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PART 3 : SECTION 3

CHAPTER 3

MANUAL LOOP VISUAL INDICATOR

**Function**

1. On aircraft fitted with R.1155 radio equipment and a manually-operated loop, a visual indicator is sometimes fitted to enable the pilot to home onto a transmitter.

2. The following factors affecting the reliability of the human ear reduce its value as an accurate detector of signal volume changes :—

(a) It tires easily.

(b) It is adversely affected by rapid ascents and descents.

Furthermore, it is difficult for a pilot to home solely by keeping a radio signal in his headset at minimum volume.

3. For these reasons, manual loop visual indicators have been developed.

**Principle of Operation**

4. The equipment is entirely under the control of the wireless operator who tunes the R.1155 to a suitable transmitter. The loop is rotated until its plane is at 90° to the fore-and-aft axis of the aircraft. The aircraft is then turned until the needles of the pilot's indicator intersect at the centre line of the manual loop visual indicator. When this occurs the transmitter is either dead ahead or dead astern of the aircraft.

5. Deflection of the needles from the centre line shows that the aircraft is heading either to the right or left of the transmitter. The aircraft should be turned towards the needle indication

to solve the sense ambiguity. If the turn reduces the amount of needle deflection the aircraft is heading towards the transmitter, and vice versa.

**Airborne Equipment**

6. The pilot's indicator is shown in the Fig. The indicator is part of the R.1155 radio equipment, and is complementary to the loop.

**Accuracy**

7. The accuracy of headings indicated by this equipment is about  $\pm 2^\circ$  by day and  $\pm 9^\circ$  by night, at a range of 100 nautical miles.



Fig. Manual Loop Visual Indicator.

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