



Chief Engineer Ben Ackerman operating a mixer on the center control panel. (Left) These racks hold all amplifying and speech input panels associated with the three control units.

## WGST Installs New Studio Controls

Station WGST, Atlanta, Georgia, recently installed complete new studio speech input equipment in their new location on the ninth floor of the Forsythe Building. It was in October, 1938, that the decision was made to move studios and offices from their old home in the roof garden of the Ansley Hotel. The necessity for facilitating the move as well as the desire to have the most up to date equipment in their new studios led the owners of WGST to scrap all of the existing control system and install new equipment throughout.

All of the necessary amplifying equipment is of Western Electric make and purchased through Graybar. This material together with a control and switching system designed by Ben Ackerman, chief engineer, was set up in the control room located between the two main studios.

The amplifier setup includes nine 104A amplifiers, two 105A amplifiers, one 106 amplifier and seven 94 amplifiers. The 104A pre-amplifiers are supplied with filament and plate power from a Western Electric 15A rectifier, with provision for switching to the 105A line amplifier for power in case of failure of the 15A.

Three control panels are mounted on a horseshoe shaped desk, so placed that each panel faces the studio which it controls. In the upper left corner of each panel are four interlocking push buttons used for channel switching, providing all three panels with switching buttons for all circuits. Any control panel may be switched to any one of three line amplifiers, or all three may be connected to the same amplifier, making it possible to originate three programs at the same time. When a control panel is switched to a particular channel, the volume indicator on that panel is also

switched. These volume indicators, as well as those at the transmitter, are the new type measuring volume levels in "VU."

Each of the two control panels at the ends of the horseshoe, facing the two main studios, has mixers for its own studio only. On the center panel, however, the five mixer controls are for the announcer's booth (which the panel faces) transcription machines, network, remotes and a spare. The eight interlocking push buttons at the top right of this panel control the monitor speaker circuit. The operator may, by pushing the proper button, listen to the program on the air, one of two audition channels, the network, three other local stations or the remote control. Four speakers in the offices also have this setup, each speaker with its own volume control and 94C amplifier. These amplifiers are all in the control room racks and may be patched out if necessary.

The small panel to the left of the center control panel is the order wire panel. A call on any circuit will light the signal lamp over that line and operate a buzzer until answered. To the right is the program circuit panel. When a key on this panel is down the line is connected through coil, equalizer and pad to the remote relay and mixer. When the key is up the program line is connected to a test position where it is possible to connect it to an ohmmeter or to the telephone set.

The input and output of every circuit are connected through the patch board, providing maximum flexibility. There are eight microphone outlets in the large studio and six in the smaller one. These are so connected that any setup may be made without running mike cords across the studio. Some of the outlets

are in parallel, and all circuits are permanently connected to a pre-amplifier.

The studios are of the most modern design with slanting walls to cut down sound reflection. To reduce the transmission of sound through the observation windows the frames between the panes of glass are lined with sound absorbing material. The studios and control room have no outside windows and are air conditioned summer and winter. The exhaust air from the control room is drawn through the cabinet racks. This keeps the temperature at all points in the racks below 95 degrees Fahrenheit, prolonging the life of all amplifier parts, particularly the electrolytic condensers.

The installation of its new studios gives WGST a high fidelity system throughout, with a frequency response of 30 to 10,000 cycles  $\pm$  .75 db from mike socket to antenna and a noise level 60 db below 6 milliwatts, including studio transmitter line.

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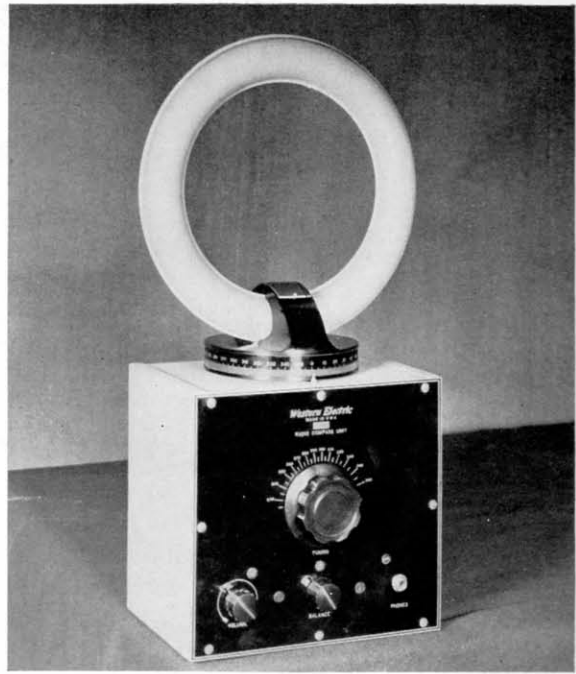
## New Marine Radio Compass Is Aid to Ship Navigation

To increase further the usefulness of its marine telephone equipments, the Western Electric Company has introduced the 50A radio compass unit which, in association with the telephone equipment, will permit radio bearings to be taken for determining the ship's position.

The compass unit consists of a small metal box carrying tuning and volume controls on the front and a loop antenna on the top. Power is obtained from the radio telephone system, and the loudspeaker of this unit is also employed. A jack is provided on the compass unit to permit a headset to be used instead of the loudspeaker if desired. A switch on the radio telephone set switches the circuits to the regular antenna or to the compass as desired.

The 50A compass unit covers the frequency band from 230 to 350 kc, which includes all of the marine radio beacons maintained by the U. S. Lighthouse service and located at strategic points on the Atlantic, Pacific, and Gulf coasts, and on the Great Lakes. By taking bearings on two of such stations, the ship's position may be determined regardless of fog or darkness. Also included in the band from 230 to 350 kc are numerous aircraft beacon stations operated by the Civil Aeronautics Authority.

Operation of the compass is simple. On installation, the compass box is permanently fastened in position, and the bearing scale on the base of the loop, which is adjustable in position, is set so that the zero gives a direction in line with the keel of the vessel. After a signal has been tuned in, the loop is turned to the position of minimum signal. The reading of the scale then gives the bearing in degrees with respect to the ship's keel. The true bearing of the station may then



Western Electric 50A Marine Radio Compass

be determined by the application of the ship's course obtained from the magnetic compass. The 50A compass was designed particularly for use with the Western Electric 227B Radio Telephone Equipment.

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## Architectural Competition

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may be accomplished for the largest number of stations.

"The competition is wide open to all architectural students in every school and atelier in the country," stated Mr. Teegan. "Furthermore, the rules of the competition have been made as broad as possible in order to stimulate original thinking and to give the greatest scope to the design possibilities. Students may render their designs in any medium, whether it be drawings, complete models in cardboard or clay or any other way best suited to delineate the features of their particular design."

"The Western Electric Company welcomes the opportunity of sponsoring the competition and offering its fullest cooperation to all students in the contest," stated Mr. Frederick R. Lack, manager of the Specialty Products Division of the Company. "The engineers of Bell Telephone Laboratories who design all broadcasting equipment sold by our company have for many years realized that greatest value of the equipment and the best possible broadcasting job can be achieved only when there is a perfect wedding of equipment and the building which houses it. Modern broadcasting is an intricate, specialized undertaking calling for unusual facilities and requirements. If this competition results in new designs offering greater functional harmony it will be justified."