NEW ZEALAND CIVIL AIRWORTHINESS REQUIREMENTS

PART III

SECTION A.
SUBSECTION A. 6.

LEAFLET A. 6-2.
ISSUE 4—AUGUST 1964.

PROPELLERS, FAIREY-REED METAL

DETAIL OF INSPECTIONS, REPAIR AND OVERHAUL

1. DETAIL OF INSPECTION

1.1 Instances have occurred of transverse fatigue failure of the blade sheet of Fairey-Reed metal propellers, the fracture usually commencing in the vicinity of the identification marks, or as a hairline extending from beneath the phenolic boss block on a line through the attachment bolt hole at the blade root, and parallel to the chord of the blade.

1.2. A fracture in the phenolic block is generally in the vicinity of the bolt hole but extending in a radial direction.

1.3. As a result of these failures, it is required that periodic inspection of these propellors in the vicinity of the hub blocks and identification marks be made as laid down in paragraphs 2 and 4 below.

2. DAILY INSPECTION

The blade sheets are to be examined on both sides and both edges in the region adjacent to the boss and identification stamping. This inspection may be made without removing the propeller from the aircraft.

3. 100-HOUR INSPECTION

3.1. This paragraph applies only to Fairey-Read fixed-pitch propellers fitted to Cheetah engines.

3.2. Remove these propellers for a full strip examination of the blades and boss block in accordance with the provisions of paragraph 4.

4. 300-HOUR INSPECTION

4.1. The propeller is to be removed from the hub, spinner from the propeller, and boss blocks from the blade sheets. The blade sheets are then to be cleaned and inspected for cracks, particularly in the vicinity of the bolt holes and in regions where any attrition or corrosion has occurred. This inspection is to be made with the aid of a magnifying glass. Inspection for cracks is facilitated by anodic treatment of the blade sheets, and, if this treatment has not already been given, it is advisable for the blade sheets to be anodized as soon as this can be arranged.

4.2. A phenolic boss block showing slight surface crazing or small cracks may continue in service at the discretion of an appropriately licensed L.A.M.E. provided there is no movement between the propeller hub, blades, and the phenolic boss block.

4.3. Any propeller found to contain cracks except as in paragraph 4.2, is to be withdrawn from use, and the matter is to be reported to the Director.

4.4. If no cracks are found, any attrition or corrosion marks are to be removed from the blade sheet and boss blocks by means of coarse emery followed by fine emery, and the propellers are to be reassembled. Care must be taken that the white datum marks on the boss blocks are in line. Also during reassembly a layer of tung oil varnish is to be inserted between the blade sheet and the boss blocks, and even loading is to be ensured by tightening down diametrically opposite bolts. When the bolts removed are of the obsolete type in which the nuts are secured by riveting, these are to be replaced where possible by new bolts and self-locking nuts obtainable from the Fairey Aviation Co. Ltd. In the case of some propellers, however, the counterbores in the boss blocks are insufficiently deep to allow replacement bolts with self-locking nuts to be fitted below the faces of the blocks, and in such cases the bolts and nuts removed are to be replaced by the same type, the nuts finally being secured by riveting over the ends of the bolts.

4.5. When the spinners are being reassembled, care is to be taken to ensure that there is sufficient clearance between the blades and the spinner body to prevent chafing.

4.6. After reassembly, and prior to further use, the propeller must be checked for blade angles, track, alignment, and static balance, if facilities are available. The blade angles at three-quarters of the maximum radius must not differ by more than 0° 10′. The difference between blades in track and alignment measured at the tip must not exceed $\frac{1}{16}$ in. and $\frac{1}{4}$ in. respectively. The error in balance must not exceed 5 in.-oz. Should facilities for the above tests not be available, ground tests on the engine, and, if these are satisfactory, flight tests, are to be made to ascertain if the propeller runs smoothly. If rough running is experienced, the propeller is to be removed from the hub and the location bolts slackened off and then retightened. If, on further tests, rough running still persists, the propeller is to be forwarded to an approved repair organisation and the circumstances reported to the local Regional Surveyor.

5. REPAIR AND OVERHAUL

The overhaul of Fairey-Reed metal propellers shall be carried out as laid down in Leaflet A. 6–1 and Fairey Aviation Specification No. F.A.C. 1.

Department of Civil Aviation, Wellington.

July 1964.

Issued in pursuance of C.A. Regs. 1953, Regulations 169 and 173.

Deputy Director of Civil Aviation.