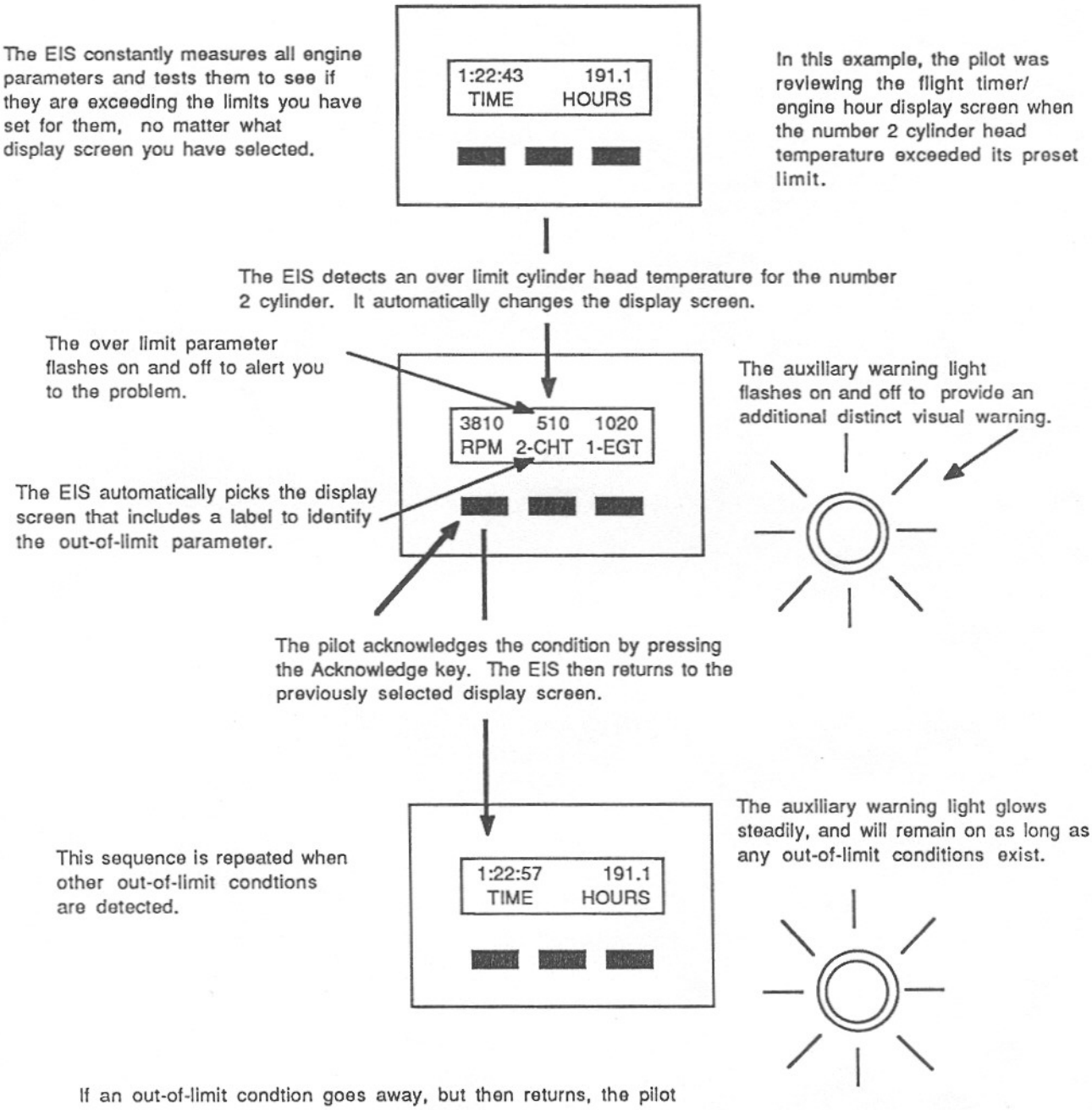

Figure 3. Annunciation of Warning Conditions

2.1 Before Each Flight.

The following checklist should be performed before each flight:

1. After powering up the EIS, verify that all engine limits are correct and that the engine measurement parameter (EMP) is correct. Verify that the auxiliary warning light illuminates while the "Set" pages are displayed.

2. Select the desired display page, other than a "Set" page. Since the EIS will automatically select the appropriate display page to annunciate warning conditions when they exist, it is not necessary to select any particular display page to be properly alerted. The EIS is now ready for flight.

   NOTE: Like any device, it is possible for the instrument or its sensors to suffer various kinds of failures. It is good practice to review the various display pages periodically as necessary to verify that the instrument and its sensors are operating normally.

3 SET PAGES

The "Set" pages are used to enter engine limits and other selections into the EIS. These pages are accessed by simultaneously pressing the two keys marked "SET LIMITS", as illustrated in figure 2. The use of the engine limits, and the other features controlled on these pages, are described below, in the order in which they are presented on the instrument. All entries on these pages are retained when the instrument is turned off.

Since all limits can be entered easily by the pilot at any time, it is practical to set engine limits lower than those indicated by the engine manufacturer, but slightly higher than encountered in normal operation. In this way, a change in normal engine operation may be detected earlier.

NOTE: Limits that are not used should be set to zero. This disables the limit to prevent nuisance false warnings.

CAUTION: While the "Set" pages are selected, the automatic warning feature of the instrument is disabled. This is necessary to allow the pilot the ability to change an engine limit in the presence of an engine parameter that is intermittently outside of its limit. The auxiliary annunciator light is illuminated while the "Set Limits" pages are selected to remind you that the warning feature has been disabled—and as a convenient means of testing this light.

Entries that are made on the "Set" pages are as follows:

- **Time** – This limit is used to generate a warning when the flight timer has exceeded the entry made on this page. The time limit is entered in minutes (i.e., a time limit of 1 hour 30 minutes would be entered as 90).

- **Contrast** – The contrast of the LCD display is set on this page. A contrast number is displayed on this page. Four levels of contrast may be selected, 0-3, with 0 being minimum contrast, and 3 being maximum. Make your selection to achieve the most desirable appearance of the display. It will normally only be necessary to set your contrast selection after the initial installation of the EIS, or when temperature extremes are encountered.

- **RPM** – The engine's RPM limit is entered on this page. A warning will be generated when the engine's RPM, as sensed by the instrument, exceeds this limit.

- **CHT** – The engine's cylinder head temperature limit is entered on this page. A warning will be generated when a cylinder head temperature, as sensed by the instrument, exceeds this limit.

- **EGT** – The engine's exhaust gas temperature limit is entered on this page. A warning will be generated when an exhaust gas temperature, as sensed by the instrument, exceeds this limit.

- **TEMP** – The engine's coolant or engine oil temperature limit is entered on this page. A warning will be generated when the temperature, as sensed by the instrument, exceeds this limit.

- **COOL – Advanced EIS – W model only** – The engine's coolant temperature limit is entered on this page. A warning will be generated when the temperature, as sensed by the instrument, exceeds this limit.

- **VOLT – All models, except Advanced EIS – W** – A lower limit for the voltmeter input is entered on this page. A warning will be generated when this voltage is lower than this limit. The EIS will maintain full accuracy until the +12 V power supplied to it drops below 9 V. This makes it feasible to set a limit as low as 9 V when monitoring your 12 V electrical system, although a limit of about 12-13 Volts is recommended to provide the earliest practical warning.

- **Display page** – This page is used to define which display page will be selected when the "Display" key is pressed. Enter the page number, 0-5, corresponding to the page you have selected. (Figure 1 illustrates the page numbers for the various pages.) Your "selected" page will be displayed when the "Display" key is pressed. Your selected page will also be displayed when the instrument turns on, and after the last "SET" page.

- **AuxHi – Advanced EIS Only** – The upper limit for the auxiliary input is set on this page. This is ideally suited for such uses as an upper limit on manifold pressure. A warning will be generated when the auxiliary input exceeds this limit.

- **AuxLo or AUX** – The lower limit for the auxiliary input is set on this page. This is ideally suited for such uses as a lower limit on fuel level. A warning will be generated when the auxiliary input falls below this limit.

4 CONFIGURATION SET PAGES

The "Configuration Set" pages are used to enter information unique to your particular installation. **To access these pages, press the center and right keys simultaneously for 3 seconds.** These separate pages are used to safeguard this data from unintentional changes that could occur if this data had been entered in the previously described "Set" pages.

Entries that are made on the "Configuration Set" pages are as follows:

- **Options** – All options are controlled by the settings on this page. The particular combination desired is selected with the "UP" and "DOWN" keys. These options are indicated by the symbols as shown in the following table.

Table 1. Options Symbols

Symbol	Description	
W/S	W = Warning Light Output	S = Serial Channel Output
+/–	+ = Normal Aux Sensing	– = Reverse Aux Sensing
F/C	F = Fahrenheit Temperatures	C = Celsius Temperatures
e/E	E = EGT displayed in 10's	e = EGT displayed in 1's
c/C	C = CHT displayed in 10's	c = CHT displayed in 1's

- The "W/S" selection determines whether the warning light output is used to control a warning light, the "W" selection—or is used as a serial channel output, the "S" selection. **NOTE:** This selection is available on the Advanced EIS only.

- The "Reverse Aux Sensing" causes the AUX display to start at its maximum when input is 0 volts, and then to decrease to its minimum as this voltage reaches 5 volts. This feature proves very useful for correcting a "backwards" reading fuel display, for instance.

- The "F/C" selection allows you to chose whether all temperature information is displayed in degrees Fahrenheit, or degrees Celsius. **CAUTION: The limits entered for all temperature data are not changed by this option. Be sure to enter temperature limits in same units as you have chosen for display.**

- The "E/e" and "C/c" options allow you to select the EGT and CHT displays in 10-degree or 1-degree increments. (The larger letter corresponds to the larger increment.)

- **Engine Type Selection (EMP)** – The EIS is able to sense engine RPM correctly from practically any engine using a connection to its lighting coil, if the engine is so equipped, or via various optional accessories. To account for the various differences between engines, an Engine Measurement Parameter (EMP) is entered on the "EMP Set" page.

- **Setting the EMP – Standard EIS**

  - When sensing RPM using a connection to the lighting coil, set EMP to 20 for CDI equipped Rotax Engines. Set it to 60 for non-CDI Rotax or any Hirth engine. These settings are typical of other makes of engines also. In general, the EMP can be set according to the number of magnets on the flywheel of the engine. For flywheels with 12 magnets, enter an EMP of 20; for 8 magnets, enter 30; for 6 magnets, enter 40; and for 4 magnets, enter 60. (Refer to your engine manual to determine the number of magnets on your flywheel, or try an EMP of 20 or 60, as 12 or 4 magnets on the flywheel are most common.)
  - When using the magnetic tach sensor, or other means, the correct EMP setting may be determined by dividing 120 by the number of pulses provided to the instrument per revolution of the engine. For more information, consult the description for the Advanced EIS EMP setting (below) regarding the number of pulses per revolution of the engine.
  - **NOTE:** Power to the EIS must be turned off and then back on before the new entry will be used. The EIS comes from the factory programmed for CDI-equipped Rotax engines, and thus EMP will be 20. No change is required if your engine is CDI-equipped.