

RADIO INTELLIGENCE

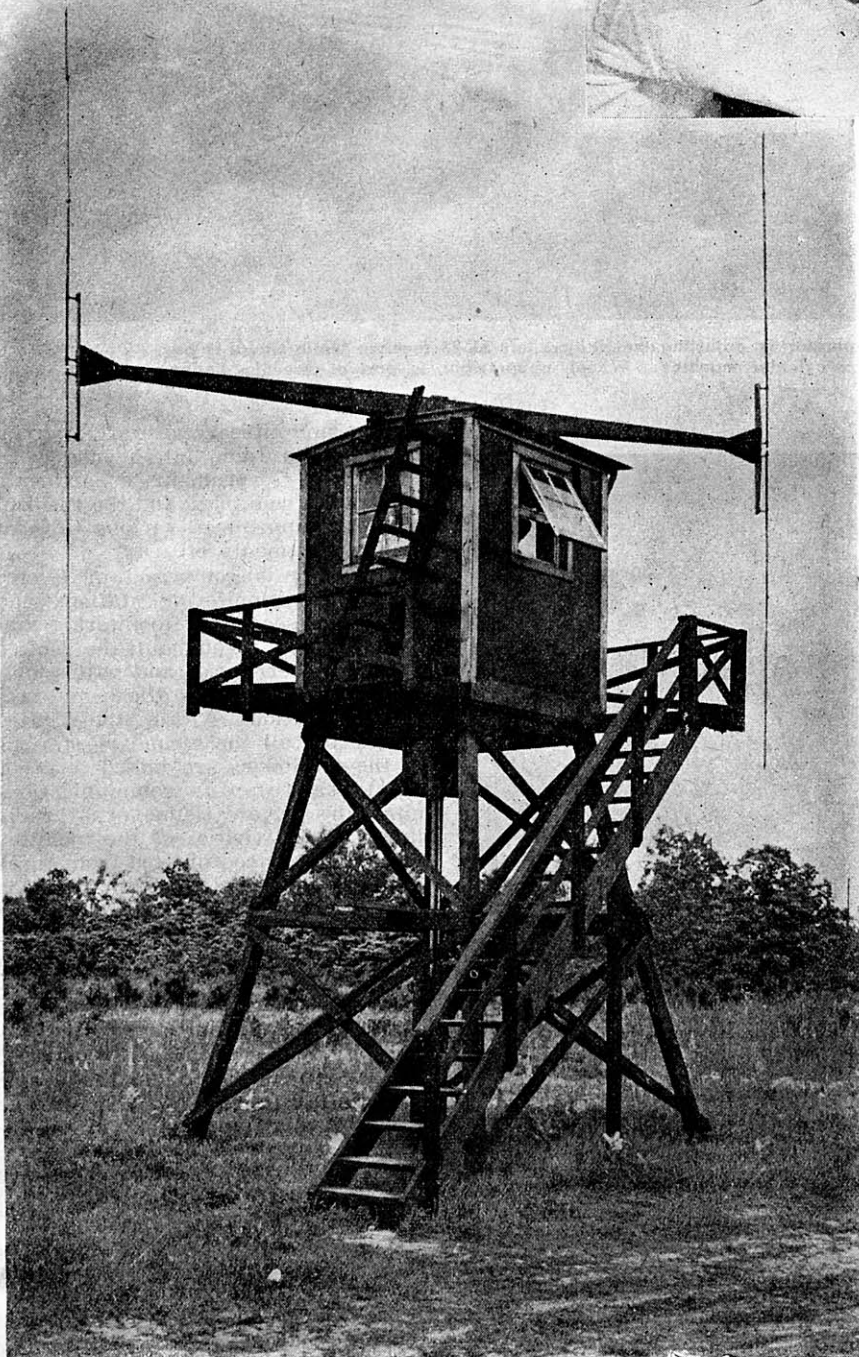
By **OLIVER READ, W9ETI**

Managing Editor. RADIO NEWS

An eye-witness report on the little known technical aspects of the RID.



Adcock direction-finder — so critical in balance that a spiderweb across the transmission line will upset calibration. Operator is K. W. Miller, W5AOC, Asst. Supv.



THE Radio Intelligence Division (RID) of the Federal Communications Commission is one of the government agencies least known to the American public. Up to the present time little information has been forthcoming showing the important functions of this non-military unit. Highly important in peace—the RID has been performing one of the most essential tasks in wartime—ridding this country of illegally-operated radio stations, most of them by spies of foreign powers. Furthermore, they have saved hundreds of lives by locating lost aircraft. Millions of dollars worth of vitally needed planes have also been saved from an untimely crack-up.

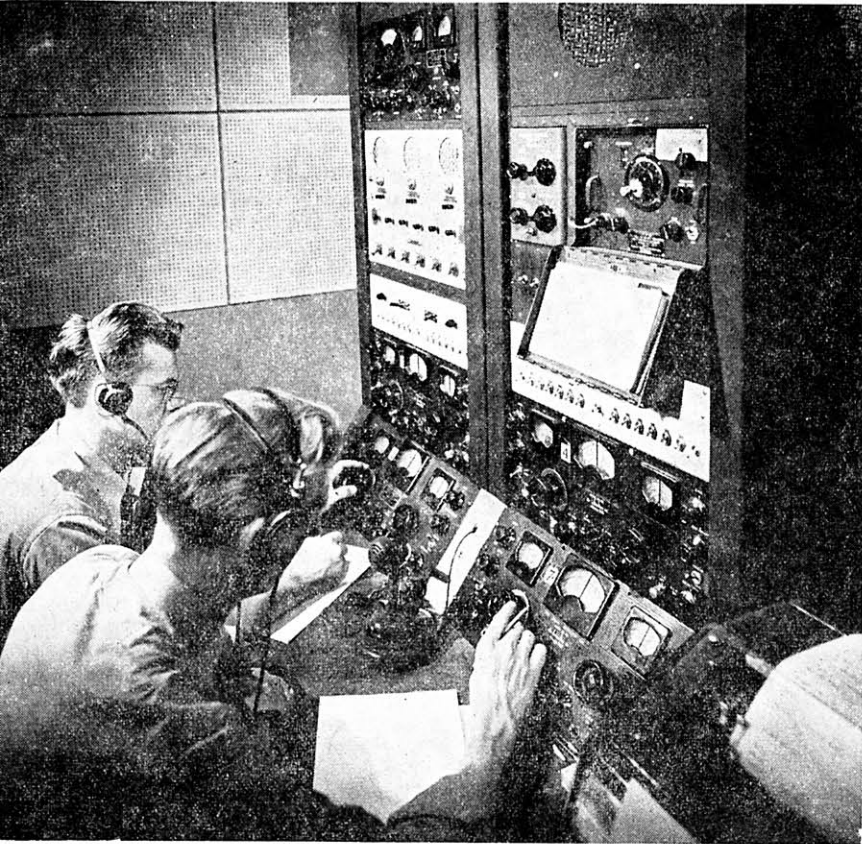
The RID was organized several years ago by George Sterling, W3DF, who still directs all activities as Chief. Assisting in this important work are Charles Ellert, W3LO and Stacy Norman, W7OK, all prominent radio amateurs.

Principal functions of the RID include: Maintaining a continuous policing of the entire radio spectrum to insure against unlicensed transmissions and taking appropriate action to suppress such operation; locating and eliminating interference to licensed stations; maintaining a continuous surveillance of licensed stations in cooperation with the Field Division of the Engineering Department, FCC; making intercepts of foreign non-military radiotelegraph traffic for the use of other civilian agencies of the Government, and recording foreign broadcasts for the Commission's Foreign Broadcast Intelligence Service.

Other important activities are performed by the members of the RID. Included are the rendering of emergency direction finding service to



Interior of RID mobile unit. Operator is adjusting the Hallicrafters SX-28 receiver while signal is being transcribed on Telecord wax cylinder machine. Wheel, upper right, is part of direction finder.



Operators of the "ether patrol" searching for a lost aircraft (LOP) from the Cruising Room at Allegan, Michigan. Receivers operate continuously day and night.

civilian and military aircraft, training personnel in radio intelligence work for other Government departments and foreign countries, and the furnishing of equipment to various Government departments, etc.

The RID is comprised of twelve primary monitoring stations and thirty-two secondary monitoring stations located throughout the United States, its territories and possessions. All of the primary stations and secondary stations within the United States and all the secondary stations in the territories are linked together for instantaneous communications either by private tieline or by radio links. The activities of the monitoring stations is coordinated from three *Radio Intelligence Centers*. Work on the East Coast is coordinated from the Center in Washington, D.C., work on the West Coast from the Center at San Leandro, near San Francisco, and work in Hawaii from the Center in Honolulu.

Each of the primary monitoring stations is located on a large tract of land to permit erection of extensive receiving antennas. These stations are also located so as to be as far away as possible from electrical interference which would be experienced in or near cities.

A typical primary monitoring station, located near Allegan, Michigan, was visited by the editors of *RADIO NEWS* in order to get firsthand information on its activities and to meet the personnel of the RID. Supervis-



A "ham's paradise." Any type of signal may be recorded in the Intercept Room on tape, wax cylinders, or paper discs for observation and reference.



Transcribing copy from Boehme tape. Operator controls speed by foot.

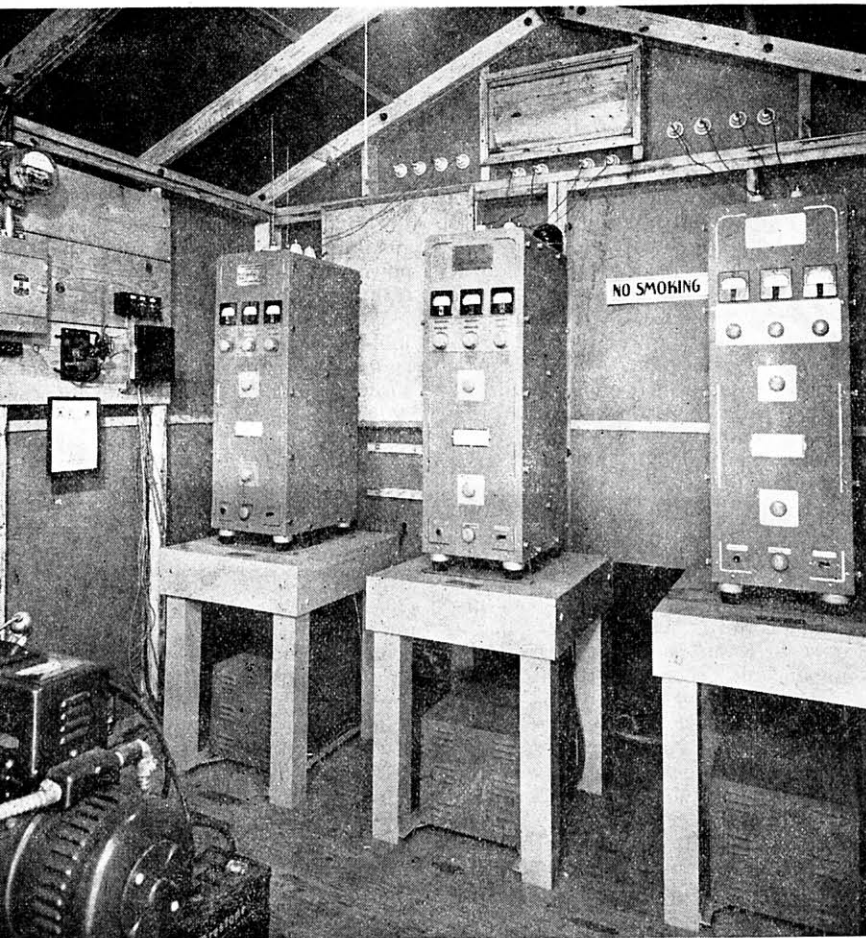
known as a balanced H type and is shown on page 25.

A simple analogy to show how this direction finder operates would be the familiar battery operated portable radio set in a carrying case. These receivers use a built-in "loop" for picking up the signal. The loop consists of a number of turns of wire wound on a narrow rectangular framework usually fastened within the carrying case, and in some cases, mounted on the outside but always in a vertical position. Our readers are familiar with the fact that such a receiver has marked directional properties and that some stations are heard with much greater signal strength than others. These discriminations against a certain station may be altered by changing the position of the loop. This is basically the function of the direction finder.

If a pointer is attached to the loop and is made to traverse a circular scale graduated in degrees (marked from 0 to 360 degrees) it is possible to ascertain the true direction of a given radio station by noting the position of the pointer with reference to the scale when a null is obtained. This null is the point where the signal is no longer heard and occurs when the loop is "broadside" to the arrival of the signal.

In using a loop direction finder, the scale reading opposite the pointer is determined not only by the direction of the radio station with respect to the location of the loop but also by the position of the zero graduation on the circular scale. If the zero mark or graduation is placed so that it coincides with true north (which can be done either by revolving the scale or the object to which it is fastened) then the radio bearing obtained will be with reference to true north. It is advantageous to do this because the radio bearing can then be projected on a suitable chart or map in much the same manner as plotting a ship's course.

If only one direction finder is used, there is no way to ascertain the exact
(Continued on page 38)



These three RCA transmitters are operated by remote control from the Cruising Room. They are used for emergency communications to other primary stations.