DEPARTMENT OF TRANSPORTATION **Federal Aviation Administration** **14 CFR Part 39** **[SN]** **[Docket No. ; Amendment 39-4395; AD 81-18-04 R2]**	**AVCO Lycoming AD 81-18-04 R2 Amendment 39-4395 Effective June 7, 1982 Revises AD 81-18-04 R1 ATA Code: 79 Recurring: No**		

Airworthiness Directives; Avco Lycoming Models O-235, O-290-D, -D2, O-320, IO-320, AIO-320, AEIO-320, LIO-320, O-340, O-360, IO-360, AIO-360, AEIO-360, HO-360, HIO-360, LO-360, LIO-360, TIO-360, TO-360, LTO-360, VO-360, IVO-360, O-540 and IO-540 series engines.

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

DATES: Effective June 7, 1982.

81-18-04 R2 AVCO LYCOMING: Amendment 39-4199 as amended by Amendment 39-4258 is further amended by Amendment 39-4395.

Applicability: All O-235, O-290-D, -D2, O-320, IO-320, AIO-320, AEIO-320, LIO-320,
O-340, O-360, IO-360, AIO-360, AEIO-360, HO-360, HIO-360, LO-360, LIO-360, TIO-360,
TO-360, LTO-360, VO-360, IVO-360, O-540 and IO-540 series engines, except for the following:
O-320-H2AD, O-360-E1A6D, LO-360-E1A6D, TO-360-E1A6D, LTO-360-E1A6D, IO-540-P1A5, IO-540-R1A5, IO-540-S1A5 and; O-540/IO-540 series engines built with

large capacity oil pumps and dual magnetos designated with "5D" in the model suffix (Example: IO-540-K1A5D).

Compliance required as indicated unless already accomplished.

To prevent failure of engine oil pumps which incorporate sintered iron impellers, accomplish the following:

(a) Compliance is required within the next 25 hours in service after the effective date of this AD for all Lycoming HIO-360-D1A, -E1AD, -E1BD and -F1AD up to and including serial number L-22579-51A except the following: L-22311-51A thru L-22313-51A, L-22396-51A, L-22397-51A, L-22416-51A, L-22546-51A thru L-22549-51A, L-22563-51A, L-22568-51A thru L-22571-51A, and in addition all of the above engines that were overhauled in the field prior to April 1, 1981; all remanufactured engines of the above model shipped prior to April 1, 1981, regardless of serial numbers.

(1) Replace the oil pump driven impeller and shaft with hardened steel impeller and shaft P/N LW-18110 and replace the driving impeller with impeller P/N LW-18109 in accordance with the instructions set forth in **AVCO Lycoming Service Bulletin No. 454** dated April 10, 1981, or approved alternate method, unless it can be established that a sintered iron impeller is not installed (see **Note** below).

(b) Compliance is required within the next 25 hours in service after the effective date of this AD for: Lycoming models O-360-A1LD S/Ns L-17555-36A through L-22462-36A, O-360-A1F6D S/Ns L-16685-36A through L-22582-36A, O-360-A5AD S/Ns L-17057-36A through L-20038-36A, IO-360-A1B6D/-A3B6D S/Ns L-9598-51A through L-16595-51A,
L-17273-51A, L-17312-51A through L-17319-51A, L-17321-51A, L-17336-51A through
L-17340-51A, L-17347-51A through L-17351-51A, L-17355-51A, L-17358-51A, L-17377-51A through L-17380-51A, IO-360-C1E6D, S/N L-14527-51A, TO-360-C1A6D S/Ns L-101-69A through L-243-69A, and in addition, all of the above model engines which were overhauled in the field between April 7, 1970, and October 15, 1976, regardless of serial numbers; and all of the above model engines which were remanufactured and shipped before April 1, 1981, regardless of serial numbers.

(1) Replace the existing drive and driven impellers with a steel driving impeller P/N 60746 and an aluminum impeller and shaft assembly P/N LW-13775 in accordance with **AVCO Lycoming Service Bulletin No. 455A** dated April 24, 1981, or approved alternate, unless it can be established that a sintered iron impeller is not installed. (See **Note** below.)

(c) For all other engines in the subject Applicability paragraph not specifically listed in Paragraphs (a) and (b) above, comply with **Avco Lycoming Service Bulletin No. 456** dated August 21, 1981, or FAA approved revision or alternate, at 2000 hours since new or since last overhaul, whichever is later, or whenever the accessory section is removed. Those engines which have accrued 2000 hours or more on the effective date of this AD must comply within the next 100 hours in service. Compliance is required

as described herein unless it can be established that a sintered iron impeller is not installed. (See **Note** below.)

Alternate methods of compliance must be approved by the Chief, New York Aircraft Certification Office. Upon submission of substantiating data by an owner or operator through an FAA Maintenance inspector, the Chief, New York Aircraft Certification Office may adjust the compliance time specified in this AD.

In accordance with FAR 21.197 and 21.199, the aircraft may be flown to a location where the alterations required by this AD can be performed.

Note: Engines originally manufactured prior to 1970 did not incorporate iron impellers. For these engines, reference should be made to engine maintenance/overhaul logbook records, Lycoming build records, and pertinent Service Bulletins. **Service Bulletin Nos. 381C** and **385C** describe a method to determine if the early design oil pump with aluminum/steel impellers is installed. Aluminum/steel impellers do not require replacement.

Amendment 39-4199 became effective September 14, 1981.
Amendment 39-4258 became effective November 19, 1981.
This amendment 39-4395 becomes effective June 7, 1982.

Manufacturer's Service Information:
AVCO Lycoming Service Bulletin No. 381C
AVCO Lycoming Service Bulletin No. 385C [Supp 1]
AVCO Lycoming Service Bulletin No. 454 [Rev B]
AVCO Lycoming Service Bulletin No. 455A [Rev B][Rev D]
AVCO Lycoming Service Bulletin No. 456 [Rev A][Rev C][Rev F]