

# FACILITATING AIR-TRAFFIC CONTROL

*Well-planned Radio and Other Services in Dunsfold's New Control Tower*

**T**HE Air Ministry airfield at Dunsfold, near Godalming, was until recently the operational base of Skyways, Ltd. Now it is occupied by Hawker Aircraft, Ltd., and will be used for flight testing—their airfield at Langley being on the small side for modern fighters, and inconveniently near London Airport. Sea Hawks and Hunters will, of course, be the principal users of Dunsfold in the months to come; the second Hunter prototype flew there on May 5th last.

Production flight-testing is likely to demand much greater flying intensity than has been common at Dunsfold in the past. To permit this, a new control tower has now been built, in which is housed some of the latest radio equipment, planned, supplied and installed by International Aeradio, Ltd.

The controller is provided with three ground/air V.H.F. channels, two of which provide automatic D/F bearings. In addition there is a further V.H.F. channel for communication with the fire tender and direct telephonic communication with key points—in addition to the normal airfield telephone facilities.

The air-traffic control desk has been specially designed by I.A.L. to ease the controller's task. The central panel provides local meteorological information, including time, barometric pressure, and wind speed and direction, the two latter indicators being driven from an anemometer-head and wind-vane mounted on the tower roof.

On each side of the central panel are mounted loudspeakers for the Pye V.H.F. receivers. No volume controls are necessary, the amplifiers being so designed as to provide constant output volume irrespective of input signal strength. For channel identification, the controller has, close to his left hand, four luminous indicators with the relevant frequency engraved on the cap of each. When a channel is calling, the appropriate indicator lights up; for transmission, the controller has merely to depress the required indicator and speak into the table microphone.

When two aircraft call at the same time on different frequencies, the controller can cut out reception on one channel by lightly pressing that indicator; he can then talk on the other frequency without interruption. A fifth indicator gives broadcast facilities which can be used in the event of emergency.

Two telephone handsets are vertically mounted in the desk. One of these is connected to the airfield exchange for normal calls, while the other can be linked directly with selected numbers—such as the briefing room or fire station—by operating a telephone-control panel mounted in front of the radio controls.

Directly in front of the controller is mounted a map, protected by plate glass and covering a radius of 70 miles from Dunsfold; this is for use during controlled descents and homings. Upon a second map, mounted on a sloping panel on the left of the desk, can be plotted the D.F. bearing of an aircraft from Dunsfold, Hatfield, and Chilbolton, in order to provide a rapid fix. To the right of the controller is an aircraft-movements board on which can be checked the progress of all Dunsfold-controlled aircraft. The extreme left-



hand side of the desk contains a panel for the control of all airfield and approach lighting.

The large circular indicators on each side of the controller present, simultaneously, two sensed bearings on two different frequencies, supplied by the Marconi AD.200 V.H.F./D.F. equipment. The D.F. aerial assembly is mounted on a pivoted tubular mast, the main receiving sets being housed in a small building on the airfield; from this building the tower indicators are fed by two pairs of telephone lines. In the tower are two remote-control consoles containing demodulators and phase-comparison units which provide the voltages to operate the desk indicators. The bearing can be presented as a QDM or a QDR, the selection being indicated by a lamp beside the desk indicator. This AD.200, incidentally, is suitable for use with an aerial system up to 30 miles from the control tower.

The air/ground radio equipment is installed in twin lockable rack cabinets. Both the Pye V.H.F. transmitters and receivers are crystal-controlled, the former with a 10-15W output on the civil aviation band and the latter being of the double superheterodyne system, with a noise-compensated, carrier-operated muting circuit. The two radio cabinets also house the constant-volume auxiliary amplifiers, together with microphone amplifiers (which incorporate relays for switching on transmitters and for other functions), and power units for operating relays and indicator lamps.

*Principal user of the International Aeradio installations at Dunsfold will be W/C. B. F. Coupman, the Hawker senior air-traffic control officer. He will be assisted by W. D. Willis, seen with the Aldis lamp in the background.*



*On either side of the control desk is mounted a remote indicator presenting the controller with a sensed bearing, the two units giving different bearings on different frequencies. They are fed by the Marconi AD.200 V.H.F./D.F. sets, the remote-control consoles of which are illustrated on the right.*

