



**Figure 3-7. Typical engine information system.**

each individual screen will clearly identify the information being displayed.

The information systems are also capable of alerting the pilot when any engine or flight parameters are exceeded, usually via a warning light mounted on the instrument panel. Although the EIS is a valuable tool, the ability to interpret the information is equally important.

For the interpretation of any engine and flight instrument, you need to completely understand the engine limitations, parameters, and the messages the instrument provides you. Sensing the proper operation of the aircraft and engine is a key factor to the safe operation of any aircraft. Being able to interpret engine sounds and unusual vibrations is essential for any pilot.

As with any aircraft or instrument operation, see the POH for each individual make and model operating instructions.

## Additional Equipment

A GPS can sometimes be used to determine ground speed while flying. A GPS is also a useful tool to enhance navigation for cross-country flying. Review Chapter 14 of the *Pilot's Handbook of Aeronautical Knowledge* for information on the calculations associated with determining wind speed, ground speed, fuel consumption, and time enroute.

Communication and navigation radios, transponders, GPS and LORAN receivers are not required to fly a powered parachute in Class G airspace. You must

have the required equipment on board to operate in Class B, C, D or E airspace.

Equipment requirements can be found in the regulations. Powered parachutes must meet these requirements. Even though many powered parachutes have strobe lighting to aid in the visual sighting of the aircraft, additional positional lighting is required for night operations. See Chapter 12 for more information.

## Electrical System

Powered parachutes are typically equipped with a 12 volt direct-current electrical system. A basic powered parachute electrical system consists of a magneto, alternator or generator, battery, master/battery switch, voltage regulator, and associated electrical wiring.

Electrical energy stored in a battery provides a source of electrical power for starting the engine and a limited supply of electrical power for use in the event the alternator or generator fails.

The electrical system is turned on or off with a master switch. Turning the master switch to the ON position provides electrical energy to all the electrical equipment circuits with the exception of the ignition system. Equipment that commonly uses the electrical system for its source of energy includes:

- Position lights.
- Anticollision lights.
- Instrument lights.
- Radio equipment.
- Electronic instrumentation.
- Electric fuel pump.
- Starting motor.

Fuses or circuit breakers are used in the electrical system to protect the circuits and equipment from electrical overload. Spare fuses of the proper amperage limit should be carried in the powered parachute to replace defective or blown fuses. Circuit breakers have the same function as a fuse but can be manually reset, rather than replaced, if an overload condition occurs in the electrical system. Placards at the fuse or circuit breaker panel identify the circuit by name and show the amperage limit.

An ammeter is used to monitor the performance of the electrical system. The ammeter shows if the alternator/generator is producing an adequate supply of electrical power. It also indicates whether or not the battery is receiving an electrical charge.