

On Condition Maintenance Program

- Textron Lycoming engines -
Multi-engine aircraft

Doc: MULTI-LYC-OC



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Aircraft maintenance and repair
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Introduction

A piston engine that has reached the end of its normal overhaul period may be expected to have suffered some wear to cylinders, pistons, valves, bearings and other moving parts, but an engine that has been carefully operated and maintained may still be in a condition suitable for a further period of service.

Lycoming has recommend a lifetime for it's engines. Engine lifetime is given in days and hours both. This program is set up to keep an engine in condition while engine life time or Time Between Overhaul (TBO) in hours, days or both is expired.

Many factors affect the wear that takes place in an engine. The most important of these include: the efficiency of the air intake filter, the techniques used in engine handling, particularly during starting, the quality of the fuel and oil used in the engine and the conditions under which the aircraft is housed when not in use. Conditions of operation are also relevant; the length of flights, the atmospheric conditions during flight and on the ground, and the type of flying undertaken. Many of these factors are outside the province of the maintenance engineer, but meticulous compliance with the approved Maintenance Schedule and any instructions provided in the form of service bulletins or constructor's recommendations will undoubtedly help to prolong the life of an engine.

The inspections and tests that may be necessary to determine, control and monitor any change of the condition of an engine, are detailed in the next chapters.

Because each aircraft/engine configuration has his own limitations and performance, this O/C program must be specified per aircraft as necessary and applicable.

Before reaching engine TBO this program must be activated to monitor the condition of the engine and the trend of this condition. At least six oil samples are needed. When TBO is reached, a good reference is achieved to determine engine condition.

Vliegwerk Holland BV has many years of experience with engines which are over their TBO. The whole program is based on recommendations and approved data of the engine's manufacturer, programs and guidelines provided and approved by other authorities (like the CAA-UK) and many years experience of Vliegwerk Holland BV.

NOTE

THIS ON CONDITION PROGRAM IS ONLY VALID IN COMBINATION WITH AN ORIGINAL SIGNED AND STAMPED PERMISSION CERTIFICATE OF VLIEGWERK HOLLAND BV. EACH ON CONDITION PROGRAM IS VALID FOR ONLY ONE AIRCRAFT REGISTRATION AND ONE ENGINE AS SPECIFIED ON THE PERMISSION CERTIFICATE VLIEGWERK HOLLAND BV. IT IS FORBIDDEN TO USE THIS PROGRAM FOR ANOTHER AIRCRAFT OR ENGINE OTHER THAN SPECIFIED ON THE PERMISSION CERTIFICATE OF VLIEGWERK HOLLAND BV. NO PART OF THIS PUBLICATION MAY BE REPRODUCED WITHOUT THE PRIOR WRITTEN PERMISSION OF VLIEGWERK HOLLAND BV.

DISCLAIMER

USE OF THIS PROGRAM IS AT RESPONSIBILITY OF THE OWNER OF THE AIRCRAFT. VLIEGWERK HOLLAND BV IS NOT RESPONSIBLE FOR ANY LOSS OR DAMAGE OF WHATSOEVER NATURE THAT MAY CAUSED BY OR BROUGHT ABOUT, DIRECTLY OR INDIRECTLY, BY THE USE OF THIS PROGRAM.

Applicability and restrictions of the program

1. This program is limited to Lycoming engines installed on multi engine piston (MEP) planes according list in paragraph 1.2. Magneto's, starter, alternator, fuel injection components and components stated on TCDS of engine are included.
2. This program is only valid when the plane has an average of 15 flight hours per 6 months and fly a minimum of 1 hour a month. When plane fails to achieve this hours, the owner can receives one month extension to achieve the needed hours, after that the O/C program will stop if still no average of 15 hours per 6 months is achieved. Prior written permission of CAA-NL (IVW) is mandatory for this extension. These requirements are not applicable for periods during which the engine is preserved in accordance with the TC-holder's instructions. Such preservation must be recorded in the relevant logbooks.
3. Flexible fuel and oil hoses and (variable pitch-) propellers (-components) are excluded of this O/C program and must be replaced or overhauled at manufacturer recommendations.
4. When engine is operated beyond recommended TBO, the condition will be monitored in detail. However, the O/C program is limited and will stop:
 - a. When wear of cylinders occurs beyond recommended TBO;
 - b. When engine performance is out of limits beyond recommended TBO.
5. Components not stated on the TCDS are excluded of this O/C program.

Applicability per engine / plane configuration

Engine	TCDS	Plane	TCDS
IO-320	1E12	PA-30/40	A1EA
(L)O-360	E286	PA-44, Beechcraft 76	A19SO, A29CE
IO-360	1E10	PA-34	A7SO
IO-540	1E4	PA-31, PA23	A20SO, 1A10
(L)TIO-540	E14EA	PA-31	A20SO