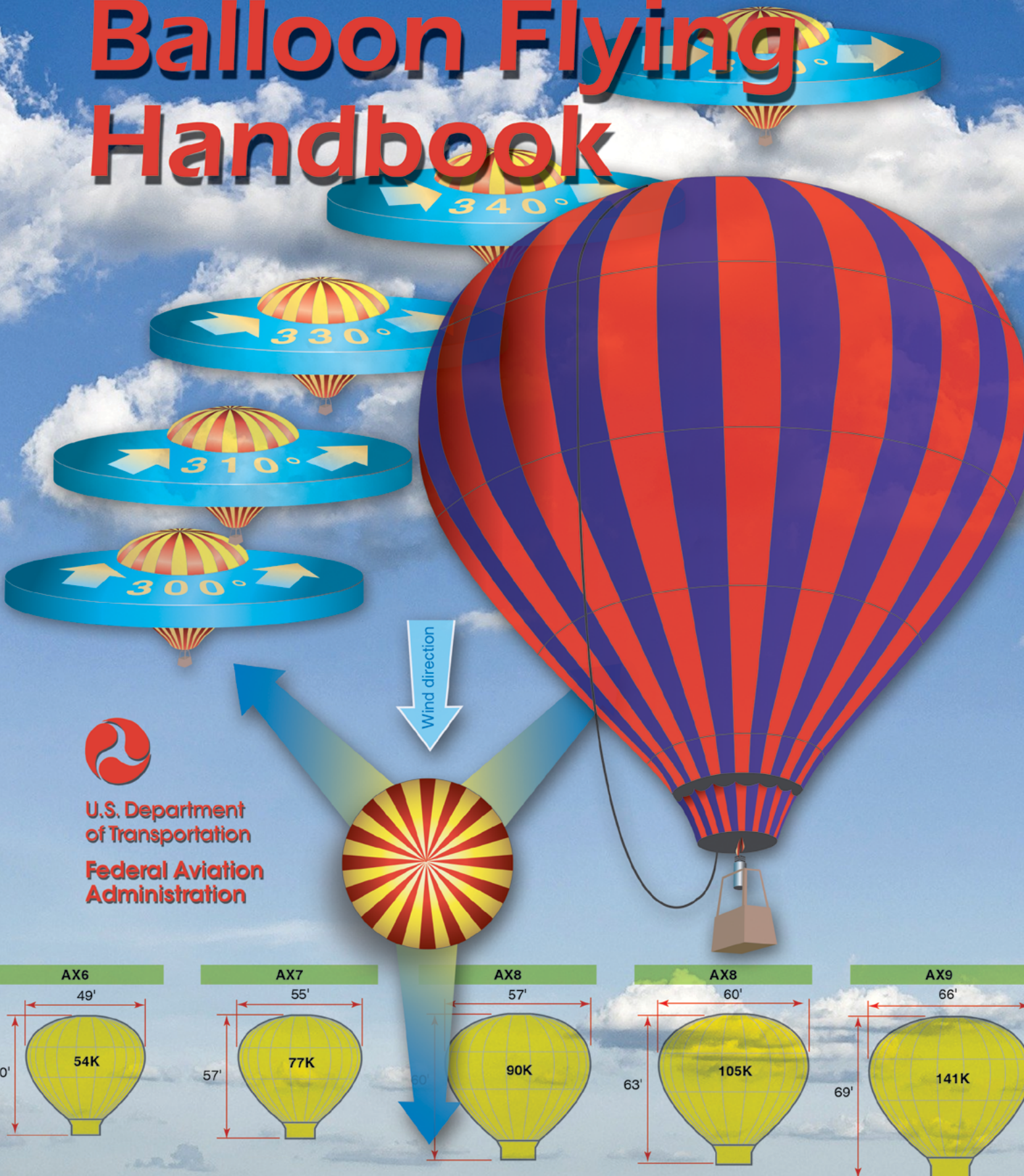


Balloon Flying Handbook



U.S. Department
of Transportation
**Federal Aviation
Administration**

Balloon Flying Handbook

2024

**U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
Flight Standards Service**

Preface

This Balloon Flying Handbook introduces the basic pilot knowledge and skills that are essential for piloting balloons. It introduces pilots to the broad spectrum of knowledge that will be needed as they progress in their pilot training. This handbook is for student pilots, as well as those pursuing more advanced pilot certificates.

Student pilots learning to fly balloons, certificated pilots preparing for additional balloon ratings or who desire to improve their flying proficiency and aeronautical knowledge, and commercial balloon pilots teaching balloon students how to fly should find this handbook helpful. This book introduces the prospective pilot to the realm of balloon flight and provides information and guidance to all balloon pilots in the performance of various balloon maneuvers and procedures.

This handbook conforms to pilot training and certification concepts established by the Federal Aviation Administration (FAA). There are different ways of teaching, as well as performing flight procedures and maneuvers, and many variations in the explanations of aerodynamic theories and principles. This handbook adopts a selective method and concept to flying balloons. The discussions and explanations reflect the most commonly used practices and principles. Occasionally, the word “must” or similar language is used where the desired action is deemed critical. The use of such language is not intended to add to, interpret, or relieve a duty imposed by Title 14 of the Code of Federal Regulations (14 CFR).

It is essential for persons using this handbook also to become familiar with and apply the pertinent parts of 14 CFR and the Aeronautical Information Manual (AIM). Performance standards for demonstrating competence required for pilot certification are prescribed in the appropriate balloon practical test standard.

This handbook supersedes FAA-H-8083-11A, Balloon Flying Handbook, dated 2008.

This handbook is available for download, in PDF format, from the [FAA website](#).

This handbook is published by the United States Department of Transportation, Federal Aviation Administration, General Aviation & Commercial Division, Training & Certification Group (AFS-810), Testing Standards Section, P.O. Box 25082, Oklahoma City, OK 73125.

Comments regarding this publication should be emailed to AFS630comments@faa.gov.

Acknowledgments

The *Balloon Flying Handbook* was produced by the Federal Aviation Administration (FAA), with the assistance of Safety Research Corporation of America (SRCA), industry, and individual contributor effort. The FAA wishes to acknowledge the following individual and corporate contributors:

Aerostar International, Inc. for the performance planning chart in Chapter 3 and the burner ratings sidebar on page 7-2

FireFly Balloons for imagery provided in Chapter 2

Lindstrand Balloons Ltd for the imagery in Chapter 2

J. Neils Enterprises, Inc. for imagery provided in Chapter 2

Lindan Hot Air Service Center for imagery provided in Chapter 2

Department of Atmospheric Sciences, University of Illinois Urbana-Champaign, for many images used in Chapter 4

Art Rangno, Sky Guide, for many of the cloud illustrations used in Chapter 4

Gordon Schwontkowski, author of *Hot Air Balloon Crewing Essentials*, for editorial content and contribution of material relating to the role of the ground crew in ballooning

Mike Bauwens, of Balloon the Rockies, for many of the maneuver descriptions and original graphics used in Chapters 6 and 7

Chapter 11, The Gas Balloon, was a collaborative effort of Peter Cuneo and Barbara Fricke, Andy Cayton, and Kevin Knapp.

Individual content and editorial contributions by: Raymond Bair, Philip Bryant, Stephen Turner, Jim Barnett, Kay West, Marian Deeney, Laura Hoeve, Tom Hamilton (for the False Lift discussion, originally printed in *Balloon Life Magazine*, and reprinted here in Chapter 6), Pat Cannon (for the pibal plotting procedure originally printed in *Ballooning Magazine*, and reprinted here in Chapter 3), Andrew and Barbara Ziolo, Chris Krowchuck, and Stuart Enloe

Individual photographic contributions have been made by Jane English (multiple lenticular cloud in Figure 4-23), Candy Ecker (Figure 3-15), and C. Tina Orvin (Figure 8-7).

The FAA acknowledges with appreciation the contributions of the Balloon Federation of America for technical support and input.