

CAE offers a wide range of general operating subjects (GOS) to cover aeronautical knowledge that is not addressed in type-specific training. These courses aim at increasing flight safety by broadening and refreshing pilots' knowledge about their environment and by ensuring that throughout the course, the focus remains on the operational aspects of the subject. For an in-depth review of the eLearning modules offered by CAE, please visit our eLearning page at www.eLearningCAE.com

CAE E-LEARNING GENERAL OPERATING SUBJECTS

COURSE CATALOG:

ADS-B Countries around the world are implementing Automatic Dependent Surveillance – Broadcast (ADS-B) technology to enhance or extend the surveillance capability of their air traffic control (ATC) systems. The ADS-B module covers operating procedures, flight planning, MEL procedures, human factors considerations, ADS-B phraseology, normal and abnormal system operation, aircraft IDs, data source errors, and incident reporting.

AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS) Industry regulators strongly recommend pilot training on use of ACAS/TCAS for flight crews because of a high percentage of noncompliance with Resolution Advisory (RA) alerts. The ACAS module highlights the issues with noncompliance and reviews best operating practices for use of ACAS/TCAS.

CLEAR AIR TURBULENCE The Clear Air Turbulence module reviews the challenges presented by clear air turbulence and some techniques for predicting and managing flight in areas of clear air turbulence.

COLD WEATHER OPERATIONS The Cold Weather Operations module reviews operations in ground icing conditions including anti and de-ice fluids, de-ice procedures, holdover times, and pre takeoff contamination checks. These topics satisfy the IS-BAO training requirement for Surface Contamination. Braking action reports, cold temperature altitude corrections, and contaminated runways are also presented.

There are two versions of the Cold Weather Operations module. The U.S. version is based on the FAA Holdover Time Tables and the E.U. version is based on AEA Holdover Time Tables.

CONTROLLED FLIGHT INTO TERRAIN (CFIT) The CFIT module raises awareness of CFIT hazards and best practices to avoid a CFIT accident. The training module provides an overview of the International Civil Aviation Organization (ICAO), Flight Safety Foundation, and FAA CFIT Education and Training Aid as it applies to business aircraft operations. Case studies on CFIT accidents and some near misses are included.

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CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC) Controller Pilot Data Link Communications (CPDLC) is a generic term for data link communications between pilots and air traffic controllers. You may also hear data link referred to as Future Air Navigation System (FANS) 1/A which, in addition to CPDLC, includes Automatic Dependent Surveillance – Contract (ADS-C).

This CPDLC general familiarization module is designed for pilots flying in aircraft with FANS 1/A avionics capability. The training is not specific to any aircraft type or avionics package. The module is based on two source documents: Global Operational Data Link Document (GOLD) and FAA Advisory Circular 120-70B – Operational Authorization Process for Use of Data Link Communication System. The module includes the human factors associated with data link communications and reports by pilots with lessons learned on how to prevent errors.

CREW RESOURCE MANAGEMENT The Crew Resource Management module addresses human factor topics identified as the leading causal factors in aviation accidents. The module content is designed for pilots flying two pilot high performance turboprop, helicopter, or jet aircraft. Based on extensive research into human performance, we present specific examples of how to break down barriers and effectively use available resources. The module includes both examples of good use of Crew Resource Management and incidents where poor use of Crew Resource Management was a causal factor in an accident or incident.

DANGEROUS GOODS This module helps flight crews recognize dangerous goods and know what exceptions they are allowed to have onboard. It also includes common hazardous materials that passengers may bring on board, such as medical oxygen, powered wheelchairs, ammunition, alcohol, dry ice, and personal electronic device batteries, and provides information on risks associated with allowing these items onboard.

We have 4 different versions of the eLearning module:

- IATA Dangerous Goods Regulations – Will Carry Operator
- IATA Dangerous Goods Regulations – No Carry Operator
- U.S. DOT – Will Carry Operator
- U.S. DOT – Will Not Carry Operator

EGPWS/TAWS The Enhanced Ground Proximity Warning System (EGPWS) / Terrain Awareness Warning System (TAWS) module is designed for pilots flying turboprop and jet aircraft with TAWS system installed in the aircraft. The module raises awareness of CFIT hazards. The module provides an overview of the International Civil Aviation Organization (ICAO), Flight Safety Foundation, and Federal Aviation Administration (FAA) CFIT Education and Training Aid as it applies to TAWS operations in aircraft.

ELECTRONIC FLIGHT BAG The Electronic Flight Bag / iPad module complies with the flight crew training requirements outlined in Advisory Circular (AC) 120-76B and 91-78. It is designed for operators looking to implement the iPad to replace paper charts and documents in the cockpit.

EMERGENCY PROCEDURES The Emergency Procedures module prepares crewmembers for emergency and abnormal situations that may occur on an aircraft. The module reviews ditching, first aid, fire protection, hijacking, decompression, and other emergency situations. Hands on demonstration videos show use of fire extinguishers, life rafts, and flares.

ETOPS The Extended-Range Twin-Engine Operational Performance Standards (ETOPS) module intends to familiarize Pilots with the regulations, procedures and safety considerations that they should know before performing ETOPS. This module includes the purpose of ETOPS regulations, which enlarge the area of operation for twin-engine aircraft.

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FAR / AIM This module is an overview of FAR Parts 61, Certification: Pilots, Flight Instructors, and Ground Instructors; Part 91, General Operating and Flight Rules; NTSB 830; and portions of the Aeronautical Information Manual (AIM).

The applicable regulations in these Parts and the AIM are included in the subject matter of our other eLearning modules. Portions of the FARs and AIM that are not included in other modules are included in this FAR / AIM Review module

FATIGUE MANAGEMENT Fatigue has been cited as a causal factor in multiple aviation accidents. There are lessons that can be learned from these accidents as well as incidents and errors reported from the flight deck. Flight crew training is a critical piece of Fatigue Risk Management Programs. This module is designed to raise awareness on the causes of fatigue and countermeasures to reduce or mitigate the effects of fatigue in aviation.

FOOD SAFETY The Food Safety module reviews the best practices related to handling in flight catering. From the ordering of or shopping for food, to storage in the aircraft, and preparation in flight, there are some key guidelines for keeping catering safe for passengers and crew.

HIGH ALTITUDE/HIGH SPEED AERODYNAMICS The High Altitude / High Speed Aerodynamics module is designed for pilots who are flying higher performance aircraft that routinely operate above 25,000 feet and/or Mach Numbers (MMO) Greater than .75. After providing a description of the High Altitude Environment, we review High Altitude Aerodynamics, hazards associated with high-performance flight regimes, and Aircraft Design characteristics.

HIGH ALTITUDE PHYSIOLOGY The High Altitude Physiology module is designed for pilots who are flying higher performance aircraft that routinely operate above 18,000 feet and/or Mach Numbers (MMO) Greater than .75. After providing a description of the High Altitude Environment, we review the High Altitude aspects of Physiology, Aircraft Systems, and Regulations.

HIGH ALTITUDE WEATHER The High Altitude Weather module was designed for pilots operating higher performance aircraft that routinely operate above 25,000 feet. It will help you recognize and correctly react to weather hazards that you could encounter while flying at high-altitudes.

HUMAN FACTORS – AUTOMATION MANAGEMENT The Automation Management module includes 9 Principles of Automation Airmanship to apply to advanced aircraft operations. The goal is a more organized, disciplined and rewarding flight deck experience for flight crews. For operators, these principles support safety and operational efficiencies that help capture the promise of advanced technology.

HUMAN FACTORS – FLIGHT DISCIPLINE The Human Factors - Flight Discipline module deals with the individual motivations of a pilot. This module will bring each of us face to face with circumstances that often compromise thorough planning and preparation, degrade situational awareness, and negatively impact good judgment. We can, and must, prepare ourselves to deal with the temptation to violate principles of good flight discipline when and where they occur: both on the ground and in-flight. To effectively integrate the multiple talents required to become an expert aviator, we must first understand where discipline fits into the overall picture of expertise and airmanship.

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HUMAN FACTORS – HAZARDOUS ATTITUDES Here's the bottom line on hazardous attitudes: all of us have them. They are dangerous and potentially lethal if we allow them to affect our normally sound decision making ability. Hazardous attitudes in aviation have been studied, clearly identified, and follow a few basic forms. They can be easy to recognize with just a little training, and that is what this module covers. When someone intentionally deviates from a known policy or procedure, the question always seems to be "why?" First we'll introduce the Violation Producing Conditions, or VPC's, that affect us most often. After that, we will take a look at how we fall victim to VPC's and how to protect ourselves.

ICAO PROCEDURES The ICAO Procedures course intends to familiarize Pilots with instrument and navigation procedures of Procedures for Air Navigation Services Operations (PANS OPS) that differ from Terminal Instrument Procedures (TERPS). This module also covers QNH, QNE, and QFE altimetry

ILS/RNAV/GLS PRM APPROACHES How many times can you watch the same FAA video on Instrument Landing System (ILS) Precision Runway Monitor (PRM) approaches? If you are looking for a new way to review ILS PRM operations or procedures for flying a Localizer type Directional Aid (LDA) PRM or RNAV (GPS) PRM approach into San Francisco (SFO), this module is for you. The module includes the changes incorporated into the 2013 FAA videos.

Our approach to the training is to review required briefings and NASA ASRS reports of errors made by other business aircraft operators. Short video clips are included to emphasize the main objectives of the module.

INSTRUMENT PROCEDURES AND PERFORMANCE Using the Aeronautical Information Manual (AIM) and Instrument Procedures Handbook materials, this module supports pilot knowledge and proficiency requirements for aircraft performance, navigation, and instrument procedure flight operations in the U.S. National Airspace System. The module provides you with a review of both instrument procedures and aircraft performance for operations in accordance with the U.S. Federal Aviation Regulations (FARs).

These subjects are related but different. For example, aircraft certification requirements establish minimum performance levels, such as climb performance after the loss of an engine during takeoff. Pilots must ensure that their aircraft will meet at least these performance standards in order to be legal.

These certification requirements, however, are unrelated to factors such as weather, terrain, obstacles, or traffic management. To deal with these conditions, instrument procedures have been established by the FAA or other national authorities outside the U.S.

JET UPSET RECOVERY Loss of Control – Inflight (LOC-I) has overtaken CFIT as the leading cause of aircraft accidents worldwide. The FAA, EASA, and ICAO have made LOC-I / Jet Upset Recovery training one of their "hot button" issues in an effort to reduce the number of fatalities. This module covers the academic principles published in the Airplane Upset Recovery Training Aid developed by the Upset Prevention and Recovery Training Association.

LAND AND HOLD SHORT OPERATIONS (LAHSO) The Land and Hold Short Operations (LAHSO) module reviews pilot responsibilities, best operating practices, and planning tools for pilots who are going to accept a land and hold short clearance. Runway signs and markings, landing distance information, Minimum Equipment List (MEL) considerations, weather, and required landing distance (RLD) for LAHSO are reviewed in the course. This module describes the three runway configurations on which LAHSO can be performed. It also describes the main criteria for accepting and performing a safe LAHSO and the main criteria for declining a LAHSO.

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LOW VISIBILITY OPERATIONS This module is an introduction to low visibility takeoff requirements, fog classification, reduced visibility due to fog, surface movement factors, and RVR equipment.

MEL / CDL The Minimum Equipment List (MEL) / Configuration Deviation List (CDL) module is an overview of inoperative instruments and equipment, FAA Advisory Circular (AC) 91 67 Minimum Equipment Requirements For General Aviation Operating Under FAR Part 91, EU Ops 1.030, ICAO Annex 6, and the different sections of a typical MEL. In this module, and Non Essential Equipment and Furnishings (NEF) and review safety reports from fellow business aircraft pilots related to MELs.

MNPS, OCEANIC, AND CONTINGENCY PROCEDURES The MNPS, Oceanic, and Contingency Procedures module covers Minimum Navigation Performance Specification (MNPS) airspace and general oceanic navigation and communication procedures. Oceanic contingency procedures are also included. This module is part of the International Procedures bundle.

MOUNTAIN FLYING The Mountain Flying module is designed to support the safe operations of pilots flying high performance jet and turboprop aircraft into and out of high altitude airports located in the mountains. This module is especially recommended for pilots who have limited experience in mountain airport flying.

Using airports such as Aspen, Eagle, and Telluride as examples, the module includes a review of best practices and considerations for flight planning, mountain weather, the terrain and its consequences for flight operations, density altitude and aircraft performance, approaches and departures, and emergencies during mountainous airport operations.

OCCUPATIONAL SAFETY AND HEALTH (OSH) The OSHA module is designed as an introduction to and overview of the Occupational Safety and Health (OSH) Act and the guidelines that are used to enhance safety in a flight operation. OSHA background, references, web links, and examples are provided.

POLAR ROUTES The Polar Routes module provides a general introduction to the Polar Routes, followed by the operational features, regulations, considerations, and issues associated with flying the polar routes. The track structure is explained along with communication procedures. Other important aspects such as cold fuel management, refueling under extreme conditions, alternate airports while flying polar routes, and weather conditions is are also included.

RNP P-RNAV The Required Navigation Performance (RNP) Precision Area Navigation (P-RNAV) module is designed for pilots flying turboprop and jet aircraft with advanced avionics capable of navigating using Global Positioning System (GPS) and multiple sensor, Flight Management System (FMS) based Area Navigation procedures. The module focuses on Basic Area Navigation (B-RNAV) and Precision Area Navigation (P-RNAV) in European Civil Aviation Conference (ECAC) airspace.

RNP RNAV The Required Navigation Performance (RNP) Area Navigation (RNAV) module is designed for pilots flying turboprop and jet aircraft with advanced avionics capable of navigating using Global Positioning System (GPS) and multiple sensor, Flight Management System (FMS) based Area Navigation procedures. The module provides background information and references along with a review of RNAV instrument flight procedures including departure, enroute, arrival, and approaches.

RUNWAY EXCURSION Based on accident statistics, you are 50 times more likely to have a runway excursion than you are a runway incursion accident. The Runway Excursion module reviews risk factors associated with runway excursions, such as rejected takeoffs, non compliance with SOPs, long touchdowns, and contaminated runways. Risk mitigation techniques such as stabilized approaches, proper performance planning, and constant angle descents are presented.

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RUNWAY INCURSION The Runway Incursions module focuses on preventive measures. The latest information from the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) Runway Safety teams are included in the module. In addition, over 500 aviation safety reports related to runway incursions by business jet crews were reviewed to assemble a practical list of prevention techniques.

RVSM Operations in Reduced Vertical Separation Minimums (RVSM) airspace have become a non-event. We regularly climb through FL290 without a thought that we are entering RVSM airspace. Although it has become commonplace training is still mandated. The RVSM module is designed for pilots flying aircraft that have a national aviation authority approval to operate in RVSM airspace.

SAFETY MANAGEMENT SYSTEMS The Safety Management Systems (SMS) module is designed as an introduction to and overview of the SMS concept and how an SMS can enhance safety in a flight operation. The module is organized around the four core elements of the SMS: Policy, Risk Management, Assurance, and Promotion. The SMS module provides web links, background, references, and examples.

SECURITY The Security module is designed for all employees of flight departments flying high performance aircraft. The module is based on the best security practices developed by the general aviation industry and the National Business Aviation Association (NBAA) in the wake of the events of September 11, 2001. The module provides a review of the events leading to the current state of the business aviation security threat, and then covers the best practices that have been developed to address business aviation's security vulnerabilities, including threat assessment and procedures to secure people, facilities, and aircraft. Recommended actions in the event of a security breach are included.

VOLCANIC ASH The Volcanic Ash module covers information about the hazards of volcanic ash phenomenon and its negative effects on aviation. This module also presents the preventive measures for avoiding a cloud of volcanic ash, and the procedures used to deal with an encounter.

WAKE TURBULENCE The Wake Turbulence module addresses the hazard of flying into another aircraft's vortices.

We present specific wake turbulence-related incidents in business aircraft flown by professional flight crews. The module also highlights the new FAA and Eurocontrol Wake Turbulence Aircraft Categories and Separation Standards.

WEATHER RADAR The Weather Radar module is designed to provide the required understanding and knowledge for flight crews to assess summer time weather conditions that may be potentially hazardous to flight. The module includes a detailed operational perspective on using onboard airborne and data uplinked NEXRAD weather radar. We also present specific incidents about weather-related accidents and incidents in turbine business aircraft flown by professional flight crews.

WORLDWIDE INTERNATIONAL PROCEDURES RECURRENT The Worldwide International Procedures recurrent curriculum includes 5 eLearning modules bundled together: ADS –B, ICAO Procedures, MNPS, RNP P-RNAV and RVSM.

For an in-depth review of the eLearning modules offered by CAE, please visit our eLearning page at www.eLearningCAE.com

Please contact your Regional Sales Manager or Account Executive for pricing and enrollment information.

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E-LEARNING DETAILS

COURSE	LENGTH	US	EUR	ISBAO
ADS-B	45 min		X	
Airborne Collision Avoidance System & Traffic Alert and Collision Avoidance System (TCAS II)	1 hr	X	X	X
Clear Air Turbulence	1 hr	X	X	
Cold Weather Operations (US & EU)	1.5 hr	X	X	X
Controlled Flight into Terrain	1 hr	X	X	X
CPDLC (General Familiarization)	1.5 hr	X	X	
CRM-TEM - Initial	3 hr	X	X	X
CRM-TEM - Recurrent	1.5 hr	X	X	X
Dangerous Goods - No Carry (US & EU)	2 hr	X	X	X
Dangerous Goods - Will Carry (US & EU)	2.5 hr	X	X	X
EGPWS	1 hr	X	X	X
Electronic Flight Bag	1.5 hr	X	X	
Emergency Procedures	2 hrs	X	X	X
ETOPS	1 hr	X	X	
Fatigue Management	1 hr	X	X	X
Federal Aviation Regulations (US)	45 mins	X		X
Food Safety	1 hr	X	X	
High Altitude High Speed Aerodynamics	1 hr	X	X	
High Altitude Physiology	1 hr	X	X	X
High Altitude Weather	1 hr	X	X	
Human Factors - Automation Management	1 hr	X	X	X
Human Factors - Flight Disciplines	1 hr	X	X	X
Human Factors - Hazardous Attitudes	1 hr	X	X	X
ICAO Procedures	1 hr	X	X	X
ILS LDA PRM Approaches	45 mins	X		
Instrument Procedures	2 hr	X		X
Jet Upset Recovery	1 hr	X	X	X
LAHSO	30 mins	X	X	
Low Visibility Operations	1 hr	X	X	
MEL-CDL	30 mins	X	X	X
MNPS, Oceanic, and Contingency Procedures	2 hr	X	X	X
Mountain Flying	1 hr	X		X
Occupational Health and Safety (US)	1 hr	X		X
Polar Routes	1 hr	X	X	
Required Navigation Performance - Precision Area Navigation (RNP/PRNAV)	1 hr	X	X	
Required Navigation Performance, Area Navigation (RNP-RNAV)	1.5 hr	X	X	
Runway Excursion	45 mins	X	X	X
Runway Incursion	1.5 hr			X
RVSM Pilot	45 mins	X	X	X
Safety Management Systems	1 hr	X	X	X
Security	1 hr	X		X
Volcanic Ash	30 mins	X	X	
Wake Turbulance	1 hr	X	X	
Weather Radar	1 hr	X	X	X
Worldwide International Procedures Recurrent	6 hr	X		X