



SERVICE LETTER

No. 638A

Customer Services

Piper Aircraft Corporation

Lock Haven, Pennsylvania, U.S.A.

February 8, 1973

(Supersedes and voids Service Letter No. 638 dated November 8, 1972)

Reason for Revision: To provide specified silicone lubricant under Piper part number (reference Material Required, below).

Subject: Edo-Aire Mitchell Service Letter No. ML35, dated September 20, 1972

Models and Serial Numbers Affected: All Piper airplanes with Piper AltiMatic II AutoPilot installations.

Compliance Time: Recommended at the next 100-hour inspection or annual inspection, whichever occurs first.

Purpose: To provide distribution of Edo-Aire Mitchell Service Letter No. ML35, dated September 20, 1972 concerning proper servo lubrication procedures for rack and pinion type servos (copy attached).

Instructions: Refer to attached copy of Edo-Aire Mitchell Service Letter No. ML35.

Material Required: Silicone lubricant, Piper Part No. 761 180 (General Electric Part No. G-322L, two ounce tube) at suggested unit list price \$3.23C. Refer to attached copy of Edo-Aire Mitchell Service Letter No. ML35.

Availability of Parts: Your Piper Dealer, or procure locally.

Effectivity Date: This Service Letter is effective February 22, 1973.



SERVICE

LETTER

NO ML35

DATE 9-20-72

EDO-AIRE MITCHELL

TO Edo-Aire Mitchell Distributors
and Piper Aircraft Corporation

SUBJECT Servo Lubrication (Rack and
Pinion Type Servos)

This Service Letter affects the listed aircraft models in which are installed the Mitchell Autopilot installation kits listed on page 3.

A service difficulty has been reported in which an aircraft with one of the affected autopilot kits, and after having been cold soaked in sub-zero weather for a number of hours, required excessive force to move the control wheel fore and aft. Tests conducted upon the rack and pinion type autopilot servo actuator used in the reported instance indicate the force required to operate the servo at temperatures below -30°F does begin to rise substantially. The reported service difficulty is not considered to involve a safety problem. This is because in all installations the control system is protected against any servo malfunction with a break-away link to automatically disconnect the servo when override forces exceed a safe value.

It is recommended at the next 100 hour or annual inspection, the rack and pinion gear lubricant be changed. It is also recommended the lubricant be changed if sub-zero operation is anticipated, or if cold weather difficulties have already been experienced.

The procedure for changing the lubricant is as follows:

1. Remove the affected servo actuator from the aircraft.
2. Thoroughly remove and clean the existing lubricant from the operating surfaces of the rack and pinion gear of the servo. A suitable solvent may be used, however, care is required so as not to contaminate the servo motor, clutch surfaces, or electrical components attached to the servo.
3. Relubricate the operating surfaces of the rack and pinion gear with a light film of the following lubricant:

Edo-Aire P/N 11M291
(General Electric Silicone Lubricant G-322L)

4. Reinstall the servo actuator in the aircraft.
5. Make the proper entry in the aircraft maintenance record.

The lubricant, P/N 11M291, may be ordered from Edo-Aire Mitchell, P.O. Box 610, Mineral Wells, Texas, 76067, or it may be purchased from General Electric as their Silicone Lubricant, P/N G-322L.

When ordered from Edo-Aire Mitchell the price is \$6.00 net postpaid, for the 2oz. tube. The 2oz. tube contains sufficient lubricant to service a number of servo actuators, depending on how generous is each application.



Carl J. Swift
Product Manager
Edo-Aire Mitchell

MITCHELL PRESIDENT AND ALTIMATIC MODELS
HAVE RACK AND PINION GEAR SERVO ACTUATORS

STC NO.	AK NO.	SERVO	A/C MODEL
SA2-841	072	1X244	Bellanca 14-19-3
SA59SW	089	1X312C	Piper PA24, Pa24-250
SA64SW	100	1X244	Beech J35, K35, M35, 35-33
SA90SW	101	1X244	Beech 35-A33, N35
SA92SW	103	1X244	Beech 95, B95, B95A, 95-55
SA31SW	104	1X244	Beech 50, B50, C50, D50, D50A, D50B, D50C, E50, F50, G50, H50
SA218SW	105	1X244	Beech 65
SA109SW	106	1X244	Cessna 172, 172A, 172B, 175
SA102SW	109	1X244	Cessna 180, 180A, 180B, 180C, 180D, 180E, 182, 182A, 182B, 182C, 182D, 185, 185A
SA101SW	110	1X244	Cessna 182E
SA103SW	111	1X244	Cessna 210, 210A
SA89SW	112	1X244	Cessna 210B
SA99SW	113	1X244	Cessna 310, 310A, 310C, 310D, 310E, 310F, 310G, 320
SA100SW	114	1X244	Piper PA23, PA23-160, PA23-250, PA23-235
SA160SW	115	1X244	Piper PA24, PA24-250
SA268SW	116	1X244	Navion A,B,D,E,F,G,D-16, D-16A
SA224SW	117	1X244	Mooney 20, 20A, 20B, 20C
SA81SW	119	1X244	Beech 050E
SA120SW	120	1X244	Cessna 210-5, 210-5A, 206, P206, U206
"	120E	"	"
"	120E-3	"	"
SA338SW	125	1X244	Cessna 310I, 310J, 320B, 320C
"	125E	"	"
SA330SW	126	1X244	Cessna 210D, 210E
"	126E-3	"	"
SA343SW	127	1X244	Piper PA30
"	127E	"	"
"	127E-3	"	"
SA369SW	129	1X244	Piper PA28-150, 28-160, 28-280, 28-235
SA445SW	140	1X244	Cessna 336
SA521SW	157	1X244	Cessna 310I, 310J, 320B, 320C
SA470SW	122	1X344	Beech 65-80, 65-A80
SA486SW	143	1X344	Bellanca 14-19-3a
SA521SW	157	1X344	Cessna 310I, 310J, 320B, 320C
SA547SW	177	1X344	Helio

NOTE: All the above listed autopilot kits are for Mitchell President Auto-pilots, with the exception of AK089. AK089 (STC No: SA59SW) is for an Altimatic Autopilot.