

Instrument Flying Handbook

2008

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

Preface

This Instrument Flying Handbook is designed for use by instrument flight instructors and pilots preparing for instrument rating tests. Instructors may find this handbook a valuable training aid as it includes basic reference material for knowledge testing and instrument flight training. Other Federal Aviation Administration (FAA) publications should be consulted for more detailed information on related topics.

This handbook conforms to pilot training and certification concepts established by the 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 selected methods and concepts for instrument flying. The discussion 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).

All of the aeronautical knowledge and skills required to operate in instrument meteorological conditions (IMC) are detailed. Chapters are dedicated to human and aerodynamic factors affecting instrument flight, the flight instruments, attitude instrument flying for airplanes, basic flight maneuvers used in IMC, attitude instrument flying for helicopters, navigation systems, the National Airspace System (NAS), the air traffic control (ATC) system, instrument flight rules (IFR) flight procedures, and IFR emergencies. Clearance shorthand and an integrated instrument lesson guide are also included.

This handbook supersedes FAA-H-8081-15A, Instrument Flying Handbook, dated 2007.

This handbook may be purchased from the Superintendent of Documents, United States Government Printing Office (GPO), Washington, DC 20402-9325, or from GPO's web site.

<http://bookstore.gpo.gov>

This handbook is also available for download, in PDF format, from the Regulatory Support Division's (AFS-600) web site.

http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs600

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Record of Changes

The following editorial changes were made in 2008 that supersede the 2007 publication of FAA-H-8081-15A, Instrument Flying Handbook:

Page 2-2, corrections made to Figure 2-1. The Airfoil.

Page 2-3, correction to paragraph concerning induced drag.

Page 2-7, corrections made to Figure 2-8. Thrust and Power Required Curves.

Page 2-11, correction to paragraph concerning the coordination of rudder and aileron controls.

Page 2-12, correction to Figure 2-15. Adverse Yaw.

Page 3-4, correction to Figure 3-3. Sensitive Altimeter Components.

Page 3-5, correction to Figure 3-6. The loss of altitude experienced when flying into an area where the air is colder (more dense) than standard.

Page 4-2, correction to Figure 4-1. Control Instruments.

Page 4-3, correction to Figure 4-2. Performance Instruments.

Page 4-18, correction to Figure 4-25. Control Instruments.

Page 6-11, correction to Figure 6-12. Flight instrument indications in a stabilized constant-airspeed climb.

Page 6-12, correction to Figure 6-13. Flight Instrument Indications in a Stabilized Constant-Rate Climb.

Page 7-7, correction to Figure 7-7. ADF Tracking Inbound.

Page 7-9, corrections made to Figure 7-8. ADF Interception and Tracking Outbound.

Page 7-13, correction made to Figure 7-15. CDI Interpretation.

Page 7-15, correction made to Figure 7-16. Course Interception (VOR).

Page 7-18, correction made to Figure 7-18. Using DME and RMI to Maintain an Arc.

Page 7-27, correction made to paragraph concerning GPS Components.

Page 7-41, corrections made to Figure 7-37. Precision and Nonprecision ALS Configuration.

Page 10-12, correction made to paragraph concerning a parallel procedure.

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