider, red wine, and oh yes, don't forget the bicarb.

Yes, we are all thankful to be living in a free country. A nation, where the lowest born, can rise to the highest honors, bestowed upon man. Where it's every man's prerogative for the pursuit to happiness—to choose his own destiny.

Let's travel back to the first Thanksgiving day, the Pilgrims celebrated in New England. They had much to be thankful for. They had made friends with the Indians, reaped their first harvest, and had erected their first homes, in the new world. All this was accomplished—yet there were many shortages. Just think of it! There was none of the tools and implements we have at our disposal. The fields were cultivated with spades and hoes, shelters were built from trees of the forest, cut and hewed, with the axe and the adz, fitted into place with bare hands. Fireplaces were made from mud and stone . . . no stoves or central heating systems in those days. There were no department stores where the housewife could shop—their meager clothing and furniture were hand-made.

With all this frugality—those people were thankful. Not only thankful for the day they had set aside to give thanks, but thankful that their lives had been spared, and they had come through the first hardships in the new world. They were also thankful that they had visions and dreams of the future. Of great cities being built all over the land. Industrial centers—great strides in arts and science—and many networks of communications. Yes, our Pilgrim Fathers perceived the many advantages we have become accustomed, in our day.

Like the first Thanksgiving in New England, this Thanksgiving in 1946, we have lots to be thankful for. The war has ended and peace is in the making. There is need for much housing, as the building program is lagging far behind. We need more production in food, and the many articles that were curtailed during the war. We have the

(Continued on Page Twenty)

BALTIMORE (Continued from Page Nineteen)

tools and the knowledge to accomplish this, and any project we undertake. Then, why not exert every effort to renew our faith in God and our fellow man, and be thankful we have been spared . . . to build again, tomorrow.

WCBM News

By Larry Taylor

After the shellacking I received from Alex, in the past issues of the journal, I figure that I should get something in this issue or get my ears cut off.

It seems that things at WCBM are rather quiet. That is however, except the party given for the entire staff at the Hillendale Country Club. The party started in the early afternoon and we were invited for a swim. Several of us got to the Club in time, but only the more hearty braved the water, for the old thermometer took a nose-dive and gave the usual goose pimples upon goose pimples. The liquid refreshments were an enjoyable companion to the wonderful food served by the inimitable chef of the Hillendale club.

Our famous Homer Todd, (Mr. Fortune) gave a Maryland style crab feast at his shore, (Dialing for Dollars) on the Magothy, on Sept. 21: more beer was consumed, and more crabs were devoured, than your reporter has ever seen.

W3DKE (Sam Houston) DX'ing and CQ'ing all over the 10 meter band, is trying to locate other NABET members, and chew the fat. (Balto Ed's note) We would like to know the culprit that perloined the suggestive recordings from the desk of Porter (water spaniel) Huston.

WFBR News

By Bob Briele

Checking over my notes—I find we have located the lost Bride-broom. You may remember last month we reported the wedding of Miss Charlotte Anna Fischer, of our program dept. Well anyway, Miss Fischer, who is not Miss Fischer any more, has returned from her honeymoon, and will henceforth be known as Mrs. Auley McClain Hamilton. Paul Ruckert, master control supervisor, is about to plunge into the sea of matrimony. We hope it will always be a smooth sea. Miss Gertrude Webb, secretary to Mr. Piree, national sales representative, announces her engagement to Mr. Reed Bainerd, of New York City. Gene Webster, and Ginny Pool, were secretly married last Sept. 7th. The newlyweds are vocalists on Club 1300. Best wishes, all of you.

Bill Kelly and Harry Boone, (what, no more nuptials?) retiring Secretary-Treasurer and retiring Chairman of Baltimore Chapter, received Schaefer fountain pen and pencil sets in appreciation of the fine work they did throughout last year.

Announcer Lonny Starr was presented with a son by his wife, on Sept. 26. Wife and baby are both doing fine.

TE Bill Doster just received his new

Hudson. Hope he doesn't put a crinkle finish on it too soon.

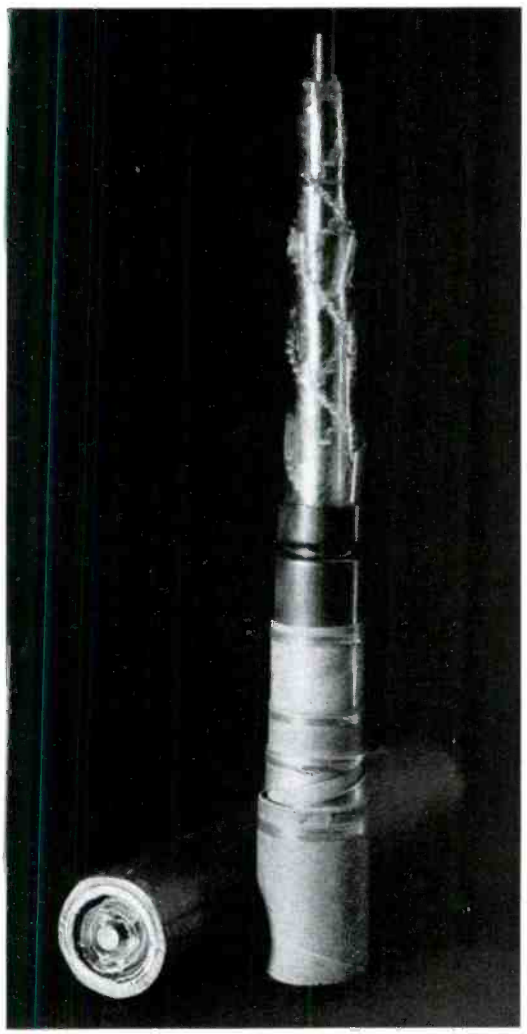
WITH News

The supervisor of evening productions, Bill Warren, was recently married to Miss Vivian Greenstone of New York City. The newlyweds are making their home in the Jefferson Apartments, until the housing situation is much improved. Then, who knows, there might be a little cottage, a white paling fence, and a little Warren or two. Good luck, Bill and Vivian.

GERMANY

(Continued from Page Thirteen)

point where fairly good quality pictures were obtained. They had developed fluorescent screens for radar and other devices in which a thin metal coating was applied to the tube over an organic coating which was later removed by heating. The metal coating permitted higher voltages for the cathode ray beam exciting the fluorescence, and resulted in a greater contrast range in the image.



A section of German coaxial cable, showing elaborate use of styroflex insulation to suspend the central conductor in the pipe.

Dixie News

By
D. Gordon McCrary

SINCE a number of our 'PTF staff are hams, even though they aren't all on the air at present, we can mention a few of the guys in the local amateur club and their activities. To begin with, one of our announcers recently returned from overseas service (Jim Reid, Director of Sports at WPTF) is quite a ham. Jim these days is spending all his time in a speaking role behind the mike. But it was not always so with Jim who has been tied in with radio in just about every form you can think of ever since his grammar school days. Back in the days when he had just finished Wake Forest College and was trying to break into the radio game, Jim was open to any radio suggestion in his home town of Asheville, N. C., and his first opening was for an announcer at WWNC. Like most of us he got started tinkering with crystal sets back in the days when broadcast radio wasn't too old. He still bears the scars he got climbing over the roof of the family home constructing his first aerial. At Asheville High School he was an enthusiastic member of the amateur radio club and passed his first amateur test to be licensed W4CJN at the age of 15 before finishing high school. His first transmitter was a pair of '45 receiving tubes in a push-pull oscillator operating on the 80 meter CW band set up in his attic. At Mars Hill Junior College in the Western North Carolina Mountains, Jim got permission to install his rig in the physics lab and there worked for the two years at Mars Hill, ending up with a 300 watt rig on 40 and 20 meter cw. Reid graduated from Wake Forest College in 1937 with a major in physics and there too, his amateur station went with him, transformed now into a 300 watt phone on every band from 80 to 10 meters. Back home in Ashville after college, Jim had a job in another line but his heart was still in radio and all his spare time was spent around WWNC. He learned the game inside and out and was all set for a junior position as a technician when one of the announcers heard him testing mikes, complimented him on his voice and offered him help in announcing training. And so it happened that a part-time announcing job opened at WWNC before the engineering position was available and Jim became an announcer. In 1938 he went to WFBC Greenville, S. C., and eventually became program director of that 5KW NBC outlet. In 1941 he accepted his present position as director of sports for WPTF in Raleigh, N. C. During the war Jim again went back to technical radio, receiving training in radar and aircraft radio. He spent two years in the Aleutians at various naval air stations as far west as Attu, which is about as far as you can get . . . And wound up as air navigation aids officer on the staff of the naval commandant for the entire Alaska-Aleutian area, working with radio ranges, radar navigation beacons and instrument landing systems for bringing in planes in the Aleutian fogs. And so these days when Jim Reid is calling a play-by-play account of one of WPTF's football games it isn't surprising that occasionally he may sneak a glance at the control man's VI meter next to him, although he knows these engineers at WPTF are going to keep the meters right up there. When the engineers at 'PTF work with Jim on a job, he lets everybody know who is there too. So come this fall and the football games, we will be putting Jim in the Carolinas and Virginia QSA5 and R9 plus. How about it fellows, do any of you remember him? He told me a few days ago he hoped to get old W4CJN back on the air as soon as conditions permit.

To go just a little further with this ham radio, Chaarles Wright, W4HVV has been doing quite a bit with 6 meters. I haven't been able to attend the last two or three meetings of the club so I don't know the latest on his activities. Bill Speed W4BIP tells me he has been working quite a few of the guys in South America on 20 meters lately. Yes our own Frank Colvert (TE) and W4DOP is still trying to get up an antenna. Someone keeps trimming them down as fast as he puts them up. Frank! Did you try staying up all night one night and watching out the window? Maybe some of these WPTF pilots are flying too low. Don't look at me either, because I haven't been doing any night flying. I have got to learn to land a plane without bouncing in the daylight first. Harry Wiggs—W4ANU has been out of town on a vacation and the band around these parts has been quiet for a while. That man can talk the horns off a William goat in no time flat and if any of you guys have worked him you know what I mean. I tuned over the 75 meter band while he was out of town and the first thing I heard was his mouth at the mike at W8VPO Beckley, West Va. Somebody said when they turned off their receiver on December 7th, 1941, the last thing they heard was Harry Wiggs and when they turned it on again after the war the first thing they heard was, Yep you guessed it, Harry Wiggs.

About Rochester

By
George W. Wilson

FOOTBALL!! It's a great game. And with that simple statement we start another column, or I should say, I start another column without the able assistance of Don Anderson. Said Anderson of WWHAM is still in Washington. I know he's there because I flew down to Washington and verified it. He told me he was leading a very proper life in the Capitol City. Now really—does the boy expect me to believe that? Does he forget I've know him since he was a little nit? Oh, well, for the sake of the record I'll believe him.

Very soon will come the day when WHEC will be putting out with 5,000 watts. For years now WHAM has been looking down on WHEC from it's 50,000 watts on WHEC with it's 1,000 watts. That situation will be changed. WHAM won't have to look down so far now. Anyway, WHEC has three towers and WHAM has only one. So with that, we'll get out of the small boy department. But before we do, let's mention that WHAM is gonna have a new Transmitter and location, and too, they are gonna have new studios. If I wasn't so doggone lazy I'd drag myself over to WHAM and find out more about what kind of a past their future is going to have.

Howie Mouatt—WHEC, our Sec.-Treas. is batting 100 per cent in getting in the local dues. We don't know how he does it, but it speaks well for Howie, and it speaks mighty well for the entire Rochester gang. Money, money, how we love that stuff. And speaking of money, how about an engineering talent fee on each show paying a fee to an announcer? We can dream, can't we?

Phoned Art Kelley, WHAM-er, who used to snoop for this column, and bent my ear around a bit of WHAM personalities news. Fred Ambrose it seems is champion No. 1 in the art of keeping the bugs out of stuff, and maintaining a smooth operations schedule. They also have another type of No. 1 man at WHAM in the person of Walt Malone, who recently celebrated by burning the mortgage on his home. That's one of those things we all dream of doing, but never are able to bring it to pass. And that guy "Bum" Holly WHAM-er—how does he get that way—and are we all drooling with envy—well at least I'm drooling, 'cause I like boats. I like 'em big and I like 'em small. This build-up, of course, is just to mention that "Bum" took an extended cruise on the Great Lakes this long past summer on nothing less than a private yatch. 'Nuff said. Elmer Grabb, WHAM-er, has moved into his new home, and is now taking lessons from Walt Malone on how to burn a mortgage. If you ever hear W2DOD (that's Elmer) he might give out with the results of said lessons.

Last month I said I'd have something to say about everyone in the Rochester Chapter. But that was last month when this edition seemed a long way off. Now it's dead-line—the last day of August—youse guys will be reading this in October (we hope), and soon it will be Christmas. Football!! It's a great game! 73.

—G. W. Wilson, WHEC-er.

EMPLOYMENT

NABET Members seeking employment will be listed in this box; contact the National Office immediately.

What's New?

By Jordan McQuay

To permit assignment of thousands of new calls to amateur stations, the FCC scrapped the old system of nine districts. New arrangement calls for ten districts with no state lying within two districts. A further reform: After present series of W calls are exhausted in any of the ten areas, a similar series will be started using the prefix K instead of W.

* * *

Two new thermoplastic cements have been announced by General Electric. Developed specifically for use in the manufacture of quartz crystals and loud-speakers, the thermoplastic properties of the new cements insure a clean, dry, and efficient union between porous and non-porous surfaces. The cement can also be used to bond iron laminations of an electric motor armature.

* * *

The important VT proximity fuzes—used by both Army and Navy—were constructed entirely at two RCA plants: in Bloomington, Indiana, and Camden, New Jersey. At peak of production, nearly 20,000 of the four-tube midget radar sets were constructed daily. For secrecy the project was tagged "Madame X." And next to the atomic bomb, the proximity fuze was the best kept secret of the war.

* * *

According to a recent NAB survey, broadcast stations in the U. S. employ a total of 6,628 technicians—with a dire need for at least 1,000 additional engineers, operators, etc. before stations return to peacetime or "normal" operation schedules. Of the grand total of 6,628 men and women—66 per cent hold 1st Class licenses, 20 per cent have 2nd Class tickets, about 13 per cent are unlicensed.

* * *

Smallest practical vibrator ever developed is now available to civilians. It's just two inches high, one inch in diameter; operates from low-capacity 6-volt storage battery. Developed by the Radiart Corporation, the vibrator delivers 200 volts d-c maximum.

* * *

According to Dr. Peter C. Goldmark, CBS tele engineer, the manufacture of transmitting and receiving equipment for high-definition color television has been in progress for nearly six months. General Electric entered into a co-operative agreement to produce receivers for use with CBS color system, assured that system and standards would not be changed for at least ten years.

* * *

Development of an electronic device—based on the principles of radar operation—now enables weather forecasters to plot the locations of distant storm centers across thousands of miles of ocean. Device is known as a "static direction finder," detecting the presence of static electricity in thunderstorms, cloud masses, or rainfall at incredible distances. System forms the basis of a new field of meteorology known as spherics—a contraction of "atmospherics." Equipment permits meteorologists to plot the locations of storms over large areas without the necessity of making on-the-spot observations of the weather throughout those areas. Equipment is comparable to the standard radio direction finder and radar equipment in that it uses directional antennas to determine the azimuth of received impulses. Such static impulses—which would normally be heard as "crackling" on an ordinary receiver—is displayed on the tube of a cathode ray oscilloscope. Position of the visual impulse on the face of the scope indicates the direction of static sources. Four stations have been constructed along the Atlantic Coast—at Red Bank, New Jersey, Gainesville, Florida, island of Bermuda, and near St. Johns, Newfoundland—the first chain of spherics reporting stations. Sets have a dependable range of 2,000 miles and are accurate to within two degrees.

A. F. Gain Along the Mohawk

By J. W. Gagne

In line with the news and views from the television gang we received the following by special messenger:

At the top of the first page it says—

Horton C. Mosher
51 Washington Road
Scotia 2, N. Y.

and then the following—

"Mr. Joe Gagne,
Journal Representative.

Hi Joe! Here's wat U wan'a know, from WRGB:

Dotty Martin asked me to drop you a line for her as she is very busy getting ready for the hitching of Jane Clark. On Sept. 1 Jane was married to Jack Wilcox at the home of the groom in Troy, New York. Jane joined the General Electric family during the war, serving first as studio engineer at WGY and WGFM. Later she transferred to the tech staff of WRGB where she met Jack who was a Cameraman on the program staff. Early last spring Jane transferred to the Electronic Sales Division and moved to Syracuse. This proved to Jack he couldn't get along without her and soon followed. Now we hope they will always be together with all the happiness any couple could have.

Jane's mother lives in Texas so was not able to get here to make the arrangements for the wedding. Dotty, the good friend she is, assumed those responsibilities and is to be Jane's Maid of Honor. Now we will understand what we mean when we say Dotty has been busy."

[Editor's note—"Perfectly."]

"Smitty, Crug, and Shay have been spending much of their time, with some of the boys from New York, installing a relay station at Hillsdale, New York. The very rush job they did this spring in order to bring us the Louis-Conn fight was very commendable. We are now looking forward to the relaying of more of WNBT's programs. I hope the transmitter correspondent will give Closson, Oley, and others credit for the good work they did also."

[Editor's note—Nothing was said the night your scribe finagled the dirt out of Bergman and Vert. How's about someone at south writing up the dirt each month around the 20th? OK? Then start now for the November issue.]

To continue with Hort's letter—

"We have two new members here at WRGB in Keith Mullinger and Chuck Vallette, both came up from radio test. Keith hales from Iowa, is a young fellow and darned good looking. We were wondering what some of the young ladies were waiting for when we learned he is about to get married."

[Editor's interruption here—Come on down to WGY now gals and see what there is here—you know we got a lot of new personnel here too—and it all ain't hitched yet either! . . . and if we do say so ourselves it ain't bad either . . .]

"Keith being a quiet chap we haven't been able to get much out of him. We do know this, however, he is a ham and is now operating his station W2PYO on 10 and 20 meter phone bands.

Chuck Vallette came from Philadelphia, Pa. We need not tell you what a swell fellow he is as he is already married. This summer he was awarded a scholarship by the GE so plans to return to school this fall. We understand he plans to attend Union College, here in Schnectady, so we shall not lose him entirely.

Jack Shay spent his vacation at home in Saratoga. We understand he did considerable fishing on Saratoga Lake where he has a boat. He invited us up to help him land some of the big ones but none of us were able to go, darn it! When not on the water Jack kept the 20 meter band hot with his station W2RNP."

[May I interrupt here gang again—seems the call letters are running in the R's now—Van Alstyne out at the transmitters has a real speedy call letter—W2RPM! . . . two revs per minute!]

"Paul Adanti took his vacation in Florida last winter where he did some fishing and made a motion picture on deep sea fishing. We understand he shot some 3,000 feet of film and we are looking forward to seeing some of it.

Well for crip sake we almost forget another of our gang, Jesse H. Cripe, who is spending a well earned vacation in home town of Goshen, Ind. Jesse and the little Mrs. are very proud of their little new daughter. They have just moved into a larger home so all of them will need a good rest. We'll have more about Jesse a little later.

Paul Ruckdeshall, hereafter called Rucky, has been having a grand old time with his galopy. He and his brother are the proud possessors of a 1921 Dodge. Any description I might offer would be highly superfluous. The first evening he brought it around for display some of the boys jacked up a rear wheel when he wasn't looking. Naturally we all gathered around to witness his departure after sign-off. It was a good show and finally the color receeded down Rucky's neck."

[Aside to South Schenectady—Remember the night Big Nick jacked up the wheel on the Guard's car and the spark plug bombs?]

"Welcome back Major Bill Cody. We are glad to have you with us again and congratulations on the good job you did for Uncle Sam in the Pacific and other places. We all shall miss you at the studio but how much Durkey, Schumaker, Lewis, and Billings will enjoy having you on the hill with them.

Our old fiend (I think Hort means friend) Don McIllwain was discharged from the sig corps with the rank of Major last spring. He accepted a position as salesman in the Electronics Department and is now in Cleveland. He often drops in to see us and we sure enjoy the stories he has to tell.

What have I been doing in my spare time? Well, among other things I have been rebuilding two German Mausers which a friend sent me from ETO. Now that they are finished if you know of anyone who has some ammunition for them, please let me know. If I don't get some 8 mm shells I'll have to use the Enfield sporter. Now if you will excuse me I'll run along and dig the old transmitter out of the attic and get it back on the air. Until you hear from me again—best of luck to all . . . sincerely, Mose."

To wind up this pipe of confusion (not peace!) there are two items I'd like to get youse guys and girls on—

(1) Is the title OK?

(2) Personality write ups.

With regard to the former, if you got a title, send it to me at the WGY studio. To the latter, we'd like to write up a short sketch of one of the gang each month. Best way to start is with the old timers. So, may we have a short piece of paper with your name and date of start here? Then we will come around and see you—OK? Don't put it off—stop right now, write name and date on anything, and put it in your wallet or pocket where you can buzz it over to me tomorrow or today, OK?

So, with big full moon of September coming over the top of building 36 we close flap on wigwam and steal silently away into the Helderbergs. We be NBC-en you next three-quarter moon.

—Chief Scribe, Joe Gagne.

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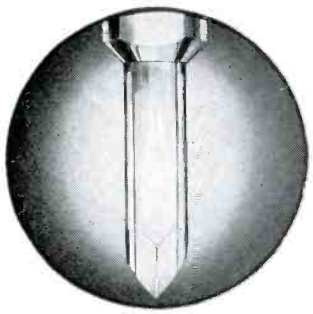

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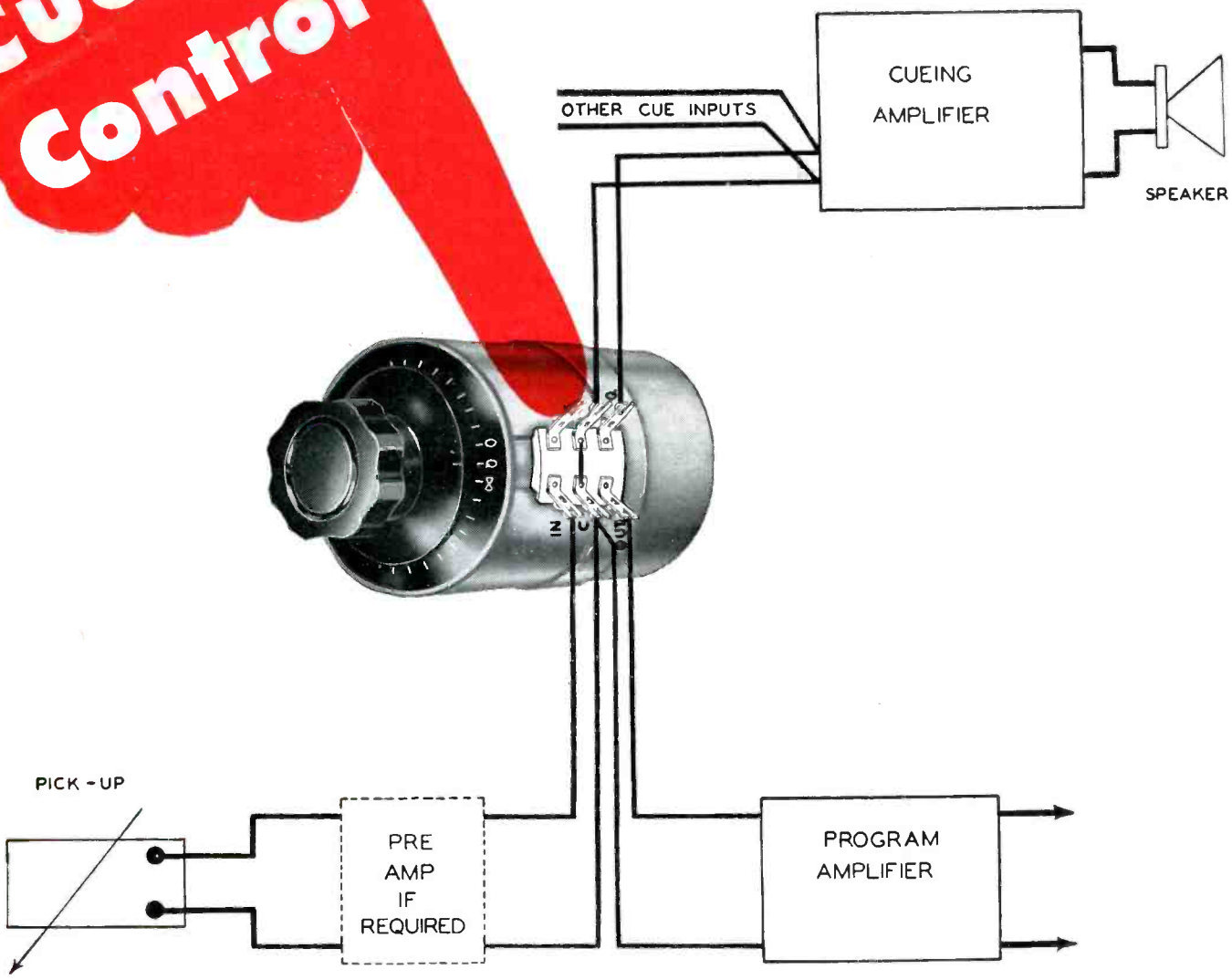

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