

FOR THE RECORD

"THE knee-pad and pencil have for very many years been indispensable to the test pilot; but there is little doubt that, as observations become more and more detailed, and the pilot has to study the behaviour of an ever-increasing number of components, accessories and services, some form of 'automatic notebook' must be the logical successor to the aforementioned two simple tools of his trade."

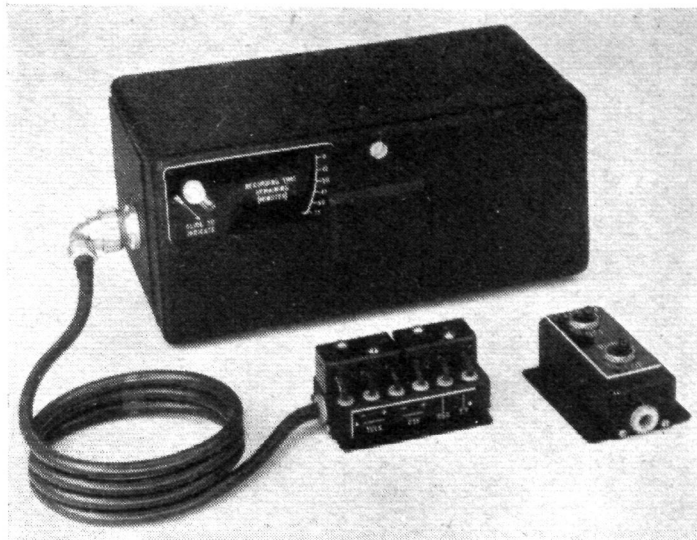
With these words, in April 1951, we introduced a description of an airborne voice-recorder for test pilots, and we ended with the remark that "... the full possibilities of automatic wire recordings have yet to be discovered. The medium is now available, and the next few years will doubtless see it well tried, not merely as an aid for the test pilot alone, but for many jobs, including (with intercom connections) crew-training work."

The particular equipment was developed by Wirek, Ltd. (a subsidiary of Boosey and Hawkes, Ltd.) in conjunction with Hawker Aircraft; now, after two-and-a-half years' further development, these recorders—manufactured by the electronics division of Boosey and Hawkes, at Edgware, Middlesex—are being used for flight-testing by most of the big-name aircraft and engine firms in the British industry. The manufacturers state that there have been four occasions on which an experimental aircraft has been lost with one of their recorders on board. From these incidents the salvaged recorder has been played back to provide important clues to the causes of the mishap. On two of these aircraft, say the firm, the fire which followed the crash more than justified the stainless-steel wire as the recording medium; this material can withstand 550 deg C before the recording fades.

The equipment—now known as the "Airborne" recorder—has been specially designed for its job right from the start; it is not a general-purpose recorder modified for aircraft use. Outstanding features are compact size (12in x 6in x 5½in overall) and low weight—9 lb, or 10 lb including switch, terminal box and connecting cable. The recorder can be housed in any convenient part of the aircraft and operated by remote control. Power is taken from the 24-volt aircraft supply, without the use of invertors or vibrators, and the signal input circuit is so arranged that the instrument can be directly connected to the pilot's microphone or, alternatively, to the output side of the aircraft R/T. equipment.

The mechanism and amplifier are housed in a robust, flame-proof metal case which affords maximum protection against both fire and mechanical damage in the event of accident. The mechanism is designed to withstand both extreme g-effects and severe vibration, and anti-vibration mountings may therefore be omitted where limits of space dictate.

In comparison with the simple notebook the one weakness of a recorder lies in the possibility of mechanical failure or human oversight. Accordingly, the designers of the Airborne have taken every possible precaution. For example the amount of wire



The complete "Airborne" recorder installation—recording unit, terminal block and switch. Inclusive weight, with cables, is 10 lb.

available for use can be quickly checked before flight by means of a press-button indicator; and the motor-run switch can be operated by the pilot or, alternatively, the motor can be set to run continuously throughout the flight, so that recording will not be dependent upon the pilot remembering to switch on. Additionally, a light indicator in the cockpit flashes at three-second periods, not merely when the motor is running but when the wire is passing correctly through the recording head. The light ceases to flash if any of the following faults should occur: Recorder not switched on properly; power failure to recorder; broken recording wire; jammed wire spool; wire completely used up (after the full 65 minutes available or if a shorter-duration spool has been fitted in error); or faulty six-way connection to recording unit.

"Side tone" is incorporated, so that the pilot hears his own voice when he speaks into the microphone. So long as he hears his speech and the indicator light continues to flash, he is assured that what he says is duly being recorded.

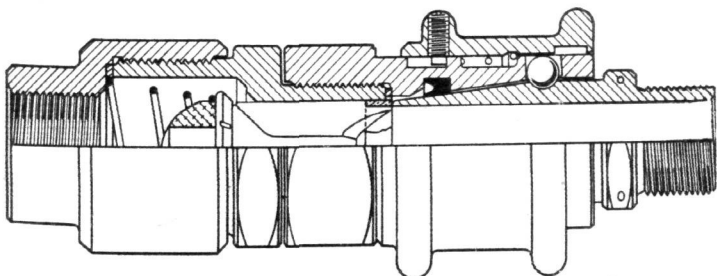
For playback, the Boosey and Hawkes Model A wire recorder is available. This is a heavy-duty, general-purpose instrument as used in the British armed Services and it can be used for general recording and reproducing purposes as well. It offers fast rewind, immediate replay, loudspeaker reproduction and automatic erasure of old recordings to permit the re-use of wire.

HIGH-PRESSURE-AIR COUPLINGS

THE firm of Feeny and Johnson, Ltd., make several products of widely differing character; as examples may be quoted, on the one hand, hose clips and, on the other, vacuum-operated control-conversion units to enable motor vehicles to be handled by disabled drivers.

Experience gained in the design and manufacture of both these products has, no doubt, played a part in the production of another of their specialities, the Feeny and Johnson "C"-type coupling for high-pressure air-hose. This type of connection, which can be quickly coupled and uncoupled without the use of tools, is available in three sizes (¼in, ½in and ¾in bore) and is designed to remain airtight under extremely high pressures; it is stated, for example, that the ½in coupling has been N.P.L.-tested to a pressure of nearly 5,000 lb/sq in. The makers add that the ¾in type, which has been supplied for use in connection with air-started aircraft gas turbines, should easily carry 12,000 lb/sq in.

Very briefly, and as will be seen from the accompanying



A Feeny and Johnson coupling shown half-size and in part section. This example has an automatic shut-off valve—visible, with its spring, towards the left—incorporating a controlled leak at the valve-face.

drawing, the quick-connection system consists of two basic members, the engine-fitting of which is tapered to receive the hose fitting; locking is performed by a ball-located sliding sleeve, and the taper carries a rubber sealing-ring.

All the couplings can be supplied either with or without an automatic shut-off valve, which may also, if required, provide a small controlled-leak. The weight of the male part of the coupling, as fitted to the engine or other component, is 6½ oz, and this fitting projects 2½in. The couplings have a rustproof finish and standard threads for attachment to pipeline end-fittings.

Offices and works of Feeny and Johnson, Ltd., are at 134-136 Ealing Road, Wembley, Middlesex.

A. CDRE. WARBURTON'S NEW POST

FROM Auto Diesels, Ltd., Uxbridge, comes news of the appointment to their Board of A. Cdre. James Warburton, who will be mainly concerned with their aircraft equipment division. The company state that they have recently received large orders from B.O.A.C. and other prominent air lines and aircraft manufacturers for their aircraft starting and servicing units.

A. Cdre. Warburton received his early Service training at the Royal Naval Colleges at Osborne and Dartmouth and subsequently at the Royal Air Force College, Cranwell. He has seen considerable service in the Far East, having served in India, China and Japan, and during the course of these tours of duty visited Siam, the Philippines and Australia. He held two appointments as Air Attaché to the Government of China and has a working knowledge of the Chinese language, as well as speaking Japanese. His last appointment before joining the company was as A.O.C. No. 64 Group.