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EDM-900 Airplane Flight Manual
Supplement No. 900-0001 Rev. E
Date 3/28/2016
STC SA01435SE

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT OR
SUPPLEMENTAL AIRPLANE FLIGHT MANUAL
(FOR THOSE AIRCRAFT WITHOUT A BASIC AIRPLANE FLIGHT MANUAL)

EDM-900 PRIMARY ENGINE DATA MANAGEMENT SYSTEM

Airplane Flight Manual Supplement No. 900-0001 Rev. E

For

Aircraft as listed on STC SA01435SE

REG. NO. N4389X

SER. NO. 28-7635034

This Supplement must be attached to the FAA Approved Airplane Flight Manual when the J.P. Instruments EDM-900 is installed in accordance with Supplemental Type Certificate SA01435SE. For those airplanes without a basic Airplane Flight Manual, this Supplemental AFM must be in the aircraft when the EDM-900 is installed.

The information contained in this Airplane Flight Manual Supplement/ Supplemental Aircraft Flight Manual supplements or supersedes the basic manual/ placards only in those areas listed. For limitations, procedures and performance information not contained in this supplement, consult the basic manuals, markings, and placards.

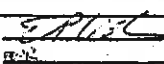


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Federal Aviation Administration

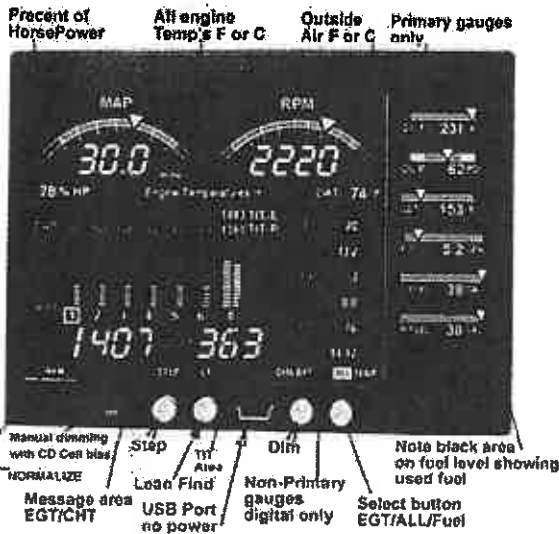
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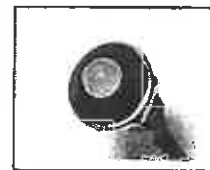
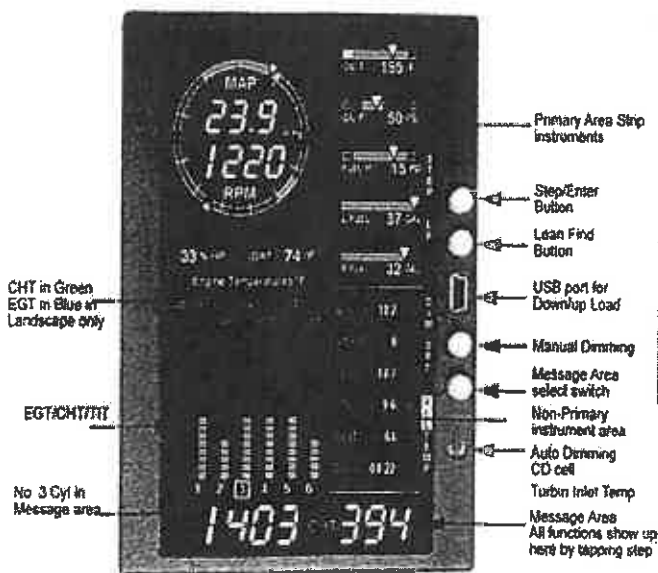
Revision	Description	Affected Pages	Approval
A & B	Pre-release Version	1 thru 6	None, Pre-release
C	Complete Flight Manual Supplement for EDM-900.	1 thru 6	<div style="border: 1px solid black; padding: 5px;"> <p>1 Approval</p>  <p>Manager: Seattle Aircraft Certification Office Federal Aviation Administration</p> <p>Date: <u>DEC 10 2004</u></p> </div>
D	Complete Flight Manual Supplement for EDM-900.	1 thru 6	 FOR Manager, Seattle Aircraft Certification Office Federal Aviation Administration Date: <u>DEC - 1 2011</u>
E	Added Fuel Level analog or analog and digital.	1 thru 6	 FOR Manager, Seattle Aircraft Certification Office Federal Aviation Administration Date: <u>3-28-16</u>

I. GENERAL

The EDM-900 is a combined electronic indicating system, which simultaneously displays to the pilot powerplant and aircraft systems operating parameters. It includes the following indicating systems; replacing previous primary digital and/or analog instruments. (The label of the parameter shown on the EDM-900 display message area is indicated in the second column. The message is located below the CHT/EGT display.



Gauge Function	Message Area Alarm Abbreviation
Primary	Primary
Engine rotational speed	RPM xxxx
Engine Manifold Pressure	MAP xx.x in hg
Engine Cylinder Head Temp	CHT2 xxx °F
Engine Oil Temperature	O-T xxx °F
Engine Oil Pressure	O-P xxx °F
Fuel Pressure	F-P xx PSI
Fuel Flow to engine	F-F xx.x GPH
Comp. Discharge Temp.	CDT xxx °F
Turbine inlet Temp. Left side	TIT-L xxxx °F
Turbine Inlet Temp. Right side	TIT-R xxxx °F
Single Turbine Inlet Temp.	TIT xxxx °F
Non-Primary	Non-Primary
Exhaust Gas Temp.	EGT2 xxxx °F
Shock Cooling of CHT	CLD xx °/MIN
Differential Temp. of EGT	DIF xx °F
Bus Voltage	Volts xx.x
Amperage Load	AMPS xx
Outside Air Temp.	OAT xx °F
Estimated Time to Empty	Est. T to E xx:xx H:M
Fuel used to date	USED xx.x GAL
Estimated Remaining fuel	Est. REM xx GAL
Estimated Fuel required to Waypoint	Est. WP REQ xx GAL
Estimated Fuel Remaining at Waypoint	Est. WP RES xx GAL
Nautical Miles per Gallon	ECON xx.x MPG
Brightness, Dim control	DIM/BRT



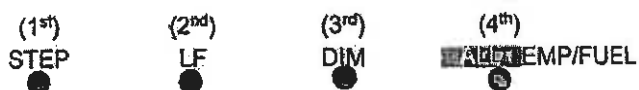
Remote Annunciate Light (RAL)

Display

Non-primary functions such as: Induction air temperature, carburetor inlet temperature, EGT Span, bus voltage, Amps, Shock Cooling, Fuel Remaining, Fuel Required, Fuel Reserve, MPG, Endurance, and Fuel Used have programmable alarm limits. CHT, TIT, EGT, FP, FF, and MAP may not be primary on some installations. Any of these non-primary functions are programmable by the pilot. Primary functions can not be changed.

Fuel level can be displayed as an analog gauge or as an analog with digital information. This is selectable by the pilot in the Pilot Programmable mode of the instrument. If the digital information is selected the following question will appear. "With fuel flow monitoring" Yes/No. Yes will cause the fuel flow and the Fuel Level readings to be linked so that if the Fuel Flow and Fuel Level do not agree by 5 gallons a yellow alert will be indicated on the display above the fuel level gauge.

The right hand side the EDM-900 has horizontal tape scales with digital values below each scale. The functions: OIL-Temperature (O-T), OIL-Pressure (O-P), FUEL-Pressure (F-P), (or CDT, for engine installations having a primary Compressor Discharge Temperature), Fuel Flow (FF), and two main and two Aux fuel tank quantities (QTY-LF/RT Main, QTY-LF/RT Aux). The engine MAP and RPM are presented in the upper left corner of the instrument with analog-type circular gauges. The EGT, CHT and TIT are presented in the lower left corner. Below the EGT/CHT columns is a "Message area" that displays the digital values of the EGT/CHT/TIT and additional functions like shock cooling and limit alarm messages. OAT is displayed in a box in degrees C or F. A soft switch is located above button 4 and toggles between ALL/TEMP/FUEL



Specific values for each parameter are displayed digitally above the vertical scale displays of EGT, CHT, and TIT, except for the portrait mode where only the CHT and TIT values are shown. The boxed number below the columns indicates which cylinder's digital information is being displayed in the "Message Area" or displayed as an alarm in the Message Area.

Programming

Depressing the LF and STEP buttons simultaneously enters the pilot program mode enabling the pilot enter fuel quantities (for fuel totalizer calculations only), display scan rate, OAT displayed in °F or °C, EGT digital display resolution to 1 or 10°, analog or digital fuel quantity and other setup parameters. Exit by pressing the NEXT button until EXIT is displayed, then press EXIT. If either the STEP or LF buttons are not touched for three minutes, the EDM-900 will revert to automatic scan mode (1 to 9 seconds or 0 no scan). Depressing the STEP button will stop the automatic mode and revert to manual mode. Refer to the EDM-900 Pilot's Guide Rev. IR or later for additional operating information.

Remote Alarm Light (RAL) for EDM 900

The remote alarm light is a red or yellow light depending on the alarm condition. The EDM-900 incorporates a light that alerts the pilot that a parameter has reached a caution range or limit. This light is mounted in front of the pilot, labeled "ENGINE". The light flashes depending on the condition "Warning" (Red) or "Caution" (Yellow). All Alert and Alarms will be displayed in the "Message Area" of the Display. On initial startup or whenever power is turned on, the words EDM-900 PRIMARY" are displayed in the Message Area, followed by the make and model of the aircraft with STC information for which the primary limits were set.

Alarm Limits

Primary alarm limits for each specific aircraft model are set by JPI and are not programmable by the pilot. The primary functions for your installation are shown on the Primary label on the back of the instrument and are identical to those specified in the FAA Approved (AFM) Airplane Flight Manual or (POH) Pilot's Operating Handbook.

Whenever a parameter reaches an alarm limit, the display and the "RAL" will flash red. Also a soft key label "Clear" will appear. Tapping the CLEAR soft key will acknowledge and extinguish the soft key label, the red display warnings on the main display and on the RAL. If another lower priority alarm exists, it will then be displayed in the Message Area but the offending primary parameter remains red. Each press of the CLEAR button will allow any lower priority alarm to be displayed, thus presenting the pilot with the highest priority alarm condition. If the primary gauge has a yellow caution area it will activate the RAL (yellow) if that parameter is reached. Clear will deactivate this alarm until the parameter is reset and reactivated again.

Alarm hierarchy for the EDM-900

- | | | | |
|-------------|-----------|--------------|----------------|
| 1. OILP_LO. | 6. MAP. | 14. CLD. | 18. AMPS. |
| 2. OILT_HI. | 7. RPM. | 15. OILT_LO. | 19. RES. |
| 3. CHT. | 8. CDT. | 16. VOLTS. | 20. EGT. |
| 4. TIT. | 9. FP_LO. | 17. OILP_HI. | 21. Fuel Flow. |
| 5. FLVL. | 10. REM. | | |

CAUTION

Alerts Lights do not indicate high or low, pilots must crosscheck the EDM-900 to determine whether a high limit exceedance has changed to a low limit exceedance or vice versa.

Dimming

Automatic dimming is provided to dim the panel display. Dimming can also be accomplished manually. Tapping the third button (labeled DIM/BRT) puts you in the increase or decrease brightness mode showing LCD % brightness. Manual dimming overrides the automatic dimming feature. When switching electrical power off and on, the system defaults to automatic dimming at full bright.

II. OPERATING LIMITATIONS

- A. The EDM-900 may replace any existing RPM, MAP, EGT, CHT, CDT, TIT, OIL T, OIL P, F-P, FF, CDT and Fuel Quantity indicators required by the aircraft type design.
- B. The EDM-900 must not be used as primary if the RAL is not working.
- C. This Pilot's Guide must be available to the pilot for all flight operations.

III. EMERGENCY PROCEDURES

- A. Loss of individual display parameter:
 1. Continue normal engine operation by referring to the remaining parameters displayed. Note the RAL will indicate limits even if the display fails and the rest of the unit is functional.
- B. Loss of all displays (Electrical Failure):
 1. Avoid high engine power settings and rapid power changes;
 2. Enrichen mixtures to maintain smooth engine operation;
 3. Arrange to terminate the flight safely and as soon as practicable.
 4. Refer to your original airplane AFM for possible additional engine instrument failure information.

IV. NORMAL PROCEDURES

a. PRIMARY FUNCTIONS

Before each flight on startup, verify that the RAL is working it should flash Red and Yellow. Whenever main electrical power is turned on the EDM-900 performs a self-test procedure. Gauges not functioning will have a red x across them which identifies as inoperative. The message area, located below the EGT/CHT display will display open probes. The EDM must maintain functionality upon cranking the engine.

b. ENGINE MIXTURE LEANING

Refer to the 'EDM-900 Pilot's Guide' for detailed instructions on 'rich of peak' and 'lean of peak' operation.

After establishing desired cruise-power, depress the LF button to activate the Lean Find Mode. As the mixture is leaned, one cylinder's column will begin blinking; indicating the EGT for that cylinder has peaked. Continue with the leaning procedure, enriching as recommended by the aircraft manufacturer while monitoring the primary engine instruments. Once the leaning procedure has been completed, depress the EXIT button briefly to exit the Lean Find Mode and enter the Monitor Mode.

CAUTION

Comply with manufacturer's Airplane Flight Manual leaning procedures.
Do not exceed applicable engine or aircraft limitations.