Meteorology for Pilots made Simple

(well, relatively simple!)

Geoff Day

Meteorology For Pilots Made Simple (well, relatively simple!)

Cover Photo: Geoff Day

Nothing in this manual supersedes any UK and EU legislation or European Aviation Safety Agency (EASA) Regulations or procedures, or any operational documents issued by any United Kingdom Government Department, the Civil Aviation Authority, National Aviation Authorities, the manufacturers of aircraft, engines and systems, or by the operators of aircraft throughout the world. As maps and charts are changed regularly, any extracts reproduced in this book ***must not*** be used for flight planning purposes.

ISBN: 978-1-84336-367-5

First Edition published August 2026

Published by Pooleys Flight Equipment Ltd
Elstree Aerodrome, Elstree,
Hertfordshire, WD6 3AW
England.

Tel: +44(0)20 8953 4870
Web: www.pooleys.com
Email: sales@pooleys.com

The Author: Geoff Day

Geoff retired from flying on the 56th anniversary of his first ever flight in an aircraft, a Victa Airtourer at Biggin Hill. His first flight in a helicopter was in a Bell 47 as, entirely appropriately, was his last flight.

In those 56 years Geoff flew mostly, although not exclusively, in the UK firstly in the civilian world, then in the RAF before returning to civilian flying. In both the RAF and commercially he flew both fixed wing and helicopters holding CPL(A) & (H) licences and instructor ratings in both.

With helicopters he did most things rotary (charter, instructing, load lifting, fire-fighting, aerial surveys and photography etc) before specialising in instructing and examining. He flew over 2 dozen fixed and rotary wing types, along the way collecting 2 Queen's Commendations For Valuable Service In The Air, 11 flying logbooks, some 25,000 flying hours (including 18,000 instructional hours),1 broken back and a wealth of experience.

Introduction

This book is not intended to be an authoritative book on meteorology or to be study material for the PPL ground examinations – although I will try to cover most of the PPL Met Exam syllabus items. Rather my intention is to concentrate on some of the aspects of meteorology which will be of practical use to PPL pilots, based on my own experiences, and thus help prepare the aspiring pilot for the real world of coping with weather when flying in the UK. There will be an obvious bias towards aspects of met which will affect helicopters.

It is based on my own experiences of flying throughout the UK in varying weather conditions, and along the way trying to make sense of the instruction that I had been given in meteorology – mainly by trainers who understood met, but many of whom did not themselves fly. That is not by way of offering criticism, but I just think that when you actually have to cope with the weather it encourages a more practical understanding of it.

As with my book on Helicopter Aerodynamics, I have tried to make things simple. If I have over–simplified I make no apology. If it helps to bring some understanding to those who, like me, find some of the more traditional text books over–complicated (although meticulously technically correct) then I am happy.

I have included some notes on Threat and Error Management in many of the chapters. For anyone not familiar with what this is, here is a brief explanation:

Threat and Error Management

Is the process of detecting and responding to threats and errors before they compromise safety. TEM aims to maintain safety margins by training pilots and flight crews to detect and respond to threats and errors that are part of everyday operations. Threats include things like adverse weather whilst errors include things like unclear communication between crew members.

If not properly managed, these threats and errors have the potential to generate undesired aircraft states (UAS). The management of undesired aircraft states represents the last opportunity to avoid an unsafe outcome and thus to maintain safety margins in fight operations.

The International Civil Aviation Organisation (ICAO) acknowledges TEM as a critical foundation of all pilot training.

From an AAIB accident report:

"While the pilot carried out a strategic pre–flight risk assessment, a more effective and targeted tactical Threat and Error Management (TEM) approach to each phase of the operation could have provided an additional safety barrier for the flights being undertaken."

Contents