Chapter 1: Gliders & Sailplanes

Introduction

A modern glider, such as the one pictured below [*Figure 1-1*] can fly high and make long cross-country flights with a skilled pilot at the controls.

Figure 1-1. *A DG Flugzeugbau GmbH 800B-series glider.*

The Code of Federal Regulations (14 CFR part 1, section 1.1) states, “glider means a heavier-than-air aircraft, that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine.” The term “glider” also designates the rating placed on a pilot certificate once an applicant successfully completes required glider training, has the requisite experience, passes any required knowledge test, and passes the appropriate practical test.

For a glider to fly, it needs a means to become airborne. Early gliders could only launch from the top of a hill. [*Figure 1-2*] and [*Figure 1-3*].

Figure 1-2. *Otto Lilienthal (the Glider King) in flight during the mid-1890s.*

Figure 1-3. *Orville Wright (left) and Dan Tate (right) launched the Wright 1902 glider off the east slope of the Big Hill, Kill Devil Hills, North Carolina, on October 17, 1902. Wilbur Wright was flying the glider.*

After development of powered flight, an airplane could tow a glider to altitude, and this became a common means to launch a glider. While early glider designs would only descend after tow and release, later designs could release and take advantage of natural rising air to continue to gain altitude. Some gliders that require a tow to altitude also have a sustainer engine for use in flight. The pilot can start and stop the powerplant while in flight, and in some models, the pilot may retract the propeller system into the body of the glider for increased aerodynamic efficiency. A self-launching motor glider can takeoff and climb to soaring altitudes without a tow. [*Figure 1-4*]

Figure 1-4. *An ASH 26 E self-launching motor glider with the propeller extended.*

Glider Pilot Training

How does a person obtain glider flight training? With a general location in mind, an individual may consider several options, including an FAA-approved glider school, privately owned commercial glider school, or college, university, or private soaring club. These will have FAA-certified flight instructors who can provide instruction. Published articles, soaring-related websites, and discussions with other pilots may help a prospective student create a list of items to look for in a training provider.

An interested person should consider the quality of training provided. Good instruction follows a structured syllabus and a building block approach. Prior to picking a school, visiting the training provider and talking with management, instructors, and other students can reveal the pros and cons of choosing a particular club or commercial school. Before making a commitment, the prospective student should take an introductory lesson. After deciding on a provider and making the necessary arrangements, training can begin. Individual commitment to a regular training schedule maximizes student progress and retention.

To be eligible to fly solo in a glider, unrated pilots need to obtain a student pilot certificate, be at least 14 years of age, and demonstrate satisfactory aeronautical knowledge on a pre-solo written test administered by their instructor. Before solo,

a student pilot also receives ground and flight training for the maneuvers and procedures listed in Title 14 of the Code of Federal Regulations (14 CFR) part 61, section 61.87(i). After a student pilot meets the administrative requirements and demonstrates satisfactory proficiency, the instructor may endorse the student's logbook for solo flight.

Note that rated airplane pilots can increase their overall knowledge, skill, and understanding of safety of flight by adding a glider rating. The addition of a glider rating enhances an airplane pilot's ability to manage flight without power should an engine malfunction occur.

Rating Eligibility

A student pilot 16 years of age or older or an existing FAA-rated pilot who meets the flight time requirements may take the practical test for a sport pilot certificate with a glider endorsement or the practical test for a private pilot certificate with a glider rating after accomplishing the training requirements listed in 14 CFR part 61 for the desired level of certification.

To be eligible for a commercial or flight instructor glider certificate, an individual must be 18 years of age and complete the specific training requirements described in 14 CFR part 61.

The applicable FAA Airman Certification Standards (ACS) or Practical Test Standards (PTS) contain the knowledge and skills required for pilot certification and describe the testing process. Applicants may also refer to FAA-G-ACS- 2, the ACS Companion Guide for Pilots, FAA Advisory Circular (AC) 60-22, Aeronautical Decision Making; the Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25); the Risk Management Handbook (FAA-H-8083-2); and the Aviation Weather Handbook (FAA-H-8083-28) to gain additional aviation-related information. For more information on the certification of gliders, refer to 14 CFR part 21, the European Aviation Safety Agency (EASA) Certification Specifications (CS) 22.221, and the Weight and Balance Handbook (FAA-H-8083-1).

Medical Eligibility

A person may exercise the privileges of a glider rating or those of an authorized instructor in a glider without holding a medical certificate. However, 14 CFR part 61, section 61.53 states, "...a person shall not act as pilot in command, or in any other capacity as a required pilot flight crewmember, while that person knows or has reason to know of any medical condition that would make the person unable to operate the aircraft in a safe manner."

FAA Wings Program

Rated pilots should compare continuous training and practice to 14 CFR part 61, section 61.56(c)(1) and (2), which allow for training and a sign-off within the previous 24 calendar months in order to act as a pilot in command. Many astute pilots realize that this regulation specifies a minimum requirement, and the path to enhanced proficiency, safety, and enjoyment of flying takes a higher degree of commitment such as available using 14 CFR part 61, section 61.56(e). For this reason, many pilots keep their flight review up to date using the FAA WINGS program. The program provides continuing pilot education and contains interesting and relevant study materials that pilots can use all year round.

A pilot may create a WINGS account to obtain current information concerning risk mitigation. The program provides a means to improve risk management skill as a means to increase safety. As an added bonus, completion of a phase of the Wings Program can count for a flight review and participants may receive a discount on certain flight insurance policies. The link to create an account is www.faasafety.gov.

Chapter Summary

Gliders include heavier-than-air aircraft that need a means to become airborne. In a modern glider and once aloft, pilots have a variety of means to sustain flight. To become a glider pilot, a prospective student should investigate training options and pick a suitable training provider.