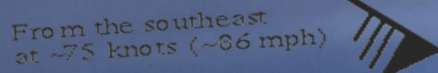
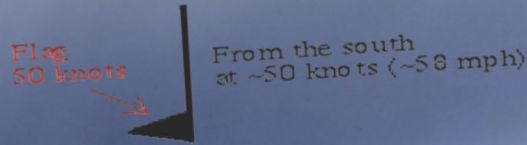
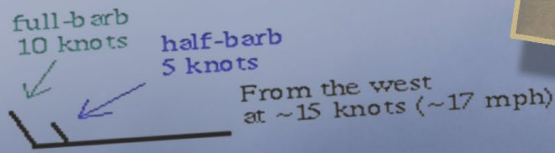


Aviation Weather Handbook



U. S. Department of Transportation
Federal Aviation Administration

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Aviation Weather Handbook

2022

United States Department of Transportation
FEDERAL AVIATION ADMINISTRATION
Flight Standards Service

Preface

This handbook consolidates the weather information from the following advisory circulars (AC) into one source document. By doing this, the Federal Aviation Administration (FAA) intends to streamline access to the FAA's weather documentation for users of the National Airspace System (NAS). The following ACs will remain in effect, but they will eventually be cancelled at a later date following the publication of this handbook:

- AC 00-6, Aviation Weather.
- AC 00-24, Thunderstorms.
- AC 00-30, Clear Air Turbulence Avoidance.
- AC 00-45, Aviation Weather Services.
- AC 00-54, Pilot Windshear Guide.
- AC 00-57, Hazardous Mountain Winds.

This handbook is designed as a technical reference for all who operate in the NAS. Pilots, dispatchers, and operators will find this handbook a valuable resource for flight planning and decision making.

This handbook conforms to pilot weather training and certification concepts established by the FAA. The discussion and explanations reflect the most commonly used weather products and information.

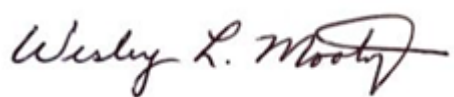
It is essential for persons using this handbook to also become familiar with and apply the pertinent parts of Title 14 of the Code of Federal Regulations (14 CFR) and the Aeronautical Information Manual (AIM). Title 14 CFR, the AIM, this handbook, current ACs, and other FAA technical references are available via the internet at the FAA home page <https://www.faa.gov>.

This handbook is available for download in Portable Document Format (PDF) from the FAA's Regulations and Policies web page at https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/.

This handbook is published by the U.S. Department of Transportation (DOT), FAA Flight Technologies and Procedures Division.

The guidance and recommendations in this handbook are not legally binding in their own right and will not be relied upon by the FAA as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance and recommendations is voluntary only and nonconformity will not affect rights and obligations under existing statutes and regulations.

Comments regarding this publication should be sent, in email form, to the following address: 9-AWA-AFS400-Coord@faa.gov.



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11/25/2022

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1 Introduction

This handbook describes the United States (U.S.) aviation weather program, products, and services. It also documents weather theory and its application to aviation. The objective of this handbook is to help the pilot and operator understand the basics of weather, aviation weather hazards, and aviation weather products. The information included is not prescriptive. Furthermore, the guidance and recommendations in this handbook are not legally binding in their own right and will not be relied upon by the FAA as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance and recommendations is voluntary only and nonconformity will not affect rights and obligations under existing statutes and regulations.

The handbook is a consolidated source of weather information and, in some cases, best practices to assist with providing safety for flight.

The visualization of the products discussed in this handbook has evolved over the past decade with the use of internet websites. The use of static black and white depictions of aviation forecasts is quickly becoming a thing of the past. Today's websites provide the products in color and offer options to select and overlay multiple pieces of weather information.

Today's aviation weather websites, including those of the National Weather Service (NWS), continue to improve the content and visualization of products. Unfortunately, it is not practical to update this handbook with every change to a weather product.

Examples of weather products in this handbook represent one way of how they can be visualized on a user's viewing device (e.g., computer, tablet, mobile phone, or cockpit display). The examples shown in this handbook are from NWS websites.

This handbook is broken into three parts:

- Part 1: Overview of the United States Aviation Weather Service Program and Information.
- Part 2: Weather Theory and Aviation Hazards.
- Part 3: Technical Details Relating to Weather Products and Aviation Weather Tools.