

EDM 900

(our flight engineer)

For N52633

Sept. 7, 2012

Agenda

- Features/Benefits
- Display & Buttons
- Fueling the aircraft
- LeanFind
- Normalized/Percentage view
- Usage during phases of flights
- GPS info

Features

- Engine protection
- Automatic scanning with programmable alarms
- Fuel flow/fuel remaining with GPS interface Lean assistance with LeanFind

Benefits

- Improved efficiency
- Greater fuel economy
- Smoother engine operation
- Reduced maintenance costs
- Reduced operating costs
- Proper engine temperatures
- Reduced engine vibration
- Extended engine life

Your EDM 900

Engine RPM

1000-2700 **2700-2800**

Oil Temp °F

100 100-225 **225-250**

Oil Pressure (psi)

15 15-30 30-90 90-100 **100**

Fuel Remaining

0-**10** 10-40

Manifold Pressure (MAP) not used

RPM/MAP section

Bar Graphs section

Outside Air Temp (OAT) °C

-46 - 38

EGT °F (bar chart)

850-1600 1600-1650 **1650-1700**

CHT °F

(Missing segment in bar chart)

250-425 425-450 **450-500**

Amps

0-60 **60**

CLD (Shock cooling) °F per min.

0-60 **60-100**

Endurance Alarm: 45 min.
EGT Diff Alarm: 500 °F

Scanner section

Fuel Flow

0-**1** 1-15

Volts

24 24-26 26-30 **30**

Fuel Used

0-40

Tap STEP to disable current alarm for 10 minutes
Hold until OFF appears to disable for flight.



Your EDM 900

Auto scan mode starts 10 minutes after engine start

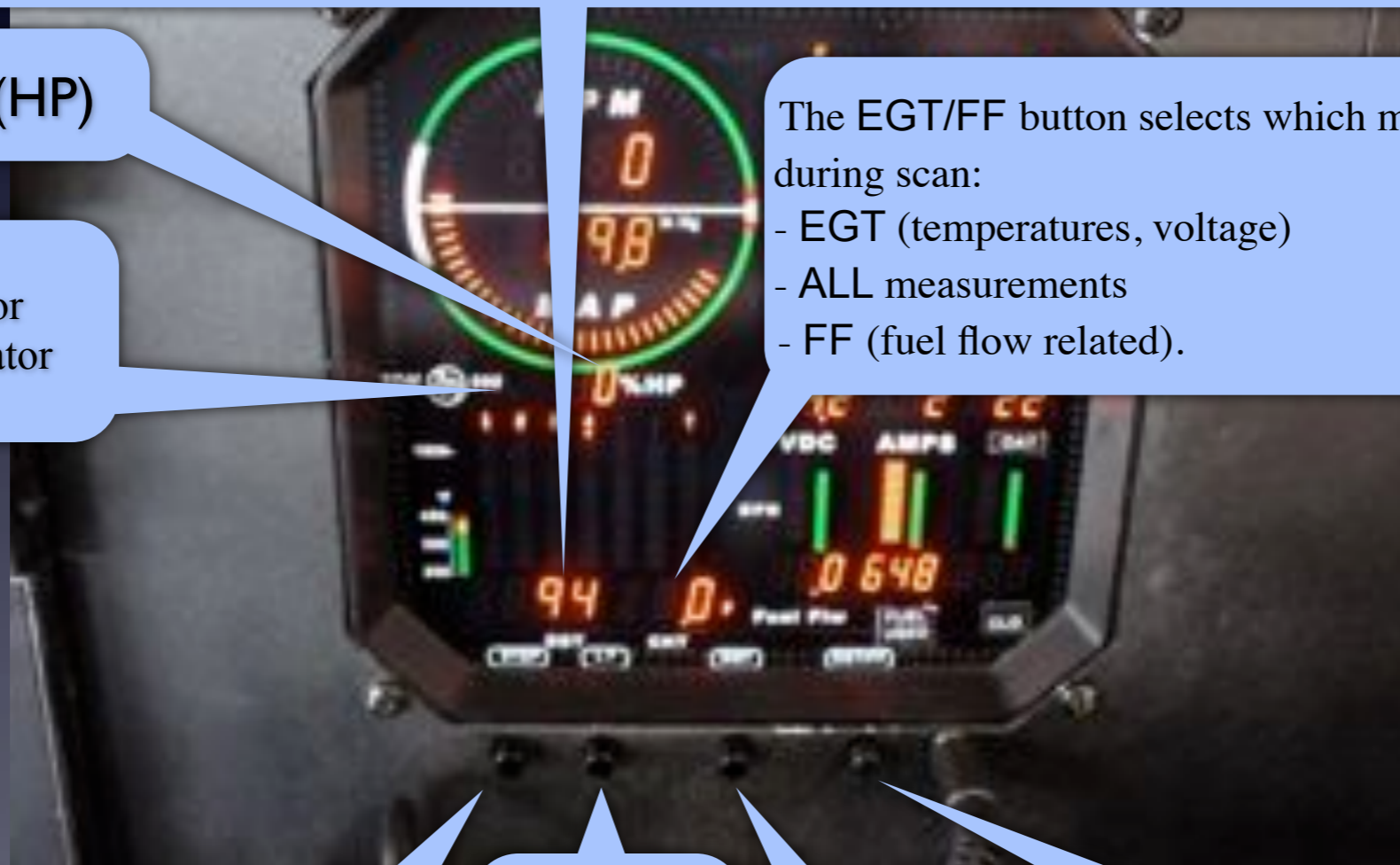
- STEP for Manual mode (Tap STEP to sequence forward, hold STEP to sequence continuously backwards)
- LF then STEP for Auto scan mode (or wait 5 min)

% Horse Power (HP)

Normalized (NRM) or Percentage view indicator

The EGT/FF button selects which measurements are displayed during scan:

- EGT (temperatures, voltage)
- ALL measurements
- FF (fuel flow related).



STEP

LeanFind
LF

GMT ??

EGT/FF

Bottom of Scanner Section

EGT/FF button

EGT	ALL	FF	Display	Description
X	X		1340 376	EGT left, CHT right
X	X		1370 TIT	Turbine Inlet Temperature
X	X		-30 CLD	Rate of shock cooling
X	X		14.2 BAT	Avionics bus voltage
X	X		81 OAT	Outside air temperature option
X	X		300 CDT	Compressor discharge option
X	X		125 IAT	Induction air option
X	X		132 C I	Compressor minus induction difference
X	X		-22 CRB	Carburetor option
X	X		80 DIF	Difference between hottest and coldest EGT
	X	X	37.2 REM	Fuel remaining
	X	X	25.9 REQ	Fuel required to wpt (GPS connected)
	X	X	11.3 RES	Fuel reserve at wpt (GPS connected)
	X	X	13.0 MPG	Miles per gallon (GPS connected)
	X	X	02.45 H.M	Fuel time to empty
	X	X	13.5 GPH	Gallons per hour
	X	X	38 USD	Fuel used since fill or reset

Fueling the Aircraft

At power up you will see `FILL? N.`

- Tap LeanFind (LF) to see `FILL 40.`
- If the tanks are full, tap `STEP` to accept the displayed value and exit.
- Otherwise, tap LeanFind (LF) to see `FILL +` to add or remove fuel from the amount shown. Hold LF to count up, tap LF to count down. Then tap `STEP` to accept the displayed value and exit.

(If you forgot to do it at power up, hold both `STEP` and `LF` until display show `PROGRAM .` Let go and you will then see `Fuel N.` Tap LF to see `Fill` followed by `Fill N?` then go to the top bullet)

LeanFind

(Rich of peak)

- Establish cruise at less than 65-75% power.
- Pre-lean the mixture to 50°F estimated rich of peak EGT on any cylinder e.g. 1490 370 (EGT and CHT temps)
- Wait one minute to let engine stabilize.
- Tap the LF button LEAN R will be displayed. Start LeanFind. (To exit at any time, tap STEP)
- Lean the mixture—approx. 10°/second *without pausing* or 1/4 turn per second—while observing the display. When there is a 15°F rise in EGT, LeanFind mode becomes active. e.g. 1520 13.8 (EGT and fuel flow). A flashing cylinder DOT indicates hottest cylinder and that LeanFind mode is active.
- Stop leaning when a column begins flashing. You will see LEANEST above the bars for two seconds, followed by: e.g. 1545 12.4 Due to thermal inertia this will usually be about -15°F lean of peak.
- Hold LF and the captured peak EGT value will be displayed e.g. 1560 12.4
- Release LF
- Slowly enrich the mixture. The temperature will increase, returning to peak. e.g. 1560 13.8 Stop enriching at the desired EGT.
 - Best economy (Peak EGT) e.g. 1560 11.8
 - Best power (100° rich of peak) e.g. 1460 14.2

For peak EGT, Lycoming recommends a power setting of less than 75%

Normalize/Percentage view

(Hold LeanFind (LF) for three seconds to change views.)

- Percentage view (when the NRM icon is *not* lighted) (default):
 - the columns indicate percent of EGT red line. A maximum height column depicts 100 % of red line (1650°F) and a one segment-high column depicts 50 % of red line (825°F). The *Percentage view* permits comparison of EGTs *across all* cylinders. Hotter cylinders display higher columns than cooler cylinders. Use in climb and descent.
- Normalize view (when the NRM icon is lighted):
 - the EGT columns are displayed normalized. When you change to the Normalize view, all columns are initially set to the same half-height level for trend analysis. Any changes are shown as an increase or decrease in column height. **A one-segment change in column height represents a 10°F change.** The Normalize view permits rapid visualization of EGT *trends*, rather than a percentage of red line. You can use normalize in level cruise and run-up.

Usage during phases of flight

- Startup
 - Fuel Fill
- Run-up
 - Set engine to run-up RPM, normalize (NRM) view, manual mode
 - Verify uniform rise in EGTs of 50° for single magneto mode.
 - Check for low voltage, Oil Temp and Oil Pressure, high CHT, drop in EGT.
- Take off, Climb, Full throttle operation
 - Percentage view, automatic mode
 - Verify EGT/CHT consistent with past performance (100° to 300° F cooler than in cruise)
 - Check for high EGT on one cylinder.
- Cruise
 - LeanFind to lean mixture
 - Normalize (NRM) view, automatic mode
 - Abnormal patterns of EGT/CHT (see manual)
- Decent
 - Percentage view, manual mode
 - Check for Shock cooling (CLD) -40°F/min should be normal, -60°F/min is excessive.

GPS connection

- Fuel information, including fuel on board (fob) and flow are passed to the GNC300XL (you do not have to enter the information in the GNC300XL as described in the manual)
- The GNC300XL will then calculate (see pg. 25 of the manual)
 - range (rng) (distance before empty)
 - endurance (time before empty)
 - fuel left on board (lfob) after the selected direct-to, leg, or route is flown.
 - reserve time that will remain after the selected direct-to, leg, or route is flown.

```
118.30 124.30  
wpt:      KICT →KDFW  
gs: 140kT flow: 10.0gL  
rng 504.0nM lfob 16gL
```

```
118.30 124.30  
wpt:      KICT →KDFW  
fob: 36gL flow: 10.0gL  
endur 3:36 rsv 1:33
```

Questions?