



Short Course in Applied Meteorology for Regional Operators

Course Description and Objectives

Regional operations (i.e., MEDEVAC, air carrier, charter, freight and cargo services) frequently require flying into small, remote aerodromes and sites; often operating irregularly and on demand. These aerodromes and routes are often characterised by little support and limited available data (e.g., PIREPs/AIREPs, METARs, TAFs, TTFs). Compounding the problem, are the often vague forecast products; typically generalised over a large forecast area. Given the limited support and data, as well as other factors, it could be argued that flight planning and decision making in regional operations is, in some respects, more challenging than in other operations.

Weather (i.e., thunderstorms, freezing rain), low ceilings and reduced visibilities impact all phases of flight as well as pilot decision making, safety, fuel costs, and profits. Regardless if it is a “good weather day,” weather is a central consideration in flight planning and pilot decision making. Thus, a sound understanding of weather (particularly a practical and applied understanding) is essential.

This course is conducted in a workshop fashion and, unlike many others, is not strictly based around theory with the hope that pilots will be able to translate the disconnected theory into operational terms. The workshop is aimed at encouraging participants to develop a systematic method for assessing weather trends and forecasting; a method that has a scientific basis but one which can also be applied to real-time situations where there are heavy workloads and severe time constraints.

This workshop does not strictly look at meteorology. Given the workshop is aimed at enhancing and supporting decisions related to weather, it is also important to look at the decision and trouble shooting (error recovery) processes themselves. Unlike most decision making courses, which often only look at classical decision making theories (e.g., the DECIDE model), this workshop will look at how pilots **really** make decisions. In addition to analytical decision making, and from a weather perspective, the workshop will also examine decision making in stressful, high-risk situations, which are often characterised by time constraints, and limited and conflicting information.

Who should attend?

Pilots and dispatchers, supervisors, and training personnel of regional airlines, air charter, freight and cargo services, and corporate, government, MEDEVAC, SAR, and law enforcement flight operations.

Participant Prerequisites

It is assumed that all participants, at a minimum, have a satisfactory knowledge of material set out in their country’s CPL meteorology syllabus (i.e., FAA, Transport Canada, JAA, Australian CASA, South African CAA).





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Course Outline

This is an operational course and will embed interpretation of satellite, ground radar, analysis charts (i.e., surface, 500 hPa), METARs, TAFs, TTFs, Numerical Weather Prediction models, and Aerological diagrams (i.e., Skew-T) for greater understanding and application in flight operations.

Day 1:

- Weather Hazards
- Weather Risk Control Systems (Wx-RCS)
- “Code Grey” Proactive Forecasting Programme
- Operational Decision Making, and Error Recovery (Wx Focus)
- Weather Analysis and Self-briefing procedure and checklist
- Conducting Weather Briefings
- Introduction to Numerical Weather Prediction (NWP) models



Day 2:

- Non-convective winds
- Upper Level Winds and Temperatures
- Low-level Wind Shear
- Turbulence (i.e., Low-Level, In and Near Thunderstorms, Mountain Waves)

Day 3:

- Low Ceilings and Obstructions to Visibility
- Precipitation (including freezing precip. - depending on customer's operating environment)
- Icing

Day 4:

- Thunderstorm Refresher
 - Severe thunderstorms (including Case Study)
 - Air mass Thunderstorms
 - Multicell Thunderstorms
 - Supercell Thunderstorms
 - Gust Fronts, Microbursts and Marcobursts
 - Lightning and Hail
 - Convective winds



Day 5:

- Group Weather Flight Planning Exercise (including giving a weather briefing)
- Analysis of a significant weather event or accident

Take home

- Comprehensive course notebook
- Industry examples and solutions
- Certification of completion



Instructors

Martin Babakhan is a meteorologist based in New South Wales, Australia. He has a Graduate Diploma in Meteorology from the UN's World Meteorological Organization (WMO). He worked as a meteorologist for 17 years for the Royal Australian Air Force (RAAF). He retired at the weather office at RAAF Base Williamtown; just north of Newcastle, NSW, Australia.

After the RAAF, he joined the Department of Aviation (now the School of Psychology) at The University of Newcastle (Australia) teaching Air Transport Meteorology (incorporating the Australian ATPL) and Advanced International Aeronautical Meteorology. Following 12 years as an Aviation Lecturer, Martin (in late-2005) retired and is currently a Conjoint Lecturer in the School of Psychology at The University of Newcastle (Australia).

In addition to lecturing, Martin was the weather forecaster for the Australian Broadcasting Corporation (ABC) Radio in Newcastle for many years.

Martin currently works as a meteorologist for a large international airline based in the Australasian region.

Martin regularly works with Dutcher Safety & Meteorology Services developing and teaching Aviation Meteorology. John Dutcher also worked with Martin on number of operational meteorology research projects. With Martin, John also developed the Meteorology in Aircraft Accident Investigation (METI) course for the Southern California Safety Institute (SCSI).

John Dutcher has a Bachelor of Science (Aviation) from The University of Newcastle (Australia) where he specialised in Human Factors and Aviation Meteorology. Following his degree John mentored under meteorologist Martin Babakhan of The University of Newcastle (Australia) for three years. He completed training in weather forecasting (i.e., marine, aviation) in both hemispheres, aviation meteorology for long-haul international and regional flights, short-term mesoscale forecasting, applied satellite and radar meteorology, and the use of Numerical Weather Prediction (NWP) models. John has a Canadian Flight Dispatcher Licence, Glider and Private Pilot Licences. In Australia he has a Commercial Pilot Licence (frozen), and has completed Australian Air Transport Pilot Licence (ATPL) ground school, as well as flight planning for the B727-200, B1900D and SA227.

John has authored the Weather Investigation chapter in the upcoming ICAO Aircraft Accident Investigation Manual – Part III (in press). With Martin Babakhan, John developed the Meteorology in Aircraft Accident Investigation (METI) course for the Southern California Safety Institute (SCSI). He has taught meteorology for regional airline pilots for QBE Insurance Group (Aviation) in Australia. John has taught meteorology and Human Factors to pilots of the Canadian Owners and Pilots Association, the Civil Air Search and Rescue Association (CASARA) in Halifax, Canada, instructor pilots for Transport Canada, and Occurrence Investigators of the South African Civil Aviation Authority in Johannesburg. He has taught Human Factors in ramp and maintenance to personnel from Northern Air Cargo, Northern Air Aviation Services, the Medallion Foundation, and Conco-Phillips in Anchorage, Alaska for SCSI. He has also taught maintenance technicians from Honeywell Aerospace - Aftermarket Aviation Services. In addition, he has taught Human Factors to meteorologists of the South African Weather Service (SAWS) in Pretoria.

Besides consulting, John works as a Human Factors researcher in the Department of Psychology at Saint Mary's University in Halifax, Canada. Here, he has worked on projects in OH&S, safety culture, health care and for the Meteorological Service of Canada exploring decision making and forecasting processes of expert weather forecasters. He also has completed operational meteorology research with Martin Babakhan (including an analysis of high-altitude ice crystal icing events in the Australasian region for Boeing). He has published several academic and operational papers, reports, and articles and has presented his work in Australia, Canada, South Africa, and the USA.

Course Particulars

- **Course Duration:** 5 days.
- **Fee:** See website for details.
- **Location:** Various locations – In-house available.

Queries

For more information please contact:

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