

SERVICE BULLETIN #91-01

March 28, 1991

**ELLISON FLUID SYSTEMS CONSIDERS COMPLIANCE MANDATORY.
FAILURE TO COMPLY MAY RESULT IN ENGINE FAILURE.**

TO: ALL USERS OF ELLISON FLUID SYSTEMS, INC. THROTTLE BODY
INJECTOR MODEL EFS-2

SUBJECT: Failure of the mixture control shaft.

MODEL AFFECTED: EFS-2 SERIAL NUMBERS AFFECTED: 1000-1467

DISCUSSION:

Ellison Fluid Systems, Inc. has discovered two instances of mixture control shaft failure. Both failures resulted in forced landings. Both failures occurred on installations which use a push pull cable with a 10-32 threaded end to operate the mixture control lever. The weight of the 10-32 threaded rod on the end of the cable places excessive vibration loads on the mixture control shaft, causing fatigue failure. No failures have been reported with installations which use a .050" - .080" solid wire type cable to operate the mixture lever.

This service bulletin requires the replacement of the mixture control shaft with a shaft of improved design on **all** EFS-2 Throttle Body Injectors.

COMPLIANCE PROCEDURE:

This procedure must be performed in accordance with FAR's by a FAA licensed A+P mechanic or the builder of the aircraft if he or she possesses a repairman certificate for the particular aircraft.

Inspect the Throttle body Injector installation to determine the type of cable attached to the mixture control arm. If the cable is a .050" - .080" solid wire type, the mixture control shaft must be replaced within 10 hours of operation. Make a logbook entry noting this inspection.

If the mixture control is operated by a cable with a 10-32 threaded end, or any type of push rod or it is suspected that the engine, or throttle body has been subject to excessive vibration, the aircraft must be taken out of service immediately and the mixture control shaft replaced before further flight. Also, the mixture control cable or push rod must be replaced with a .050" - .080" solid wire cable. These cables are sometimes called "Boden" cables and are the same type commonly used on production aircraft.

See "instructions" below for details regarding how to disassemble the unit and return the metering tube to the factory for mixture control shaft replacement.

INSTRUCTIONS:

1. Remove the Throttle Body Injector from the aircraft.
2. Remove the safety wire which secures the metering tube roll pins.
3. Place the unit on a work table with the airbox (inlet) flange facing up. Using 1/16" pin punch drive out the two roll pins which retain the metering tube assembly
4. Pull and rotate the mixture control shaft to remove the metering tube assembly.
5. Remove the cotter pin or roll pin securing the mixture control arm to the metering tube and shaft and remove the control arm. Save the control arm for re-installation on the modified metering tube assembly.
6. For protection during shipping, place the metering tube assembly in a 6" long piece of 1/2" diameter aluminum or PVC pipe. The metering tube is the "heart" of the throttle body. Please pack this carefully. If it is damaged in shipping, a new metering tube will cost \$80.00.
7. Complete the questionnaire and return the metering tube and questionnaire to:

Ellison Fluid Systems, Inc.
350 Airport Way
Renton, WA 98055

The cost for this modification is \$28.00. If you do not wish to remove the mixture control shaft - metering tube assembly yourself, you may return the entire throttle body with an additional \$10.00 to cover the additional labor costs. Enclose a check or money order payable to Ellison Fluid Systems, Inc. Payment by masterCard or Visa is also accepted. Enclose the card number and expiration date.

The metering tube assembly will be returned by UPS ground. If UPS second day air shipping is desired, enclose an additional \$3.00 for shipping. Next day air shipping is an additional \$12.00. Customers requiring international shipping must contact the factory regarding method and cost of shipment and customs brokerage.

COMPLIANCE TIME: **Inspection:** Before further flight

Mixture control shaft replacement: For installations that used a 10-32 cable or push rod to operate the mixture control:

Before further flight for installations that used a 10-32 cable or push rod to operate the mixture control (see "discussion" above). **Note** that the push pull cable or push rod must be replaced with a "Boden" cable before further flight.

Mixture control shaft replacement: For installations that use a "Boden" cable to operate the mixture control.

Within 10 hours of operation if the solid wire "Boden" cable is installed.

NOTE: If you are not longer in possession of the Throttle Body Injector, please forward this information to the present owner/operator and notify Ellison Fluid Systems, Inc. of owner/address change. Notification should include the serial number and current owner's name and address. Direct all corrections/changes to the address appearing on the letterhead.

March 22, 1991

QUESTIONNAIRE

Please fill out this questionnaire as completely as possible.

Name: _____

Address: _____ Phone: _____

Throttle body Injector Model: _____ S/N: _____

Aircraft Model: _____ Engine Model: _____

Auto gas or AV gas? -----Auto AV

What type of fuel filter is installed: _____

How many total hours on unit: _____

Circle the following charges that apply and enclose payment for the total:

Metering tube mixture control shaft replacement cost \$28.00

Additional cost for disassembly of EFS: 10.00

Shipping by UPS Ground: NO CHARGE

Shipping by UPS second day air: 3.00

Shipping by UPS next day air: 12.00

Total enclosed: \$_____

Any comments: