

## Flight Limits

Flight Limits list authorized maneuvers with appropriate entry speeds, flight load factor limits, and types of operation limits. It also indicates those maneuvers that are prohibited, such as spins or acrobatic flight, as well as operational limitations such as flight into known icing conditions.

## Placards

Most aircraft display one or more placards that contain information having a direct bearing on the safe operation of the aircraft. These placards are located in conspicuous places and are reproduced in the Limitations section or as directed by an Airworthiness Directive (AD). [Figure 9-5] Airworthiness Directives are explained in detail later in this chapter.

## Emergency Procedures (Section 3)

Checklists describing the recommended procedures and airspeeds for coping with various types of emergencies or critical situations are located in the Emergency Procedures section. Some of the emergencies covered include: engine failure, fire, and system failure. The procedures for inflight engine restarting and ditching may also be included. Manufacturers may first show an emergency checklist in an abbreviated form with the order of items reflecting the sequence of action. Amplified checklists that provide additional information on the procedures follow the abbreviated checklist. To be prepared for emergency situations, memorize the immediate action items and, after completion, refer to the appropriate checklist.



Figure 9-5. Placards are used to depict aircraft limitations.

Manufacturers may include an optional subsection entitled Abnormal Procedures. This subsection describes recommended procedures for handling malfunctions that are not considered emergencies.

## Normal Procedures (Section 4)

This section begins with a list of the airspeeds for normal operations. The next area consists of several checklists that may include preflight inspection, before starting procedures, starting engine, before taxiing, taxiing, before takeoff, climb, cruise, descent, before landing, balked landing, after landing, and post flight procedures. An Amplified Procedures area follows the checklists to provide more detailed information about the various previously mentioned procedures.

To avoid missing important steps, always use the appropriate checklists when available. Consistent adherence to approved checklists is a sign of a disciplined and competent pilot.

## Performance (Section 5)

The Performance section contains all the information required by the aircraft certification regulations and any additional performance information the manufacturer deems important to pilot ability to safely operate the aircraft. Performance charts, tables, and graphs vary in style, but all contain the same basic information. Examples of the performance information found in most flight manuals include a graph or table for converting calibrated airspeed to true airspeed; stall speeds in various configurations; and data for determining takeoff and climb performance, cruise performance, and landing performance. Figure 9-6 is an example of a typical performance graph. For more information on use of the charts, graphs, and tables, refer to Chapter 10, Aircraft Performance.

## Weight and Balance/Equipment List (Section 6)

The Weight and Balance/Equipment List section contains all the information required by the FAA to calculate the weight and balance of an aircraft. Manufacturers include sample weight and balance problems. Weight and balance is discussed in greater detail in Chapter 10, Weight and Balance.

## Systems Description (Section 7)

This section describes the aircraft systems in a manner appropriate to the pilot most likely to operate the aircraft. For example, a manufacturer might assume an experienced pilot will be reading the information for an advanced aircraft. For more information on aircraft systems, refer to Chapter 7, Aircraft Systems.