



# SERVICE INFORMATION LETTER

---

---

SERVICE INFORMATION LETTER NO. 131

Page 1 of 2

DATE: October 1, 1984

SUBJECT: Engine Damage from Improper Operation

MODELS: All Enstrom "C" and "F" Helicopters

EFFECTIVITY: As of receipt of this Service Information Letter, all owners, pilots and/or mechanics who may operate the engine should be cognizant of this Letter

There have been several instances of pilots and/or owners reporting that they have been refused warranty from Lycoming on an engine problem. Upon investigation, all such instances had one thing in common, damaged exhaust valves. In reviewing all the facts with Lycoming it was obvious that the engines had been run at high power settings with inadequate fuel flow to one or more cylinders.

This can be the result of improper leaning of the engine beyond the lean best power curve or operating the engine with one or more fuel nozzles plugged or partially plugged.

Excessive leaning or plugged nozzles will result in extremely high exhaust gas temperatures and detonation, which can result in severe engine damage and subsequent failure. All owners and operators are cautioned that they must recognize the operating symptoms exhibited by an engine being operated under either of the conditions previously described. This will alert them to take the appropriate corrective measures necessary to protect the engine from catastrophic or premature failure.

## LEANING

CAUTION: Lean until the engine rpm reaches a peak, then richen slightly, as indicated by slight rpm decrease; observe EGT indicator and other engine indicators to determine that the engine is operating within the prescribed limitations. The engine should never be leaned at maximum or extremely high manifold pressures; furthermore, leaning at high OAT\*s should be done very cautiously to stay within the required operating parameters, as engine detonation can easily start under these conditions.

PLUGGED OR PARTIALLY PLUGGED FUEL NOZZLE

A plugged nozzle or partially plugged fuel nozzle may result in engine roughness during all modes of operation, particularly at idle. The operator will see slightly higher than normal fuel flows for all power settings, and will require slightly more power (MAP) to do the same maneuvers than normal. It should be noted that in some cases a partially blocked air or fuel passage in the nozzle will cause the engine to twitch or tremble, slightly to moderately, at higher power settings.

Operators are warned that repeated abuse of the engine by improper leaning or operating the engine with nozzle blockage will result in severe engine damage and expensive repairs. NOTE: The subsequent warranty claims are usually denied, due to the obvious evidence of excessively lean mixture revealed during teardown.

All operators are requested to install the following placard, part number 28-18100, adjacent to the mixture control knob as a reminder:

CAUTION

PROLONGED OPERATION WITH EXCESSIVE LEANING  
OR ENGINE ROUGHNESS MAY RESULT IN  
PREMATURE ENGINE FAILURE OR DAMAGE.