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

**EDM-930 PRIMARY ENGINE DATA MANAGEMENT SYSTEM**

**Airplane Flight Manual Supplement No. 930-0001 Rev. C**

**For**

**Single Engine Reciprocating Engine Powered Aircraft as listed on STC SA01435SE**

**REG. NO.** \_\_\_\_\_

**SER. NO.** \_\_\_\_\_

This Supplement must be attached to the FAA Approved Airplane Flight Manual when the J.P. Instruments EDM-930 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-930 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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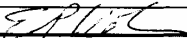
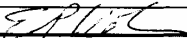
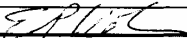
  
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for Manager  
Seattle Aircraft Certification Office  
Federal Aviation Administration  
Transport Airplane Directorate

Date: DEC 10 2004

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EDM-930 Airplane Flight Manual  
Supplement No. 930-0001 Rev. C

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## I. GENERAL

The EDM-930 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 all previous primary digital and/or analog instruments (The label of the parameter shown on the instrument is indicated in the first parenthesis);[ the acronym shown in the alarm displays is shown in the second parenthesis]:

1. Engine rotational speed (RPM)(RPM)
2. Engine Manifold Pressure (MAP)(MAP)
3. Engine Cylinder Head Temperature (CHT)((CHT)
4. Engine Exhaust Gas Temperature (EGT)(EGT)
5. Engine Oil Temperature(OIL-T) (O-T)
6. Engine Oil Pressure (OIL-P)(O-P)
7. Fuel Pressure(FUEL-P)(F-P)
8. Fuel Flow (FF)(FF)
9. Fuel Quantity (QTY-LF and QTY-RT) (None)
10. Alternator/Generator Output – Volts (VOLTS)(BUS) and Amps(AMPS)(AMP).
11. Outside Air Temperature (OAT)(None)
12. Turbocharger Compressor Discharge Temperature – {Primary on some turbocharged engines} (CDT)(CDT).
13. Turbine Inlet Temperature - {Primary on some turbocharged engines} (TIT)(TIT)
14. Induction Air Temperature (IAT)(IAT) or Carburetor inlet temperature (CARB)(CRB)

### Display

Non-primary functions Induction air temperature, carburetor inlet temperature, EGT Span, bus voltage and Amps, Shock Cooling, Fuel Remaining, Fuel Required, Fuel Reserve, MPG, Endurance, and Fuel Used have programmable alarm limits. CHT, TIT, EGT, F-P, FF, and MAP may not be primary on some installations. Any of these non-primary functions are programmable.

The right hand side of the EDM-930 display has 9 vertical scale columns with a digital value below each column. The nine functions are: OIL-T, OIL-P, FUEL-P, OAT, VOLTS (or CDT, for engine installations having a primary compressor discharge temperature), AMPS, FF, and two fuel tank quantities (QTY-LF, QTY-RT). The engine RPM and MAP are presented in the upper left corner of the instrument. The EGT, CHT and TIT are presented in the lower left corner. Below the EGT/CHT columns is a message center that displays the digital values of the EGT/CHT/TIT and additional functions like shock cooling and caution and limit alarm messages.

Specific values for each parameter are displayed digitally above the vertical scale displays of EGT, CHT, and TIT. The highlighted indicator below the columns indicates which cylinder's digital information is presently displayed as an alarm in the message center or when manually or automatically stepping through the parameters.

### Programming

Depressing the LF and STEP buttons simultaneously enters the program mode to enter fuel quantities, display scan rate, OAT display to °F or °C, EGT digital display resolution to 1 or 10° and other setup parameters. Exit by depressing STEP. If either the STEP or LF buttons are not pushed for three minutes, the EDM-930 will revert to automatic scan mode. Depressing the STEP button will stop the automatic mode and revert to manual mode. Refer to the EDM-930 Pilot's Guide Rev. B or later for additional operating information. This Pilot's Guide must be available to the pilot for all flight operations.

### Remote Alarm Display (RAD)

The RAD is a 0.2" high, 8 character independent display. The RAD will still function if the main display is inoperable. An alarm such as the CHT on cylinder number 2 is 480 is displayed as 480CHT2. The label CHT2 will flash whenever an over-temperature exists and will extinguish when the temperature falls below the limit temperature. Other alarms would be displayed as, for example: 2780 RPM, 15 O-P, 34 F-P, 240 O-T.

The RAD is located directly in front of the pilot and displays digital caution and limit exceedances when any of the parameters has reached its preset trigger point. Whenever limit alarms are not triggered, the RAD continuously displays MAP and RPM. On initial startup or whenever power is turned on, the words "EDM-930 PRIMARY" is displayed, followed by the make and model of the aircraft for which the primary limits are set.

### Alarm Limits

Whenever a parameter reaches the programmed *caution* trigger point, the main display will flash the *amber colored* word ALERT and the parameter acronym. Tapping the STEP button extinguishes these warnings.

Similarly, whenever a parameter reaches a programmed *limit* value, the display and the RAD will flash the *red colored* word ALERT and the acronym. Tapping the STEP button will extinguish the red display warnings on the main display but the RAD will also continue to flash the acronym until the parameter is not at or beyond the limit value.

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Primary alarm *limits* for each specific aircraft model are set by JPI and are not programmable by the pilot. These include some or all of the following: CHT, CDT, EGT, O-T, O-P, F-P, QTY-LF, QTY-RT, MAP, RPM, FF, IAT, CARB, and TIT. 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 Airplane Flight Manual/Pilot's Operating Handbook.

For caution alarms, primary digits and acronyms are flashed in *amber* at the original manufacturer's published caution points or, if none is specified, at a specific temperature below the programmed limit. For example, O-T and CDT alarms will flash 20°F below the actual factory limit. CHT will flash 40°F below, and TIT 50°F below the programmed limits. Fuel and oil pressure caution alarms will only flash if there is a published caution range

When a *caution* range is reached, the pilot can momentarily depress the STEP button to extinguish the particular flashing alarm acronyms. If another parameter has also reached its limit, that label will then begin to flash. The pilot should continue to monitor the affected functions as he would if a conventional analog display had reached a limit. The bar graph functions of CHT, EGT, and TIT remain displayed at all times.

### ***Dimming***

Automatic dimming is provided to dim both the panel display and the remote alarm display. Dimming can also be accomplished manually. Tapping the far right hand button (labeled Brightness) decreases brightness. Continuously holding this button increases brightness. Manual dimming overrides the automatic dimming feature. When switching electrical power off and on, the system defaults to automatic dimming.

## **II OPERATING LIMITATIONS**

- a. The EDM-930 may replace any existing RPM, MAP, EGT, CHT, CDT, TIT, O-T, O-P, F-P, FF, and Fuel Quantity indicators required by the aircraft type design or operating limits.
- b. The EDM-930 cannot be used as primary if the RAD is not working.

## **III. EMERGENCY PROCEDURES**

- A. Loss of individual display element:
  1. Continue normal engine operation by referring to the remaining parameters displayed.
- B. Loss of all displays (Electrical Failure):
  1. Avoid high engine power settings and rapid power changes;
  2. Enrichen Mixture to maintain smooth engine operation;
  3. Arrange to terminate the flight safely and as soon as practicable.

## **IV. NORMAL PROCEDURES**

### ***a. PRIMARY FUNCTIONS***

Before each flight, verify that the RAD is working. Whenever main electrical power is turned on the EDM-930 performs a self-test procedure which identifies by the message center any inoperative parameters. During engine start, there may be a power interruption to the EDM-930 while the starter is engaged.

### ***b. ENGINE MIXTURE LEANING***

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 STEP button briefly to exit the Lean Find Mode and enter the Monitor Mode.

### **CAUTION**

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

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