FAA-H-8083-11A

Balloon Flying Handbook

U.S. Department
of Transportation
Federal Aviation
Administration

Table of Contents

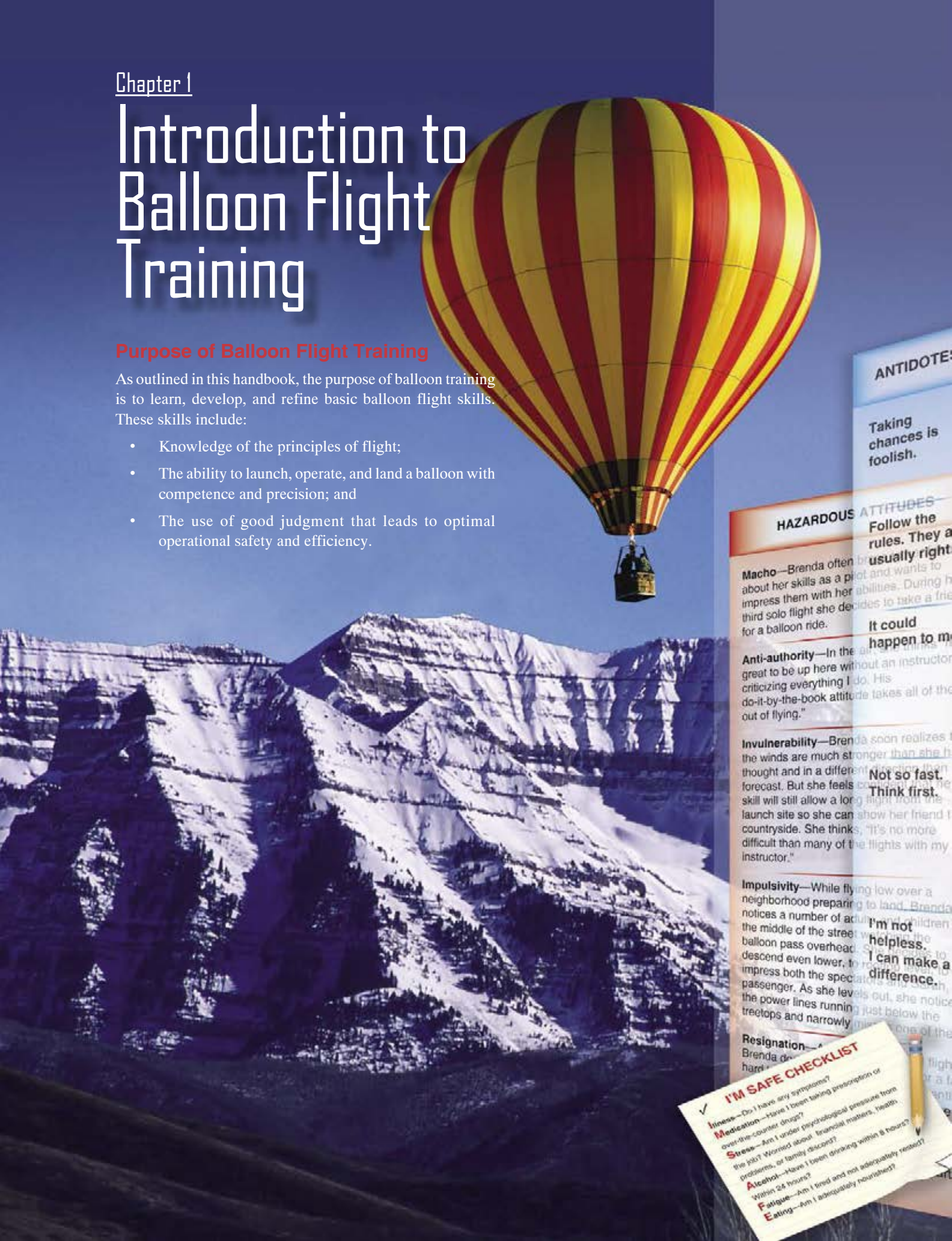
Chapter 1

Introduction to Balloon Flight Training

Purpose of Balloon Flight Training

As outlined in this handbook, the purpose of balloon training is to learn, develop, and refine basic balloon flight skills. These skills include:

- Knowledge of the principles of flight;
- The ability to launch, operate, and land a balloon with competence and precision; and
- The use of good judgment that leads to optimal operational safety and efficiency.



Learning to fly a balloon requires a specific set of motor skills:

- Coordination—the ability to take physical action in the proper sequence to produce the desired results while launching, flying, and landing the balloon.
- Timing—the application of muscle coordination at the proper time to make the flight, and all maneuvers incident to it, a constant smooth process.
- Control touch—the ability to interpret, evaluate, and predict the actions and reactions of the balloon with regard to attitude and speed variations, by interpreting and evaluating varying visual cues and instrument readings.
- Situational awareness—the ability to sense instantly any reasonable variation of altitude, airspeed, and directional change, as well as a constant perception of relative position to ground-based structures and planned flight track.

A skilled pilot becomes one with the balloon and learns to assess a situation quickly and accurately. He or she also develops the ability to select the proper procedure to follow in a situation, to predict the probable results of the selected procedure, and to exercise safe practices. In addition, a skilled pilot learns to gauge the performance of the balloon being flown and to recognize not only personal limitations, but also the limitations of the balloon. This knowledge helps the pilot to avoid reaching personal or machine critical points.

Developing the skills needed to fly a balloon requires time and dedication on the part of the student pilot, as well as the flight instructor. Each balloon has its own particular flight characteristics, and it is not the purpose of balloon flight training to learn how to fly a particular model balloon. The purpose of balloon flight training is to develop skills and safety habits that can be transferred to any balloon. The pilot who acquires the necessary flight skills during training, and demonstrates these skills by flying with precision and safe flying habits, easily transitions to different model balloons. Student pilots should also remember that the goal of flight training is to develop a safe and competent pilot. To that end, it is important for the flight instructor to insure the student pilot forms the proper flying habits by introducing him or her to good operating practices from the first training flight.

Role of the Federal Aviation Administration (FAA)

The United States Congress has empowered the Federal Aviation Administration (FAA) to promote aviation safety by establishing safety standards for civil aviation. The FAA accomplishes this goal through the Code of Federal Regulations (CFR). Title 14 of the Code of Federal Regulations (14 CFR) part 61 pertains to the certification of pilots, flight instructors, and ground instructors. 14 CFR part 61 defines the eligibility, aeronautical knowledge, flight proficiency, as well as training and testing requirements for each type of pilot certificate issued.

14 CFR part 91 contains general operating and flight rules. The section is broad in scope and provides general guidance in the areas of general flight rules, visual flight rules (VFR), instrument flight rules (IFR), aircraft maintenance, and preventive maintenance and alterations.

Within the FAA, the Flight Standards Service promotes safe air transportation by setting the standards for certification and oversight of airmen, air operators, air agencies, and designees. It also promotes safety of flight of civil aircraft and air commerce by:

- Accomplishing certification, inspection, surveillance, investigation, and enforcement;
- Setting regulations and standards; and
- Managing the system for registration of civil aircraft and all airmen records.

The focus of interaction between the FAA Flight Standards Service and the aviation community and general public is the Flight Standards District Office (FSDO). *[Figure 1-1]* The FAA has approximately 130 FSDOs. These offices provide information and services for the aviation community. FSDO phone numbers are listed in the blue pages of the telephone directory under United States Government Offices, Department of Transportation, Federal Aviation Administration. Another convenient method of finding a local office is to use the FSDO locator available on the Regulatory Support Division's website: http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs600.

In addition to accident investigation and the enforcement of aviation regulations, the FSDO is also responsible for the

Figure 1-1. *Atlanta Flight Standards District Office (FSDO).*

certification and surveillance of air carriers, air operators, flight schools and/or training centers, and airmen including pilots and flight instructors. Each FSDO is staffed by aviation safety inspectors (ASIs) who play a key role in making the United States aviation system safe. They administer and enforce safety regulations and standards for the production, operation, maintenance, and/or modification of aircraft used in civil aviation. They also specialize in conducting inspections of various aspects of the aviation system, such as aircraft and parts manufacturing, aircraft operation, aircraft airworthiness, and cabin safety. ASIs must complete a training program at the FAA Academy in Oklahoma City which includes airman evaluation and pilot testing techniques and procedures. Inspectors also receive extensive on-the-job training and they receive recurrent training on a regular basis. The FAA has approximately 3,700 inspectors located in its FSDO offices. All questions concerning pilot certification (and/or requests for other aviation information or services) should be directed to the local FSDO.

Role of the Designated Pilot Examiner (DPE)

Among other duties, ASIs are responsible for administering FAA practical tests for pilot and flight instructor certificates and associated ratings. The administration of these tests is normally carried out at the FSDO level, but the agency's highest priority is making air travel safer by inspecting aircraft that fly in the United States. To satisfy the need for pilot testing and certification services, the FAA delegates certain responsibilities to private individuals who are not FAA employees, but designated pilot examiners (DPEs).

A DPE is an individual, appointed in accordance with 14 CFR part 183, section 183.23, who meets the qualification requirements of FAA Order 8710.3, Pilot Examiner's Handbook, and who:

- Is technically qualified;
- Holds all pertinent category, class, and type ratings for each aircraft related to their designation;
- Meets the requirements of 14 CFR part 61, sections 61.56, 61.57, and 61.58, as appropriate;
- Is current and qualified to act as pilot-in-command (PIC) of each aircraft for which they are authorized;
- Maintains at least a third-class medical certificate, if required; and
- Maintains a current flight instructor certificate, if required.

Designated as a representative of the FAA Administrator to perform specific pilot certification tasks on behalf of the FAA, a DPE may charge a reasonable fee. Generally, a DPE's authority is limited to accepting applications and conducting practical tests leading to the issuance of specific pilot certificates and/or ratings. The majority of FAA practical tests at the private and commercial pilot level are administered by FAA DPEs, following FAA-provided practical test standards (PTSs).

Only highly qualified individuals are accepted as DPEs. DPE candidates must have good industry reputations for professionalism, integrity, a demonstrated willingness to serve the public, and adhere to FAA policies and procedures in certification matters. The FAA expects the DPE to administer practical tests with the same degree of professionalism, using the same methods, procedures, and standards as an FAA ASI.

Since there are few DPEs for balloon pilot certification, it is important to determine early in flight training the availability of a DPE in a particular area. It may be necessary to make arrangements through the local FSDO for an appropriately rated FAA ASI to administer the test for a pilot certificate.

Role of the Flight Instructor

Unlike the rest of the aviation community, ballooning has no certificated flight instructor. This role is filled by commercially rated balloon pilots who choose to instruct and meet the provisions of 14 CFR part 61, Commercial Pilot Privileges and Limitations for a Balloon. In this discussion, the term "flight instructor" is understood to mean a commercial balloon pilot who provides instruction.

The flight instructor is the cornerstone of aviation safety and the FAA places full responsibility for student training on the authorized flight instructor. It is the job of the instructor to train the student pilot in all the knowledge areas and teach the skills necessary for the student pilot to operate safely and competently as a certificated pilot in the National Airspace System (NAS). The training includes airmanship skills, pilot judgment and decision-making, and good operating practices.

A pilot training program depends on the quality of the ground and flight instruction the student pilot receives. The flight instructor must possess a thorough understanding of the learning process, knowledge of the fundamentals of teaching, and the ability to communicate effectively with the student pilot. He or she uses a syllabus and teaching style that embodies the "building block" method of instruction. In this method, the student progresses from the known to the unknown via a course of instruction laid out in such a way that each new maneuver embodies the principles involved in the performance of maneuvers previously learned. Thus, with the introduction of each new subject, the student not only