School of Aviation Safety and Security

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Singapore Aviation Academy

The Singapore Aviation Academy (SAA) is the training arm of the Civil Aviation Authority of Singapore (CAAS). An internationally-recognised aviation training institute, SAA offers a wide range of operational and management programmes that benchmark international standards and best practices to meet the training needs of the global aviation community. Besides building resources and competencies for the aviation industry, it also serves as an international platform for the sharing of knowledge and experiences through its conferences and forums. Since its establishment in 1958, SAA has trained over 52,000 participants from 190 countries.

As a centre of excellence for aviation learning and thought leadership, the Academy constantly keeps pace with developments in international civil aviation and offers new programmes on current topical issues.

School of Aviation Safety and Security

The School of Aviation Safety and Security conducts a wide spectrum of specialised programmes in safety management, safety oversight and aviation security. They are designed to share international best practices to equip airport regulators, operators and aviation practitioners with expert knowledge to enhance the safety and security of their operations and meet increasing industry mandates.

Specialised Safety and Security Programmes

The School addresses a broad spectrum of competencies and issues in international aviation safety and security. Programmes in safety management systems, safety oversight management and inspection, accident investigation, human factors and aviation medicine address the critical safety and health issues impacting aviation. Aviation security programmes in the areas of risk assessment, airline and airport security impart crucial skills and insights, and are in tandem with international best practices and regulatory mandates. Lectures are complemented with practical syndicate group exercises and site visits to enrich the curriculum.

Renowned Experts, Instructors and Collaboration Partners

The School has an international panel of renowned experts, including aviation safety and security experts, aeromedical professionals and aviation psychologists with extensive domain knowledge and experience. Instructors from CAAS and local experts with many years of practical, operational and regulatory experience complement the international pool, sharing the Singapore experience.

Application and Registration

Participants are required to complete application forms for courses and workshops and registration forms for conferences and seminars. Online application and registration are also available through the Academy’s website. Application/registration forms and fees should be submitted at least four weeks before the programme commences or by the stipulated closing date for special programmes. Remittance of fees can be made by telegraphic transfer, credit card or bank draft together with the submission of the application/registration form.

Organisations who submit three or more registrations at the same time from the same billing source are entitled to the following group discounts:

- Three to six: 10%
- Seven to nine: 15%
- Ten or more: 20%

Customised Training

In addition to regular courses, customised training programmes are also developed to meet specific user requirements for training in various aspects of planning, operations and management.

Cancellation Policy

Cancellation notice must be given at least two weeks before the training commences, otherwise only 25 percent of the fees will be refunded. No refund will be granted in the event that the Academy is not notified or the cancellation is made on or after programme commencement. Substitution of participants may be granted with the Academy’s approval.

Accommodation and Transportation

Participants are usually accommodated at nearby hotels or other hotels which provide transport to and from the Academy. The Academy is also easily accessible by public transport. Participant’s requests for assistance in hotel reservations are welcome.
Investigation Techniques

Module I: Aircraft Accident

From the understanding of a State’s responsibilities as required in ICAO Annex 13 (Aircraft Accident and Incident Investigation) to comprehending the organisational factors from the airports’ and airlines’ perspective, this course provides in-depth training in aircraft accident investigation techniques and an overview of the management issues involved in an accident investigation. It also covers key aspects of the investigation process from preparation to report writing, and discusses case studies on accident investigation focusing on management challenges faced by accident investigators.

This is an International Federation of Air Line Pilots’ Associations (IFALPA) approved course for accreditation of IFALPA accident investigators. SAA is the only approved centre for aircraft accident investigation training outside the US and Europe.

Objectives:

- Aircraft Accident Investigation Techniques and Management
- Use of Critical Data in Investigation
  - Flight data recorder
  - Cockpit voice recorder
  - Radar data
- Technical Investigation
  - Structures, power plants and systems
  - Maintenance records
  - Aerodynamics
  - Mid-air collisions
  - In-flight break-ups
- Human Factors
  - SHEL model
  - Reason model
  - Types of errors and examples
  - Techniques for investigating human factors
- Operations Investigation
  - Flight path
  - Crew history, duty times and competency
- Survival Factors
  - Crashworthiness
  - Pathology
- Interviewing Techniques
- Sharing of Safety Information
  - European Coordination Centre for Aviation Incident Reporting Systems (ECCAIRS) database system
- Writing the Final Report
  - Drafting
  - Factual information
  - Analysis and conclusions
- Case Studies
  - Major aircraft accidents
  - Light aircraft accidents
  - Incident investigation

Outline (Continued):

Module II: Aircraft Accident Investigation Management

- International Requirements
  - ICAO Annex audits
  - States’ responsibilities
  - Role of the accident investigation authority
  - New challenges
- Management of Accident Investigations
  - Overview
  - Dealing with media
  - Family assistance programmes
  - Case study: Maintenance issues
  - Case study: Accidents in mountainous terrain
  - Case study: Swissair SR111 MD-11
  - Developing safety recommendations
- Organisational Factors in Safety from Airlines’ Perspective
  - Investigation of anomalies in aircraft accidents
  - Crew resource management
  - Economic pressure and its effect on airline safety
  - Case study: Communist aircraft accidents
  - Case study: Major airline accidents

WHO SHOULD ATTEND

Accident investigators, chief investigators or management personnel involved in aircraft accident investigation from civil aviation authorities, airport authorities/operators, safety and regulatory bodies, airlines and aircraft manufacturers, law enforcement, military and government agencies as well as airport emergency services.

Duration:

Module I: 5 days
Module II: 5 days
Full course: 2 weeks
ICAO Safety Management Systems

OBJECTIVES
This course enhances the knowledge of safety management concepts and ICAO Standards and Recommended Practices (SARPs) on safety management in Annexes 6 (Operation of Aircraft), 11 (Air Traffic Services), 14 (Aerodromes) and related guidance material. It also develops participants’ knowledge and skills to certify and oversee key components of a basic safety management system (SMS) in compliance with ICAO SARPs and national regulations.

OUTLINE
- Basic Safety Concepts
  - Evolution of safety thinking
  - Concept of accident causation: Reason model
  - Organisational accident
  - People and safety: SHELC model
  - Errors and violation
  - Organisational culture
  - Safety investigation
- Introduction to Safety Management
  - Safety stereotype
  - Need for safety management
  - Imperative of change
  - Safety management: Eight building blocks
- Hazard Identification and Management
  - Fundamental concepts
  - Understanding hazards
  - Hazard identification and management
  - Documentation of hazards
- Fundamentals of Risk Management
  - Risk management and probability
  - Risk assessment matrix and criteria
  - Risk control and mitigation
  - Risk management warm-up exercises
- SMS Regulation
  - The big picture
  - Safety management of aircraft operations, air traffic services, maintenance of aircraft and aerodrome operations
  - What is a safety programme and SMS
  - Acceptable level of safety
  - Protection of sources of safety information
- Introduction to SMS
  - ICAO requirements
  - Introductory concepts
  - SMS relationships and interrelationships
  - The four components of SMS
  - System description
  - Gap analysis
  - SMS and quality management systems
- SMS Planning
  - Elements of SMS
  - Management commitment and responsibility
  - Safety accountabilities of managers
  - SMS implementation plan
  - Documentation of safety policies and objectives
- SMS Operation Requirement
  - Appointment of key safety personnel
  - Safety management manual and reporting
  - Internal safety investigations
  - Safety management of aircraft operations
  - The big picture
  - SMS implementation plan
- Phased Approach to SMS Implementation
  - Why a phased approach to SMS?
- SMS Operation Requirement
  - Why a phased approach to SMS?
  - The four phases
  - Communication
  - Training and education
  - Change management
  - Audits and surveys
  - Safety performance monitoring and measurement
- SMS Operation Requirement
  - Why a phased approach to SMS?
  - The four phases

WHO SHOULD ATTEND
Personnel from civil aviation authorities responsible for the implementation of safety programmes and oversight of SMS in the areas of aircraft operations, air traffic services, maintenance of aircraft and aerodrome operations.

PREREQUISITES
Participants must have basic technical aeronautical knowledge and a minimum of two years experience in flight, air traffic control or aerodrome operations in a civil aviation administration or the aviation industry.

DURATION
4 days

State Safety Programme

OBJECTIVES
This course develops participants’ knowledge on the ICAO Standards and Recommended Practices (SARPs) relating to the State Safety Programme (SSP), the ICAO-SSP framework and its components, elements and related guidance material. It also provides practical guidance on key elements of an SSP, including a State’s regulation for an SSP, its implementation plan and the establishment of a State’s acceptable level of safety.

OUTLINE
- ICAO SARPs Relating to SSP
  - ICAO requirements in SSP
  - SSP development
  - SSP components
  - The bridge
  - Safety Management Systems (SMS) requirements for service providers
  - Safety management principles
  - Development of guidance on a State’s acceptable level of safety
- Acceptable Level of Safety (ALoS) Performance
  - Performance-based regulatory environment
  - Safety performance measurement
  - State ALoS
  - Regulatory compliance
  - Legal considerations
- Performance-based Regulations
  - Prescriptive versus performance
  - ICAO SSP framework
  - SSP: State safety risk management
  - SSP: State safety assurance
  - Solving the puzzle
- SSP Implementation Plan
  - State safety policy and objectives
  - State safety promotion
  - SSP implementation
  - A vision of the future: Integration
  - Development of an SSP implementation plan
- Development of Guidance on ALoS and Performance-based Regulations
- SSP Safety Promotion
  - SSP training programme
  - Training documentation
  - Safety communication

WHO SHOULD ATTEND
Personnel from civil aviation authorities responsible for the implementation of safety programmes, and/or oversight of safety management systems, in the areas of aircraft operations, air traffic services and maintenance of aircraft and aerodrome operations.

DURATION
3 days
Integrated Safety Management Systems

OBJECTIVES

This course provides an understanding of the theory and practical aspects of Integrated Safety Management Systems (ISMS). Participants will acquire the knowledge and skills to facilitate the design, implementation and maintenance of an operationally effective ISMS to meet the standards prescribed in ICAO Annexes 6 (Operation of Aircraft), 11 (Air Traffic Services) and 14 (Aerodromes).

OUTLINE

- Implementation of an ISMS
  - Gaining senior management commitment
  - Setting policies and objectives
  - Appointing a safety manager
  - Establishing a safety action group
- Essentials of Risk Management
  - What is risk?
  - Risk assessment: The Bow Tie analysis method
  - Hazard identification
  - Establishing a process to manage risks
  - Managing safety in a changing environment: New hazards and risks
- Safety Information Systems
  - Basic principles of safety information systems
  - Collecting information through multiple channels
  - Interpretation and analysis of safety information

WHO SHOULD ATTEND

Senior executives and management from civil aviation authorities, airport authorities/operators or industry involved in safety management, risk management, quality assurance, financial management, safety investigation, safety analysis and reporting, airport management, airspace management, corporate governance, safety regulation, emergency management, airport design and planning, airline operations, military aviation operation, engineering and maintenance of airport systems, flight operations, cabin safety, occupational health, safety and environment.

DURATION

2 weeks
Safety Oversight Inspectors (Aerodromes)

OBJECTIVES
This course provides an understanding of the safety oversight of aerodromes required of a State’s aviation regulatory body and its importance. Participants will learn to conduct aerodrome inspections and set up an aerodrome inspection programme through classroom training and practical exercises. Besides the ICAO Standards and Recommended Practices (SARPs), references are also made to various national civil aviation regulations. It helps prepare States in meeting international requirements as well as update their organisation’s safety oversight mechanisms.

OUTLINE
- Overview of the State’s Safety Oversight Obligations
  - Critical elements of a safety oversight system
  - ICAO SARPs
  - State Safety Programme
  - Safety Management Systems (SMS)
- ICAO Annex 14 (Aerodromes), Vol II (Aerodrome Design and Operations)
  - Certification of aerodromes
  - Aerodrome data
  - Physical characteristics: Runways, taxiways, clearways, stopways, holding bays
  - Obstacle restriction and removal: Obstacle limitations surface and requirements
  - Visual aids for navigation: Indicators and signaling devices, markings, lights, signs and markers
  - Aerodrome operational services, equipment and installations
- ICAO Doc 9137 (Aeropitds Service Manual)
  - Rescue and fire-fighting
  - Pavement surface conditions
  - Bird control and reduction
  - Removal of disabled aircraft
  - Control of obstacles
  - Airport emergency planning
  - Airport operational services
  - Airport maintenance practices
- ICAO Doc 9157 (Aerodrome Design Manual)
  - Overview of runways, taxiways, aprons and holding bays, pavements, visual aids, electrical systems and frangibility
- Aerodrome Maintenance
  - Pavements
  - Runway pavements overlay
  - Visual aids
- Auditing of Aerodromes
  - Roles and responsibilities of an aerodrome inspector
  - Auditing principles, techniques and procedures
  - Auditing of rescue and fire-fighting
  - Auditing of an airport’s SMS
- Airport Certification
  - Issuance and renewal of airport operating certificate/licence
- Aerodrome Inspections
  - Airfield: Pavement, markings, lightings and obstructions
  - Rescue and fire-fighting
  - Training programme: Review, records and documentation
  - Apron driver training
  - Fuelling facilities
  - Runway incursion prevention
  - Wildlife and foreign object damage management

WHO SHOULD ATTEND
Personnel from civil aviation authorities and aerodrome operators who are involved in safety oversight management and inspection of aerodromes such as safety managers, inspectors and auditors.

DURATION
5 days

Safety Oversight Inspectors (Air Navigation Services)

OBJECTIVES
This course provides an understanding of air navigation services (ANS)-related ICAO Standards and Recommended Practices (SARPs) such as Annex 1 (Personnel Licensing), 3 (Meteorological Services), 11 (Air Traffic Services) and 15 (Aeronautical Information Services). The effective regulation and state safety oversight responsibilities of ANS is also covered. Besides the ICAO SARPs, references are also made to various national civil aviation regulations. It helps prepare States in meeting international requirements as well as update their organisation’s safety oversight mechanisms.

OUTLINE
- Overview of the Global Air Traffic Management (ATM) Operational Concept
  - Global ATM plan
  - ATM system requirements
  - Global performance of ANS
- Overview of the State’s Safety Oversight Obligations
  - Critical elements of a safety oversight system
  - ICAO SARPs
  - State Safety Programme
  - Safety Management Systems
  - Responsibilities of the ANS regulator
- ICAO Annex 11
  - Flight information services (FIS)
  - Alerting services
  - Air traffic services (ATS) requirements for communications and information
  - Principles governing ATS procedures
  - Contingency planning
- ICAO Doc 4444 (Air Traffic Management)
  - ATS safety management
  - ATS system capacity and air traffic flow management
  - General provisions for ATS
  - Separation methods and minima
  - Separation in the vicinity of aerodromes
  - Procedures for aerodrome control service
  - ATS surveillance services
  - FIS and alerting service
- ICAO Doc 7030 (Regional Supplementary Procedures)
  - Flight rules and flight plans
  - Communications, navigation and surveillance
  - Safety monitoring
  - Air traffic flow management
  - Special procedures and phraseology
  - Search and rescue
- ICAO Doc 9137 (Aerodrome Design Manual)
  - Aerodrome data
  - Physical characteristics: Runways, taxiways, clearways, stopways, holding bays
  - Obstacle restriction and removal: Obstacle limitations surface and requirements
- Human Factors in ANS
  - The human element
  - Human performance and limitations
  - Effective communication skills
  - Threat and error management
- ICAO Universal Safety Oversight Audit Programme Beyond 2010
  - Continuous monitoring approach
  - Audit of ANS

WHO SHOULD ATTEND
Personnel from civil aviation authorities and service providers who are involved in ANS oversight management and inspection such as safety oversight inspectors, safety managers, inspectors and auditors.

DURATION
5 days
Safety Oversight Airworthiness Inspectors (Maintenance)

OBJECTIVES
This course provides safety oversight inspectors (airworthiness maintenance) with an understanding of the fundamental principles underlying the safety oversight measures relating to airworthiness maintenance that is required of a State’s civil aviation regulatory body and their importance. Besides the ICAO Standards and Recommended Practices, references are also made to various national civil aviation regulations. It helps prepare States in meeting international requirements as well as update their organisation’s safety oversight mechanisms.

OUTLINE
- Duties and Responsibilities of the Maintenance Inspector
- Aircraft Certificate of Airworthiness Issuance and Renewal
- Aircraft Registration
- Approval and Monitoring of Maintenance/Design Organisations and/or Designees
- Approval of Operator Maintenance Systems: The Air Operator Certification Issue and Monitoring
- Licensing of Maintenance Personnel
- Training of Maintenance Personnel
- Regulations Training
- Case Study: Overview of Joint Aviation Requirements/European Aviation Safety Agency Part 145
- Mandatory Airworthiness Requirements: ICAO Annex 8 (Airworthiness of Aircraft) Standards for the Reporting Loops
- Variations to Mandatory Airworthiness Requirement
- Reliability-centred Maintenance
- Approval of Aircraft Maintenance Schedules, Programmes and Amendments
- Type Certificate, Supplemental Type Certificate, Repair and Modifications
- Simplifying Stressing
- Structures and Ageing Aircraft
- Human Factors in Maintenance
- Suspect Unapproved Parts

WHO SHOULD ATTEND
Experienced aviation professionals such as former licensed aircraft maintenance engineers or technicians who are now maintenance inspectors in civil aviation authorities, or those who are responsible for aircraft operations and/or maintenance.

PREREQUISITES
Participants must attend the compulsory Safety Oversight Inspectors (Basic) module before proceeding to this elective module.

DURATION
1 week 2 days

Safety Oversight Airworthiness Inspectors (Engineering)

OBJECTIVES
This course provides safety oversight inspectors (airworthiness engineering) with an understanding of the fundamental principles underlying the safety oversight measures relating to airworthiness engineering that is required of a State’s civil aviation regulatory body and their importance. Besides the ICAO Standards and Recommended Practices, references are also made to various national civil aviation regulations. It helps prepare States in meeting international requirements as well as update their organisation’s safety oversight mechanisms.

OUTLINE
- Duties and Responsibilities of the Airworthiness Inspector (Engineering)
- Overview of the Federal Aviation Regulations, Joint Aviation Requirements and European Commission System
- Rulemaking and Notice of Proposed Amendment/Notice of Proposed Rule Making Procedures
- Approval and Surveillance of Design Organisations, Production Organisations and Designees
- Procedures for Type Certificate, Supplemental Type Certificate, Repair and Modification or Change Approval
- Simplifying Stressing
- Mandatory Airworthiness Requirements
- Variations to Mandatory Airworthiness Requirements
- Technical Principles
- Structures and Ageing Aircraft
- Aging Aircraft Maintenance
- Widespread Fatigue Damage
- Suspected Unapproved Parts
- Damage Removal during Structural Repairs
- Systems and Equipment
- Aircraft Wiring
- Propulsion
- Cabin Safety
- Reliability-centred Maintenance
- Approval of Aircraft Maintenance Schedules, Programmes and Amendments
- Suspected Unapproved Parts

WHO SHOULD ATTEND
Experienced aviation professionals holding an aeronautical engineering degree or equivalent, engineering inspectors in civil aviation authorities or those who are responsible for engineering aspects in a maintenance, design or production organisation.

PREREQUISITES
Participants must attend the compulsory Safety Oversight Inspectors (Basic) module before proceeding to this elective module.

DURATION
1 week 2 days
Safety Oversight Inspectors (Flight Operations)

OBJECTIVES
This course provides safety oversight flight operations inspectors with an understanding of the fundamental principles underlying the safety oversight measures relating to flight operations that is required of a State’s civil aviation regulatory body and their importance. Besides the ICAO Standards and Recommended Practices (SARPs), references are also made to various national civil aviation regulations. It helps prepare States in meeting international requirements as well as update their organisation’s safety oversight mechanisms.

OUTLINE
- Introduction to Flight Operations
  - Flight operations safety oversight functions and activities
  - ICAO Doc 7300 (Convention on International Civil Aviation)
  - ICAO SARPs and guidance materials
- Duties and Responsibilities of the Flight Operations Inspector
  - Code of conduct and statutory powers
  - Qualification and training
  - Compliance and enforcement
  - Flight operation of an aircraft: Monitoring
  - Flight operations occurrence reports: Investigation
  - Flight crew licences: Assessment
- Air Operator Certificate
  - Application: Initial enquiry and pre-assessment by regulatory body
  - Certification procedures: Documentation evaluation, demonstration, inspection and certification phase
  - Ground and flight operations inspection
- Document Evaluation
  - Flight documents and manuals
  - Aircraft flight manuals
  - Operations manual
  - Security programme manual
  - Maintenance control manual
  - Minimum Equipment List, Configuration Deviation List and Dispatch Authorisation
- Special Operations
  - All-weather operations
  - Extended Range Twin Operations
  - Minimum Navigation Performance Specification
  - Reduced Vertical Separation Minima
  - Required Navigation Performance
  - Ultra-long range
  - Polar route
- State Responsibilities Regarding Commercial Air Transport Operations by Foreign Operators
  - The right of States to inspect aircraft from other States
  - State approval for a foreign operator to operate within its territory
  - Operator audits by established commercial audit organisations
  - Approval process and continued surveillance

WHO SHOULD ATTEND
Experienced holders of professional pilot licences aspiring to become flight operations inspectors in civil aviation authorities or those who have similar responsibilities with an air operator.

PREREQUISITEST
Participants must attend the compulsory Safety Oversight Inspectors (Basic) module before proceeding to this elective module.

DURATION
1 week 2 days

Safety Oversight Inspectors (Basic)

OBJECTIVES
This course provides safety oversight inspectors with an understanding of the fundamental principles underlying the safety oversight measures that are required of a State’s civil aviation regulatory body and their importance. Besides the ICAO Standards and Recommended Practices (SARPs), references are also made to various national civil aviation regulations. It also helps prepare States in meeting international requirements as well as update their organisation’s safety oversight mechanisms.

OUTLINE
- State’s Aviation Safety Oversight Obligations
- The Regulatory Framework
- Functions of a National Aviation Regulatory Authority
- ICAO SARPs
  - Content of Annexes 1, 6, 8 and 13
  - Associated ICAO guidance documents 8335, 9734, 9760, 9803 and 9806
- The Inspector’s Role: Power and Enforcement
  - Authority enforcement role, policy and procedures
  - Empowerment and legal authorities
- Special Operations
  - Understanding the applicable requirements
  - Responsibilities of industry and authority
  - Authority investigation and acceptance
- Bilateral Agreements and Article 83 Bis: Transfer of Responsibility
- Safety Assessments of Foreign Aircraft and “Blacklist”
- Remote Operations
- Quality Systems
- ICAO Doc 9859 (Safety Management Systems)
- State Safety Programme: The ICAO Position
- Safety Data Management
- Cabin Safety
- Ramp Safety Awareness
- Defects, Accident and Incidents Investigation
- Human Factors Awareness, Skills and Knowledge
  - Human performance and its limitations
- Flight Operations and Maintenance Interface: The Air Operator Certificate
- Human Factors Awareness, Skills and Knowledge
  - Human performance and its limitations
- Flight Operations and Maintenance Interface: The Air Operator Certificate

WHO SHOULD ATTEND
Experienced aviation professionals such as former licensed aircraft maintenance engineers or technicians who are now maintenance inspectors in civil aviation authorities or those who are responsible for aircraft operations and/or maintenance.

DURATION
1 week 3 days
Safety Oversight Managers

OBJECTIVES
This course provides safety oversight inspectors (flight operations/airworthiness maintenance/airworthiness engineering) with an understanding of the fundamental principles contributing to the effective and efficient management of safety oversight activities of a State’s aviation regulatory body. Besides the ICAO Standards and Recommended Practices (SARPs), references are also made to various national civil aviation regulations. It helps prepare States in meeting international requirements as well as update their understanding of the fundamental principles contributing to the effective and efficient management of safety oversight activities.

OUTLINE
- Obligations Under the Chicago Convention
- ICAO SARPs
- ICAO Organisation Structure
- Expanded ICAO Universal Safety Oversight Audit Programme Processes and Audit Results
- Establishment and Management of the Safety Oversight System
- ICAO Safety Audit Oversight Manuals
- Management of Aircraft Operators
- Selection and Recruitment of Technical Staff for Civil Aviation
- Development of Staff Training and Competence Policy
- Regulatory Framework
- Inspectors’ Handbooks
- National Aviation Regulatory Authority Organisation Structure and Roles: Powers and Enforcement
- Quality Systems and Safety Management
- ICAO Aircraft Incident/Accident Investigation Audits
- Management of Aerodrome Safety
- Air Traffic Services Safety Management and Audits
- CAAS Safety Management System
- Designation and Delegation Policy
- Operations and Management of Personnel Licensing
- Management of Cabin Safety Operations
- Legal Principles Underlying Safety Oversight Functions
- Bilateral Agreements and Article 83 Bis: Transfer of Responsibility
- Success Factors: Managing Global and Corporate Strategies
- Best Practices In Resource Management
- Strategic Business Planning for Managers
- Management of the Regulator and Industry Interface
- Management of Aircraft Incident/Accident Investigation
- Management of Dangerous Goods
- Understanding and Managing Human Factors in a Regulatory/Operational Aviation Environment
- Exercises and Panel Discussions

WHO SHOULD ATTEND
Professionally qualified and experienced managers from civil aviation authorities or those who are responsible for aircraft operations and/or maintenance.

DURATION
2 weeks 3 days

Aviation Security: Auditing Techniques and Developing Security Manuals

OBJECTIVES
This course provides participants with a better understanding of the global aviation security framework as well as guidance on developing effective auditing plans for their organisation. Besides learning auditing techniques and procedures, the course also equips participants with the tools to develop Security Manuals to meet the requirements in ICAO Annex 17 (Security) and ICAO Document 8973 (Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference).

OUTLINE
- Global Aviation Security Framework
  - Overview of current framework of international civil aviation
  - Key players involved in aviation security and their impact on security strategies
  - Implementation of ICAO’s mandated Standards and Recommended Practices (SARPs)
- ICAO Annex 17 and Doc 8973
  - Importance of understanding Annex 17 and Document 8973 for security personnel
  - Application of SARPs to airports and airlines
- Security Auditing
  - Roles and responsibilities in security auditing
  - The need for and importance of effective security management processes
  - Responsibilities within the organisation for security management
- Auditing Techniques
  - Fundamental principles of auditing
  - Objective-based auditing and reporting methods
  - Planning of audit visit
  - Development of auditors working documents, checklists etc.
  - Audit entry and exit meetings
  - Investigative auditing skills and techniques
- Audit Reporting
  - Factual reporting of audit findings
  - Regulatory audit reports and records
  - Auditor competency and development issues
- Post Audit Follow-up
  - Process and time scales of corrective actions
  - Effective corrective action, audit follow-up and closeout mechanisms
- Inspections, Surveys and Testing
  - Roles and responsibilities
  - Conducting of inspections, surveys and testings
  - Recording findings from inspections, surveys and testings
  - Determining competencies of inspectors
- Security Manuals
  - Contents
  - Interpretation and procedures
  - Development of security manuals
  - Practical exercises

WHO SHOULD ATTEND
Executives, security managers and supervisors of civil aviation authorities, airports authorities/operators and airlines as well as other personnel supporting aviation security operations in their organisations.

DURATION
5 days
Workshop on Crisis Management in Aviation Security

OBJECTIVES

This workshop provides an overview of international aviation security conventions, regulations and principles. Participants will have a good understanding of ICAO Annex 17 (Security: Safeguarding International Civil Aviation Against Unlawful Interference) and ICAO Document 8973 (Security Manual). The workshop also shares best practices in the management of a crisis. Human factors in security and training of aviation security personnel will also be addressed.

OUTLINE

- Human Factors in Security
  - Human information processing
  - Focus detection
  - Physiology and circadian
  - Vigilance: Signal detection
  - Stress and vigilance
- Crisis Management
  - Definition and stages of a crisis
  - Role of appropriate authorities and airlines
  - Crisis management procedures
  - Exercises and case studies
- Staffing for Aviation Security (AVSEC) Operations
  - Staff set-up for AVSEC operations
- Training for AVSEC Personnel
  - Human resource development process in security training
- Aviation Issues, Challenges and Trends
  - Types of threats
  - Measures to minimise threats
  - Case studies
- Contingency Planning
  - Identification of threats
  - Risks management
  - Best practices
  - Contingency planning exercises

WHO SHOULD ATTEND

Managers involved in the handling of crisis management or aviation security from civil aviation authorities, airport authorities/operators, ground-handling agencies, airlines and support services as well as personnel from law enforcement agencies and government representatives involved in aviation security.

DURATION

5 days

Aviation Medicine for Medical Examiners

Jointly organised with the International Academy of Aviation and Space Medicine

OBJECTIVES

This course equips qualified physicians with the knowledge and skills to conduct medical examinations for private and professional pilots and air traffic controllers (Class 1, 2 and 3 licences) in accordance with ICAO’s Standards and Recommended Practices, including the amendments to ICAO Annex 1 (Personnel Licensing), applicable from November 2005. Participants will better appreciate the aviation environment and its impact on various clinical conditions. This course also provides participants with practical examples and experiences on the conditions under which pilots and air traffic controllers perform their duties.

OUTLINE

- Introduction
  - Human factors in the aviation system: Responsibility of a designated medical examiner (DME) in air safety
  - Aviation medicine: History and evolution
  - International and national regulations: ICAO Annex 1 (Chicago Convention)
  - ICAO Doc 8984 (Manual of Civil Aviation Medicine): Origin, objectives and content
- Medical Requirements: Basic Assessment Principles of Fitness for Aviation Duties
  - Aviation physiology: Basic principles, pressure changes and acceleration forces
  - Operational and environmental conditions
  - General physical and mental requirements for licences
  - Visual and hearing requirements for licences
- Cardiovascular System
  - Basic principles of cardiovascular physiology
  - Risk of sudden incapacitation
  - Specific cardiovascular conditions and their treatment
  - Assessment of satisfactory recovery from angina and myocardial infarction
  - Assessment for licencing after angioplasty, stenting and CABG
- Digestive System
  - Basic principles
  - Abdominal pain, gastrointestinal and hepato-biliary conditions
  - Gastritis, peptic ulcer, GERO: Treatment and complications
  - Post-surgical conditions
- Endocrine Diseases
  - Diabetes mellitus: Basic principles, definitions, aetiology, symptomatology, diagnostic criteria
  - Anti-diabetic therapy
  - Assessment of fitness for aviation duties
- Respiratory System
  - ICAO Annex 1 requirements
  - Assessment of applicants with respiratory problems
- Urinary System
  - Basic principles
  - Urine findings
- Blood-related Disorders
  - Haematology, polycythemia, anaemias (including haemoglobinopathies and traits), leukaemias, lymphomas
  - Assessment of medical fitness for aviation duties
- Satisfactory control criteria for aviation duties
- Insulin treated diabetics and aviation duties
- Other endocrine disorders
- Tuberculosis, lithiasis
- Assessment of fitness for aviation duties
Aviation Medicine for Medical Examiners (Continued)

OUTLINE (Continued)

• Gynaecology-obstetrics
  - Basic principles
  - Menstrual disorders
  - Pregnancy and aviation duties
  - Abortion

• Mental Fitness and Neurological Disorders
  - Assessment of mental fitness for aviation duties
  - Psychiatric disorders in aviation personnel
  - Disease of the nervous system
  - Electro-encephalography in aviation medicine
  - Use of SSRIs and aviation duties

• Tropical Diseases
  - Basic principles
  - Diseases transmitted by vectors
  - Food, water-borne and parasitic diseases
  - Food poisoning
  - Hygiene and sanitation in aviation
  - Disinfection and disinsection of aircraft

• Otorhinolaryngology
  - Hearing assessment, audiometry
  - Nose and para-nasal sinuses
  - The vestibular system
  - Special testing in ENT
  - Post-surgical conditions

• Ophthalmology
  - Examination techniques for aviation duties
  - Visual acuity assessment
  - Visual fields
  - Ocular muscle balance
  - Colour vision
  - Assessment of pathological eye conditions
  - Refractive surgery

• Flight Crew Fatigue
  - Duty and flight duty period
  - Circadian rhythms
  - Flight time limitation
  - Short, long and ultra-long range flights
  - Fatigue risk management

• International Health Regulations
  - Applicability in the aviation sector
  - SARS
  - Avian influenza
  - World Health Organisation (WHO) regulations
  - Pandemic planning: WHO guidelines; ICAO State guidelines; Airports Council International and International Air Transport Association guidelines

• HIV
  - Diagnosis and treatment
  - ICAO Annex 1 requirements
  - Assessment for aviation duties

• On-duty/In-flight Incapacitation
  - Sudden versus subtle
  - Complete versus partial
  - Medical aspects versus operational aspects

• Flexibility and Waivers
  - Consideration of knowledge, skills and experience
  - Trained versus untrained crew
  - Medical flight test

• Safety Management System (SMS)
  - SMS and ICAO requirements
  - SMS applicability in aviation medicine
  - Data collection and application

• Accident Investigation and Prevention
  - The human factors aspect
  - Role of a DME
  - Identification of victims
  - Determination of causes
  - Circumstances and events

• Hazards of Medication and Drugs in Aviation

PRE-COURSE READINGS
Pre-course readings of about 200 pages and estimated to take 40 hours will be provided two weeks before the course commences. Participants are strongly encouraged to complete the readings in order to fully benefit from the course.

COURSE DELIVERY
The course is delivered through presentations, case studies, group discussions, video clips and hands-on practical training where applicable. Visits to relevant facilities (such as the air traffic control and flight simulators), to acquaint participants with the work environment of pilots and air traffic controllers, will be organised.

COURSE ASSESSMENT
Participants will have to pass an examination to be awarded a “Certificate of Successful Completion”.

WHO SHOULD ATTEND
The course will benefit medical officers of civil aviation authorities and airlines, existing DMEs and Authorised Medical Examiners (AMEs), those who aspire to be DMEs and AMEs and medical assessors responsible for conducting medical examinations on pilots and air traffic controllers. General practitioners, hospital doctors and health professionals with an interest in aviation will also find this course useful as an introduction to aviation medicine.

DURATION
5 days