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AIRWORTHINESS NOTICE

LIGHT AIRCRAFT PISTON ENGINE OVERHAUL PERIOD

1. Normally, for a light aircraft piston engine, DCA will accept the engine constructor's overhaul period recommendations which have been promulgated under a system approved by the responsible airworthiness authority. Light aircraft engine in this context means either:-
 - a) an engine installed in an aircraft, the Maximum Weight of which does not exceed 2730kg, or
 - b) an engine of 400hp or less
2. Some constructors; publications permit operation beyond the overhaul periods recommended, at the discretion of the owner/operator, if the condition of the engine shows it to be justified. In certain instances the recommended overhaul periods are associated with particular rates of engine utilization; service bulletin/modification configuration and types of operation. DCA policy in respect of engines used in light aircraft is set out in paragraph 3 to 6 and in the Appendix to this Notice.
3. Continuation in service shall be in accordance with paragraph 3.1, as qualified by paragraphs 3.1.1 and 3.1.2, as appropriate.
 - 3.1 Engines may be operated to the hour between complete overhauls which have been recommended by the constructor and promulgated under system approved by the responsible airworthiness authority, provided they conform to the appropriate service bulletin/modifications by the constructor constitute a recommended overhaul period for the purpose of this Airworthiness Notice, including recommendations by the constructor for reduced overhaul periods with particular types of operation or particular service bulletin/modifications.
 - 3.1.1 Engines which have not completed a recommended overhaul periods which has a rate of utilization qualification (e.g. Lycoming) within ten years since first installation after the first build or that last complete or top overhaul¹, may only continue in service to the end of the recommended period if the engine is inspected in accordance with paragraph 4 at the completion of the ten years, and subsequently at 100hr or yearly intervals, whichever occurs first, in order to assess its condition.

¹ for the purpose of this Notice "top overhaul" means the restoration of cylinder and piston assemblies to complete overhaul standards or to Service Limits if these are defined by the manufacturer.

- 3.1.2 Engines which have completed the recommended overhaul period may continue in service for a period of operation not exceeding 20% of the hours recommended, subject to (a), (b) and (c).
- a) Compliance being shown with the appropriate limitations specified in Appendix No. 1 of this Notice.
 - b) Compliance being shown with any Airworthiness or Additional Directive that requires compliance at engine overhaul, unless otherwise agreed by DCA.
 - c) The engine being inspected in accordance with paragraph 4 in order to assess its condition immediately prior to the increase and subsequently at 100 hours or yearly intervals, whichever occurs first. For engines operated in crop spraying aircraft the inspection must be repeated at 50-hour intervals.
4. The inspections referred to in paragraph 3.1.1 and 3.1.2 to assess the condition of the engines shall be in accordance with the United Kingdom Civil Aviation Inspection Procedures Leaflet EL/3-15 and shall be carried out by appropriately licensed aircraft maintenance engineers or an organization specifically approved for the purpose.
5. In no case shall any mandatory restrictions be exceeded, and the compliance with mandatory bulletins/modifications/inspections shall be completed at the specified times.
6. In the case of engines not incorporating: all the service bulletins/modifications which would enable it to qualify currently for any recommended overhaul period as defined in paragraph 3.1 of this Notice, or of engine types not included in the constructors' bulletins, a specific recommendation in writing must be sought from the constructor, and if this is not obtainable, application made to the DCA.

NOTE: *This Notice cancels DCA (Aircraft) Notice A16 Issue 1 which should be removed, with the index to Section 'A' being amended accordingly.*

S B Mzata
CHIEF CIVIL AVIATION OFFICER

APPENDIX NO. 1 TO NOTICE NO. A16

Issue: 1

January, 1984

1. The concept of following engines to run beyond the constructor's recommended overhaul period depends upon the presumption that it is possible to check the condition of the engine by prescribed inspections carried out at defined intervals. It is not intended to provide a freedom to run until the engine fails. The validity of the concept depends on the ability of the inspection to give warning of impending failure and in many areas of the engine this ability exists. There are, however, some types of failure (e.g, crankshaft cracking, counterweight wear) for which predictive checks are not possible other than by stripping.
2. CAA, our U.K. advisors, have sought the advice of the constructors of the majority of the piston engines currently used in light to try to identify those components which service experience has shown to have running time limits beyond which it would not be reasonable to operate, i.e. components the failure of which are not susceptible to prior detection but which would result in either an unacceptably high failure rate or a hazardous failure. These components and the associated life limits are detailed in paragraph 4 and further information will be added as it becomes available.
3. In assessing the suitability of any engine to continue in operation beyond the constructor's recommended overhaul period, the engineer concerned must not go beyond any life limited and conditions specified in this Appendix.
4. Limitations
 - 4.1 **AVCO LYCOMING ENGINES.** Nil
 - 4.2 **ROLLS ROYCE MOTORS 0-24 ENGINES.**
After 1 June 1982, engines whose crankshafts are subject to the 10hourly repeat inspections specified in service Bulletin T, 16/1, item 8, will no longer be permitted to operate beyond the constructor's recommended overhaul period.
 - 4.3 **TELEDYNE CONTINENTAL MOTORS.** Nil