

On Condition Maintenance Program

- Textron Lycoming engines -

Doc: 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.

300 Hours or 3 years before reaching engine TBO this program must be activated to monitor the condition of the engine and the trend of this condition. 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 single engine piston (SEP) planes according list in paragraph 1.2. Components are included as far as stated on TCDS engine.
2. Engines which are already over their TBO and not started this program, needs prior written permission of CAA-NL (ILenT) to use this program.
3. 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 (ILenT) is mandatory for this extension. The O/C program may be interrupted as long as the engine is preserved according manufactures recommendations, found in Lycoming SL180. The program starts again at the date when aircraft is flown for first time after preservation.
4. 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.
5. 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.
6. 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	C172, F172	3A12, A4EU
IO-360	1E10	C172, F172, C177, PA28, DA40, C177RG, F177RG, FR17	3A12, A4EU, A13CE, 2A13, A.022, A20CE, A26EU, A18EU
IO-540	1E4	TB20, GA-8, C182, C206, PA32	A51EU, A.042, 3A13, A4CE, A3SO
O-235	E-223	C152, F152, J3, PA18, PA38, G115, DR400, R2000/HR200	3A19, A13EU, A-691, 1A2, A18SO, A.364, 45/121(FR), IM.A.086
O-290	E-229	PA18, Auster MK5 (no TCDS)	1A2
O-320	E-274	C172, F172, PA12, PA18, PA28, Rallye, AA5, A23/24, TB9, C177, R2000/HR200	3A12, A4EU, A-780, 1A2, 2A13, 7A14, A16EA, A1CE, A51EU, A13CE, IM.A.086
O-360	E-286	C23, C172, F172, C172RG, PA28, Safir 91D, DR400, Christen A1, MS, AA5, TB10, C177, R1180, PA18	A1CE, 3A12, A4EU, 3A17, 2A13, 8B/59, 45/121(FR), A22NM, 7A14, A16EA, A51EU, A13CE, 131/8(FR), 1A2
O-435	E-228	Fokker S.11, Stinson L5()	N° F.1, A-764
O-540	E-295	PA24, PA25, (T)R182, T182, S.205/S.208	1A15, 2A10, 3A13, A9EU
TIO-540	E14EA	PA32, T182T, T206, PA-46	A3SO, 3A13, A4CE, A25SO