



International  
Civil Aviation  
Organization

Organisation  
de l'aviation civile  
internationale

Organización  
de Aviación Civil  
Internacional

Международная  
организация  
гражданской  
авиации

منظمة الطيران  
المدني الدولي

国际民用  
航空组织

Ref.: TC 2/3.82 (SGP16801, SGP18801) – 19/18

15 марта 2019 года

**Содержание:** Программа Сингапура и ИКАО по подготовке кадров для развивающихся стран, 2018/2019 гг., и Программа Сингапура и ИКАО для молодых авиационных специалистов, 2019 г.

**Требуемые действия:** принять к сведению информацию и при наличии заинтересованности заполнить в режиме онлайн формы на получение стипендии и гранта

Имею честь сослаться на совместную Программу Сингапура и ИКАО по подготовке кадров для развивающихся стран (DCTP), спонсором которой является правительство Сингапура при административной поддержке, обеспечиваемой Управлением технического сотрудничества (ТСВ) ИКАО. DCTP будет продлена еще на три года (с апреля 2019 года по март 2022 года) и расширена в целях предоставления 330 стипендий и 10 грантов. С 2001 года было выделено 1120 стипендий и 16 грантов.

В прошлом году в ознаменование 60-летия Авиационной академии Сингапура (SAA) и 15-й годовщины членства Сингапура в Совете ИКАО была создана новая пятилетняя Программа Сингапура и ИКАО для молодых авиационных специалистов (PYAP) для предоставления 600 стипендий и 40 грантов молодым авиационным специалистам (в возрасте 35 лет и моложе). PYAP спонсируется правительством Сингапура и осуществляется при административной поддержке ТСВ ИКАО. С 2018 года было выделено 99 стипендий и 17 грантов.

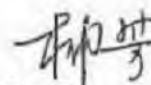
С удовлетворением сообщаю, что в 2019/2020 гг. в рамках DCTP будет предоставлено 110 стипендий и 10 грантов, а в рамках PYAP – 120 стипендий и 15 грантов. Подробная информация о курсах SAA, а также порядке и условиях предоставления стипендий и грантов содержится в дополнениях А и В применительно к DCTP и PYAP соответственно. Однако важно иметь в виду, что вопросы, связанные с содержанием учебной программы и порядком проведения курсов, не входят в компетенцию Организации, и, следовательно, полную ответственность за них несет правительство Сингапура.

Правительствам, выдвигающим кандидатов на получение стипендий, следует заполнить и подписать соответствующую доступную в режиме онлайн форму (Nomination Form) до того, как кандидаты подадут заявки в режиме онлайн, как указано ниже:

Для стипендий DCTP/РУАР: <https://saa.caas.gov.sg/fellowships>  
Для грантов DCTP: <https://tinyurl.com/dctp-scholarship>  
Для грантов РУАР: <https://tinyurl.com/pyap-scholarship>

Просьба иметь в виду, что государства, предложившие кандидатуры, будут проинформированы о результатах отбора примерно за три недели до начала конкретного курса.

Примите заверения в моем самом высоком уважении.



Фан Лю  
Генеральный секретарь

**Приложения:** (только на английском языке)

- A. Информация о Программе Сингапура и ИКАО по подготовке кадров для развивающихся стран, 2019/2020 гг.
- B. Информация о Программе Сингапура и ИКАО для молодых авиационных специалистов, 2019 гг.

## Singapore – ICAO Developing Countries Training Programme 2019/2020

Singapore and ICAO jointly established a Developing Countries Training Programme (DCTP) in 2001 which is sponsored by the Singapore Government and administered by the ICAO Technical Cooperation Bureau for specialised training programmes conducted by the Singapore Aviation Academy (SAA). The programme has been awarding fellowships for training at SAA. It was further extended and expanded in 2004, 2007, 2010, 2013 and 2016. In 2013, a new Scholarship for Diploma in Civil Aviation Management was introduced. In response to overwhelming and continued demand, the DCTP will be extended for another three years from 2019 to 2022 and expanded to provide 330 Fellowships and 10 Scholarships. A total of 110 Fellowships and 10 Scholarships will be available in 2019/2020 and we welcome applications from government officials of developing ICAO Member States.

## Fellowships

Training Programmes	Dates	Closing Dates for Application
<u>Strategic Airport Management Programme</u>	6 – 10 May 2019	10 April 2019
<u>Air Disasters: Crisis Planning and Business Continuity Management</u>	17 – 21 June 2019	28 April 2019
<u>Safety Oversight Managers</u>	1 – 18 July 2019	12 May 2019
<u>Safety Oversight Inspectors (Air Navigation Services)</u>	8 – 12 July 2019	19 May 2019
<u>Civil Aviation Management Programme</u>	8 – 19 July 2019	19 May 2019
<u>Aviation Security Management Programme</u>	15 – 18 July 2019	26 May 2019
<u>Aviation Weather Risk Management</u>	22 – 26 July 2019	2 June 2019
<u>Safety Oversight of Aviation Meteorological Services</u>	29 July – 1 August 2019	9 June 2019
<u>Methodology and Best Practices for Aviation System Block Upgrades (ASBU) Implementation</u>	19 – 23 August 2019	30 June 2019
<u>Emergency Management Workshop</u>	2 – 6 September 2019	14 July 2019
<u>Crisis Management in Aviation Security Workshop</u>	9 – 13 September 2019	21 July 2019
<u>Air Navigation Services Leadership and Management Programme</u>	4 – 6 November 2019	15 September 2019
<u>Air Traffic Management Safety Investigation and Analysis</u>	4 – 8 November 2019	15 September 2019
<u>Procedures and Design Process for Performance-based Navigation (PBN) Airspace</u>	18 – 29 November 2019	29 September 2019
<u>Aviation Security Auditing Techniques and Developing Security Manuals</u>	13 – 17 January 2020	24 November 2019
<u>Safety Oversight Inspectors (Flight Operations)</u>	17 – 28 February 2020	2 January 2020
<u>Safety Audits of Air Traffic Services</u>	17 – 21 February 2020	2 January 2020
<u>Incident Investigation: Effective Safety Risk Management</u>	9 – 13 March 2020	19 January 2020
<u>Aeronautical Information Services – Aeronautical Information Management</u>	23 – 27 March 2020	2 February 2020

*Note: Course dates and details are subject to change. For the latest course dates and details, please visit SAA's website at <https://saa.caas.gov.sg>.*

### **Terms of Fellowships and Application Procedures**

The Government of Singapore will bear the training fees, daily allowance of sixty Singapore Dollars (S\$60) and hotel accommodation for participants accepted for the programmes. Complimentary breakfast will be provided at the hotel and lunch at SAA during training days. Travel arrangements are to be made and costs borne by the nominating Governments.

Hotel accommodation will be provided for the training duration, i.e. one day before course commencement (after 2 pm) and one day after the course (till 12 noon). Daily allowance will be limited to the training duration, i.e. from the start of the course up to the last day of the course. Expenses to be incurred for stay beyond this duration will not be covered. Participants are advised to secure their own overseas travel insurance to cover themselves for the period of the training in Singapore.

Nominating Governments should preferably nominate not more than two candidates for each course and indicate which candidate should take priority if more than one candidate is nominated.

Fellowship applications should be submitted online at <https://saa.caas.gov.sg/fellowships> by the stated closing dates. Nomination Forms, signed and endorsed by the Director-General of Civil Aviation or equivalent, must be completed and submitted as part of the online application.

### **Scholarships**

Scholarships are offered for SAA's Diploma in Civil Aviation Management or Diploma in Aviation Safety Management. The Diplomas comprise compulsory and elective courses which must add up to six weeks, to be completed within three years.

### **Terms of Scholarships and Application Procedures**

The Government of Singapore will bear the training fees, daily allowance of Sixty Singapore Dollars (S\$60), hotel accommodation and up to three economy return airfares for successful applicants. Complimentary breakfast will be provided at the hotel and lunch at SAA during training days.

SAA will purchase the air tickets for the accepted participant in Singapore. Arrangements will be made for the participant to arrive in Singapore one day before the course commences and depart Singapore one day after the course ends.

Hotel accommodation will be provided for the training duration, i.e. one day before course commencement (after 2 pm) and one day after the course (till 12 noon). Daily allowance will be limited to the training duration, i.e. from the start of the course up to the last day of the course. Expenses to be incurred for stay beyond this duration will not be covered. Participants are advised to secure their own overseas travel insurance to cover themselves for the period of the training in Singapore.

Nominating Governments should nominate not more than one candidate for the Scholarship.

Scholarship applications should be submitted online at <https://tin.vurl.com/dctp-scholarship>. Nomination Forms, signed and endorsed by the Director-General of Civil Aviation or equivalent, must be completed and submitted as part of the online application.

For enquiries, please contact:

Fellowships Management  
Singapore Aviation Academy  
Tel: (65) 6540 6232 / 6540 0433  
Fax: (65) 6542 9890 / 6543 2778  
Email: [saa\\_fellowships@caas.gov.sg](mailto:saa_fellowships@caas.gov.sg)

**ICAO Fellowship Programme**

ICAO firmly believes that the safe and efficient operation of air transport systems is totally dependent on the skills and knowledge of the national personnel who operate and maintain these systems. ICAO, with UNDP support, has assisted over 50 developing States in establishing national civil aviation training centres. Through its Technical Cooperation Programme, ICAO has been active in awarding fellowship training in the various fields of civil aviation. In the past 15 years, around 15,000 fellowships were awarded to almost every developing State.

**Singapore Aviation Academy (SAA)**

SAA is the internationally-recognised training arm of the Civil Aviation Authority of Singapore. Made up of four specialised schools – the School of Aviation Management, the School of Aviation Safety and Security, the School of Air Traffic Services and the School of Airport Emergency Services – SAA has trained over 129,000 participants from 200 countries and territories. SAA was conferred the prestigious 34<sup>th</sup> Edward Warner Award by the ICAO Council on behalf of its then 185 Member States in 2000 “in recognition of its eminent contribution as a centre of excellence in international civil aviation training”. In 2012, SAA was certified as an ICAO TRAINAIR *PLUS* Full Member. As a member, SAA aims to contribute towards the common goal of elevating global aviation training standards by developing educational resources and sharing valuable knowledge with the aviation community. SAA is also endorsed as an ICAO Government Safety Inspector Training Centre and ICAO Aviation Security Training Centre. In 2014, SAA was designated an ICAO Regional Training Centre of Excellence and re-designated in 2017 for another three years.

## STRATEGIC AIRPORT MANAGEMENT PROGRAMME

6 – 10 MAY 2019

This programme will provide you with the policy formulation competencies so as to effectively position your airport to achieve the desired strategic outcomes required by stakeholders.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Formulate long-term strategic objectives to manage airports efficiently and profitably
- Identify key drivers and considerations of airport management functions
- Gain insights on creating a positive passenger service experience
- Forecast airport traffic for capacity planning and driving of future traffic demand
- Identify and manage the significant factors contributing to airport efficiency
- Set, align and apply performance indicators for key airport operations

- Operations efficiency and service quality development
- Examples of airport strategic transformation
- Success factors for airports
- Airport benchmarking

### Airport Management

- Terminal services management
- Marketing to stakeholders
- Safety management
- Emergency services management
- Air cargo management
- Air navigation services
- Airport business continuity management

### WHAT IS COVERED

#### Strategic Airport Development

- Airport positioning and strategy development
- Commercial and retail strategy development
- Airport network, capacity and traffic development

### LEARNING ACTIVITIES

- Case studies
- Interactive workshops
- Learning journeys to Changi Airport

### WHO SHOULD ATTEND

This programme is beneficial for middle to senior management personnel involved in airport development and operations from civil aviation administrations, airport authorities and airport operators.



## AIR DISASTERS: CRISIS PLANNING AND BUSINESS CONTINUITY MANAGEMENT

17 – 21 JUNE 2019

This course provides you with the fundamental tools on crisis planning and response after an air disaster and is led by a team of professionals with practical knowledge and experience in crisis planning.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Identify the key response strategies managing air disaster crisis
- Learn the different perspectives of a public and private sector
- Understand and apply the key thrusts of an integrated approach in crisis planning and coordination involving the key stakeholders
- Set up a business continuity plan
- Apply recovery strategies for business continuity

### WHAT IS COVERED

- Crisis Planning in Civil Aviation
  - Fundamentals of crisis preparedness and management
  - Aircraft search & rescue (SAR) and rescue coordination centre (RCC) operations
  - Overview of next-of-kin management
  - Overview of crisis communications
  - Overview of aircraft accident investigation
  - Airport crash site management

- Airport crisis management & emergency operations centre (EOC) operations
- Crisis management planning & SOP's from:
  - Airline's perspectives
  - Airport's perspectives
  - Aviation Regulator's perspectives

- Business Continuity Management (BCM)
  - Standards and guidelines
  - Understanding the aviation business
  - Business continuity and recovery strategies
  - Business continuity plan development
  - Systematic implementation
  - Crisis communication within BCM
  - Perspectives on BCM from operators
  - Exercise planning, conducting, controlling & after action review

### LEARNING ACTIVITIES

- Case Studies
- Table-top Exercises
- Learning Journey to Crisis Management Centres and Related Facilities

### WHO SHOULD ATTEND

This course is beneficial to management, senior executives and operational personnel from civil aviation administrations, airport operators, airlines, aircraft manufacturers and personnel with responsibilities in crisis management and business continuity planning.

## SAFETY OVERSIGHT MANAGERS

1 – 18 JULY 2019

This course provides you 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.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the role and responsibilities of a safety oversight manager
- Understand the ICAO Standards and Recommended Practices (SARPs) and other national civil aviation regulations relating to safety oversight
- Update your organisation's safety oversight system

### WHAT IS COVERED

- 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
- Civil Aviation Authority of Singapore's 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

### LEARNING ACTIVITIES

- Exercises
- Panel Discussions

### WHO SHOULD ATTEND

This course is beneficial to personnel responsible for the safety oversight of aircraft operations and maintenance such as managers and inspectors from civil aviation administrations.



## SAFETY OVERSIGHT INSPECTORS (AIR NAVIGATION SERVICES)

8 – 12 JULY 2019

This course provides you with an understanding of the fundamental principles underlying the safety oversight measures relating to air navigation services (ANS) required of a State's aviation regulatory body and their importance.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the role and responsibilities of an ANS safety oversight inspector
- Understand the ICAO Standards and Recommended Practices (SARPs) and other national civil aviation regulations relating to ANS
- Update your organisation's safety oversight mechanisms relating to ANS

### WHAT IS COVERED

- 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 regulation
- 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 (ATM)
  - ATS safety management
  - ATS system capacity and air traffic flow management (ATFM)

- 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
  - ATFM
  - Special procedures and phraseology
  - Search and rescue
  - Meteorology (MET)
  - Aeronautical Information Services (AIS)
- The ANS Safety Oversight Inspector
  - Roles and responsibilities
  - Empowerment and legal authority
  - Training
- The Service Provider
  - Roles and responsibilities
  - Quality systems in AIS and MET
  - Audits
- 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

This course is beneficial to personnel responsible for ANS oversight management and inspection such as inspectors, safety managers and auditors from civil aviation administrations and air navigation service providers.

## CIVIL AVIATION MANAGEMENT PROGRAMME

8 – 19 JULY 2019

This programme will provide you with a broad overview and perspective of the civil aviation sector, its major elements and their interfaces in an integral eco-system. It will also provide you with a focused examination of each element, their key requisites and the regulatory and operational best practices to meet these requirements and address prevailing and future challenges.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the fundamental principles, and main aspects and factors of civil aviation
- Comprehend each of the major civil aviation elements, their inter- and external linkages, and their essentials
- Glean policies, strategies and methods in meeting the key requirements and dealing with issues

### WHAT IS COVERED

- Air Transport/Aviation and Economic Development
  - Economic Development and the Aviation Sector
  - Air Transport Development - Singapore's Experience
  - Air Transport Law and Regulations
  - Airline Strategies
  - Aviation and Human Resource Development
  - International Aviation and Climate Change
  - Public Governance and Policies
- Airport Planning and Management
  - Fundamentals of Airport Planning and Design
  - Airport Management
  - Airport-Airlines Collaboration in Hub Airport
  - Airport-Airlines Partnership – CAG's Experience
  - Airport Commercial Management – CAG's Experience
  - Service Quality Management

- Aviation Safety and Security
  - Safety Oversight and State Safety Programme
  - Safety Oversight of Air Operators and Approved Organisations
  - Safety Oversight of Aerodromes and Air Navigation Services
  - Safety Management Systems
  - Aviation Security
  - Safety and Security Aspects in Handling Dangerous Goods
  - Human Factors in Aviation
- Air Traffic Management
  - Air Traffic Management
  - Global Air Navigation Plan and Aviation System Block Upgrades
  - ATM Initiatives – CAAS' Experiences
- Crisis Management and Emergency/Business Continuity Planning
  - Crisis Management in Aviation
  - Emergency Response to Aircraft Accidents
  - Aircraft Accident: Investigation and Management
  - Public Health Management and Aviation
  - Crisis Communications
  - Business Continuity Planning

### LEARNING ACTIVITIES

- Visits to Changi Airport, Singapore Air Traffic Control Centre and MITRE Asia Pacific (Singapore)
- Case Studies
- Group Exercise

### WHO SHOULD ATTEND

This course will be beneficial to middle management personnel from civil aviation administrations, airport authorities, air navigation service providers, airlines, and aviation-related government and private organisations.

## AVIATION SECURITY MANAGEMENT PROGRAMME

15 – 18 JULY 2019

This programme provides you with an understanding of the requirements, principles and practices to effectively implement aviation security (AVSEC) management.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand AVSEC management concepts
- Apply best practices for planning and managing AVSEC
- Develop an AVSEC framework in line with ICAO requirements
- Cargo and mail security
- Threats to critical aviation information and communication technology systems
- Enhancing the Security Manager's Toolkit
  - Training effectiveness
  - Human factors in AVSEC operations
  - Harnessing new technologies, research and development

### WHAT IS COVERED

- Understanding AVSEC
  - AVSEC: The big picture
  - ICAO's role and approach to aviation security
  - The State's security oversight obligations
  - Aircraft security
- Building a Robust AVSEC Framework
  - Regulatory oversight
  - Crisis management and response to acts of unlawful interference
  - Quality control
  - Security management system
- Fostering Effective Partnerships in AVSEC
  - Airport security

### WHO SHOULD ATTEND

This programme is beneficial to AVSEC managers and supervisors from civil aviation administrations, airport authorities, air navigation service providers, airlines and AVSEC related agencies.

## AVIATION WEATHER RISK MANAGEMENT

22 – 26 JULY 2019

This course is designed to equip you with knowledge and skills to determine how hazards and risks from adverse weather conditions impact flight operations, and ways to manage these risks.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Identify and use various weather and climate products and services to facilitate operational decision-making, flight planning, operational control and air traffic services.
- Put in place practices, processes and procedures to effectively and proactively manage weather-related risks, enhancing operational effectiveness and efficiencies.
- Identify ways to enhance safety and performance, resulting in the reduction of passenger and crew injuries, diversions and aircraft damages due to adverse weather.

### WHAT IS COVERED

- Impact of Weather on Aviation Operations
  - Effects and cost of weather to aviation
  - New trends in occurrence causation
  - Weather-related mishaps (e.g. runway excursions, loss of control, turbulence, high-altitude ice-crystal icing)
- Current Weather Safety Nets
  - Weather information status
  - Aviation weather system
  - ICAO Annex 3 (Meteorological Services for International Air Navigation)
  - World area forecast system
  - Tropical cyclone warning centres
  - Volcanic ash advisory centres
  - Safety and quality initiatives
- Weather Decision-making
  - Naturalistic decision-making
  - Plan continuation error
  - Threat and error management
  - Situational awareness
  - Facilitating and improving decisions

- Weather Risk Management Systems
  - Aviation weather hazards and risks
  - Building a weather risk profile for your operation
  - Weather risk management process
  - Weather monitoring and review
  - Weather risk control system
  - Improving procedures for dispatching aircraft and coping with weather
  - Importance of training (weather in the aircraft simulator and applied weather training)
  - Integration with quality and safety management systems
- Climatology and Weather Patterns
  - Weather-related risks
  - Global climatology and weather patterns
  - Identifying regional weather risks
  - Identifying weather risks with station climatology
  - Improving meteorology in route manuals
- Investigation of Weather Occurrences
  - Weather investigations to support safety management systems (SMS) and safety performance
  - Event assessment process
  - “Weather Package” in data collection
  - Collection of human factors data
  - Analysis of meteorological data
  - ICAO Doc 9756 Part III (Manual of Aircraft Accident & Incident Investigation)
- Proactive Forecasting Systems for Supporting Decision Making
  - Effect of weather forecasting on commercial aviation
  - Supporting decision making in the cockpit, dispatch, tower, etc.
  - Tactical weather decision aids
  - Code grey forecasting system
  - Storm readiness programmes (e.g. typhoons, snow storms)

### WHO SHOULD ATTEND

This course is beneficial to aviation personnel from civil aviation administrations, airlines, air navigation service providers, airport authorities, investigation agencies, and meteorology agencies that use weather information for operational, investigation and safety purposes.

## SAFETY OVERSIGHT OF AVIATION METEOROLOGICAL SERVICES

29 JULY – 1 AUGUST 2019

This course provides you with an understanding of a State's safety oversight functions and activities relating to aviation meteorology (MET) in accordance with ICAO's requirements.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the ICAO standards on safety oversight relating to aviation MET
- Implement Quality Management System (QMS) and competency assessments for aviation MET staff
- Working Relationship between ICAO and World Meteorological Organisation
- Safety Oversight of Aviation MET services
  - Empowerment and legal authorities
  - Audit and inspection activities
  - Continuous monitoring
  - Singapore's experience

### WHAT IS COVERED

- Overview of the State's Safety Oversight Obligations
  - Critical elements of a safety oversight system
  - ICAO Standards and Recommended Practices
  - State Safety Programme
  - Safety Management System (SMS)
- ICAO Annex 3 and Docs 8896, 9837, 9873
  - MET observations and reports
  - Forecasts
  - Significant Meteorological Information (SIGMET), aerodrome warnings and wind shear alerts and warnings
  - QMS requirements
  - Training, qualification and competency standards requirements
- Safety Oversight MET Inspectors
  - Roles and responsibilities
  - Qualification and training
  - Skills and personal attributes
  - MET Inspector's handbook

### LEARNING ACTIVITIES

- Learning Journey to Meteorological Service Singapore
  - Set-up of MET Watch Office and MET Observation Station
  - Aviation weather services and products, including its role as ICAO designated Operational Meteorological Information (OPMET) gateway
  - Implementation of QMS and SMS

### WHO SHOULD ATTEND

This course is beneficial to personnel responsible for the effective regulation and oversight of aviation MET from civil aviation administrations, aviation accident investigation agencies and MET agencies.



## METHODOLOGY AND BEST PRACTICES FOR AVIATION SYSTEM BLOCK UPGRADES (ASBU) IMPLEMENTATION

19 – 23 AUGUST 2019

This course provides you with a common understanding of the Aviation System Block Upgrades (ASBU) methodology and how best to implement the modules. This interactive and practical course will also guide you in making capability-implementation decisions, developing a business case to support investment decisions and communicating the value impact of the ASBU framework, in support of your organisation's goals, objectives and requirements while maintaining alignment with the overall objectives of the global Air Traffic Management (ATM) modernisation programme. In partnership with SAA, this course is delivered by MITRE as a quality service from the Civil Air Navigation Services Organisation (CANSO).

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Assess the suitability of capabilities and business case elements for ASBU implementation and return on investments
- Develop an effective approach to cost-benefit analysis and performance metrics to support ASBU implementation
- Describe and apply concepts, framework and requirements of ASBU to resolve current ATM system deficiencies
- Establish decision points in your implementation schedule to monitor progress
- Understand how decision makers select, prioritise and implement ASBU capabilities as well as the negotiation process with multiple ASBU stakeholders

### WHAT IS COVERED

- ASBU overview and value: Guidance in selecting ASBU capabilities
  - Introduction of the ASBU concept and framework
  - Global aviation challenges
  - Course conceptual model
  - Introduction of course case study and exercise format
- Identifying operational performance
  - Decision process to understand need for upgrades

### WHO SHOULD ATTEND

This course is beneficial to decision-makers from civil aviation administrations, air navigation service providers, airlines, airport authorities, air traffic management (ATM) system manufacturers and solution providers who are responsible for ATM modernisation programmes and ASBU capability-implementation.

- Evaluating economic, demographic and market trends
- Identifying the aviation system's projected demand and expected capacity
- Needs and Dependency Analysis (NDA) overview: Prerequisites and preparation
- NDA candidate ASBU modules needs dependencies and needs inventory
- NDA baseline inventory and gap analysis
- Operational and Business view of case study alternatives
  - NDA impact analysis
  - Assessing ASBU operational effects using performance indicator
  - Business case analysis
  - Operational benefits
  - Life-cycle costs
  - Aviation service provider financial results
  - Aircraft operator financial results
  - Identifying other social effects: Passengers, safety and environment
  - Summarising social results

### LEARNING ACTIVITIES

- Case Study on economic value and decision-making
  - Economic impact of ASBU investment policy
  - Multi-stakeholder: negotiation and timing to realise the 'best' return on investment
- Multi-stakeholder role-play exercise



## EMERGENCY MANAGEMENT WORKSHOP

2 – 6 SEPTEMBER 2019

This strategic workshop provides you with updates on the latest developments in emergency planning and aircraft incident management.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand and implement ICAO Standards and Recommended Practices (SARPs) relating to emergency preparedness
- Identify risks at airports and recommend appropriate actions to counter and manage such risks
- Develop an incident and emergency management system for your organisation
- Aircraft Rescue Fire-fighting Management
- Airport Emergency Planning
- Incident and Emergency Management System
- Fire-fighting and Rescue Disaster Handling Experience

### WHAT IS COVERED

- Emergency Preparedness for Airport Emergency Services (AES)
- Legal Aspects of Disaster and Emergency Management
- Crisis Management at Changi Airport
- ICAO's Requirements for Very Large Capacity Aircraft (VLCA) and its Emergency Management
- Medical Response to Major Incidents at Airports
- Managing Maritime Disaster
- Visit to Changi Airport Fire Station
- Psychological Impact
- Bulk Fuel Fire Management
- Airport Exercise Planning
- Aircraft Accident Investigation

### LEARNING ACTIVITIES

- Case Studies
- Learning journey

### WHO SHOULD ATTEND

This workshop is beneficial to fire officers, emergency service commanders, airport executives and operational supervisors from civil aviation administrations, airport authorities, emergency service providers and airlines.

## CRISIS MANAGEMENT IN AVIATION SECURITY WORKSHOP

9 – 13 SEPTEMBER 2019

This workshop provides you with the competencies to perform effective Crisis Management (CM) and apply appropriate risk management strategies, in line with international Aviation Security (AVSEC) CM, regulations and principles. This course is developed in accordance with ICAO Annex 17 (Security) and ICAO Document 8973 (Security Manual).

### WHAT YOU WILL LEARN

Upon completion of this workshop, you will be able to:

- Plan for contingency and how to minimise threats
- Perform effective CM in line with international best practices
- Apply risk management strategies as part of CM
- Understand AVSEC CM and risk management principles and regulations

### WHAT IS COVERED

- Threats and risks facing the aviation industry
  - Past, current and emerging threats
- Concept of risk management
  - ICAO's recommended process
  - Risk management practical exercise
- Overview of crisis management
  - Characteristics of a crisis
  - Basic principles
  - Phases of a crisis
  - Principles of command and control
- Crisis management-regulators response
  - Types of incidents
  - Roles of the appropriate authorities
  - Functions of crisis management team
- Crisis management-airlines response
  - Sequence of activities
  - Airlines role
  - Stages of activation

- Hijack-airlines response
  - Types of hijacks
  - Phases of hijack
  - In-flight procedures
  - Cockpit protection
  - Crew response
  - Regulators response
- Crisis management planning
  - Elements of crisis plan
  - Stages in development of plan
- Crisis communications
  - Principles of good communications
  - Failures in communications
  - Emergency operations centre
  - Inter-agency communications
  - Internal communications
- Crisis Management Facilities
  - Types and location of command centres
  - Factors to consider in deploying command centres
  - Equipment for command centres
- Human Factors in security
  - Human information processing
  - Focus detection
  - Physiology and circadian
  - Vigilance: Signal detection
  - Stress and vigilance

### LEARNING ACTIVITIES

- Risk management practical exercise
- Crisis management -table top exercise
- Videos

### WHO SHOULD ATTEND

This workshop is beneficial to managers involved in the handling of crisis management or AVSEC from civil aviation administrations, airport authorities, ground handlers, airlines and AVSEC related agencies.

## AIR NAVIGATION SERVICES LEADERSHIP AND MANAGEMENT PROGRAMME

4 – 6 NOVEMBER 2019

This executive-level programme provides you with the latest updates and challenges in Air Navigation Service (ANS) and emerging trends in Air Traffic Management (ATM). It offers a platform for discussions on strategies, policies and key issues on ANS safety, capacity and efficiency, crisis management, emerging technologies and human resource development.

### WHAT YOU WILL LEARN

Upon completion of this programme, you will be able to:

- Identify the latest trends and challenges in the provision of ANS
- Recognise the essential elements involved in the formulation of an ATM Master Plan
- Appreciate the role of research and development in enhancing airspace capacity and ATM capability
- Develop strategies to manage safety, human resource development and crisis management
- Case study on Asia Pacific Seamless Sky (Regional collaboration and industry partnership)
- Safety Management Systems (SMS)
  - ANS safety management
  - Fatigue management
  - Case study: safety assurance
- Emerging technologies and the role of research and development in ATM
  - Overview of Unmanned Aerial Systems (UAS) traffic management system
  - Remote/Smart towers

### PROGRAMME HIGHLIGHTS

- ATM leadership
  - Overview
  - ICAO's perspective/technical cooperation
  - Perspectives from Federal Aviation Administration and Eurocontrol
  - Legal aspects of ANS provision – international and State's obligations
  - ANS safety regulations and audits
  - Panel discussion on ATM leadership: challenges and opportunities
- Capacity and efficiency
  - General overview including ICAO Aviation Systems Block Upgrade (ASBU)
  - ATM master planning
  - National and regional priorities
- Crisis Management
  - Search and rescue coordination
  - Emergency planning
- Human resource development and training philosophy
  - Training roadmap and licensing for Air Traffic Controllers (ATCOs)
  - Training roadmap for Air Traffic Safety Electronics Personnel (ATSEP)

### LEARNING ACTIVITIES

- Panel discussion
- Case study
- Briefing on Air Traffic Control simulators
- Learning journey to MITRE Asia Pacific Singapore (MAPS)

### WHO SHOULD ATTEND

This programme is beneficial to directors, chiefs, heads and/or their deputies from civil aviation administrations, air navigation service providers, airport authorities and senior officials from government agencies who will benefit from obtaining the latest updates in ANS developments and challenges faced.

## AIR TRAFFIC MANAGEMENT SAFETY INVESTIGATION AND ANALYSIS

4 – 8 NOVEMBER 2019

This course provides you with guidance on best practices in systemic safety investigation and analysis techniques as applied to air traffic management (ATM). It covers both relevant human factors theories and practices as well as examines key issues relating to safety investigation and analysis in the ATM environment.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand best practices in systemic safety investigation and analysis techniques in ATM
- Identify key issues in safety investigation and analysis in an ATM environment
- Apply witness interviewing skills and techniques

### WHAT IS COVERED

- Introduction to ATM Safety Investigation and Analysis
  - Overview
  - ICAO Annex 13 (Aircraft Accident and Incident Investigation)
  - Purpose and objectives
  - Analysis techniques
- Managing Human Error and Just Culture
  - Principles of human error
  - Just Culture
- Organisational Accidents
  - Overview
  - The SHEL Model (Software, Hardware, Environment, Liveware)
  - The Reason Model and Systemic Occurrence Analysis Methods (SOAM)
- Human Performance Limitations
  - Stress and fatigue
  - Threat and error management

- Information processing
- Situational awareness
- Decision-making

- Witness Interviewing Techniques
  - Theory and practice

### • SOAM

- Human involvement
- Contextual conditions
- Organisational and system factors
- Barriers in accident prevention

- Investigative Issues and Reporting Requirements
  - Investigator qualities
  - Human bias
  - Data organisation tools
  - Traps and tips for investigators

- Effective Findings and Recommendations
  - Developing effective findings and recommendations

### LEARNING ACTIVITIES

- Interviewing Skills
- Application of SOAM
- Case Studies
  - Practice and consolidation of safety investigation and analysis techniques
  - Syndicate work to further refine safety investigation and analysis techniques

### WHO SHOULD ATTEND

This course is beneficial to ATM managers, supervisors, safety managers, investigators, trainers and inspectors from civil aviation administrations, air navigation service providers and military air traffic service providers who are or will be involved in ATM safety management and investigation.

**PROCEDURES AND DESIGN PROCESS FOR PERFORMANCE-BASED NAVIAGATION (PBN)  
AIRSPACE**

**18 – 29 NOVEMBER 2019**

This course provides you with insights of Performance-based Navigation (PBN) concepts and their application for the planning and design of PBN airspace, in accordance with ICAO's Standards and Recommended Practices (SARPs). This course is developed in accordance with ICAO Document 9613 and related documents.

**WHAT YOU WILL LEARN**

Upon completion of this course, you will be able to:

- Develop strategies to design various airspace structures
- Recognise the essential elements in the ICAO Global Plan for CNS/ATM systems
- Understand the principles and concepts of PBN in airspace design

**WHAT IS COVERED**

- ICAO Global Plan for Communication, Navigation and Surveillance/ Air Traffic Management (CNS/ATM) Systems
- Commercial Air Transport Operations
- General Aviation and Aerial Work Operations
- Test Flights and Unmanned Aerial Vehicles Operations
- Civil Air Traffic Services (ATS) Operations
- Military ATS Operations

**WHO SHOULD ATTEND**

This course is beneficial to ATS managers, supervisors, safety managers, airspace planners, trainers and inspectors who are involved in ATS airspace design and procedures from both civil and military ATS providers and regulators, as well as airline flight planning personnel from operational control centres.

- Air Traffic Flow Management (ATFM)
- ATC Separation Criteria
- PBN
- Instrument Approaches Procedures – Conventional and Area Navigation (RNAV)
- Standard Instrument Departures/Arrivals (SIDs/STARs)
- Simplified Airspace Organisation
- Flexible Use of Airspace (FUA)
- Airspace Design Planning
- Air Traffic Management Initiatives in Singapore

**LEARNING ACTIVITIES**

- Design Different Airspace Structures
- Draft Airspace Design Implementation Rules for Different Civil and Military Scenarios.

## AVIATION SECURITY AUDITING TECHNIQUES AND DEVELOPING SECURITY MANUALS

13 – 17 JANUARY 2020

This course provides you with an understanding of the global aviation security framework and guidance on developing effective auditing plans and security manuals in line with ICAO Annex 17 (Security) and ICAO Document 8973 (Security Manual).

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Develop effective auditing plans
- Apply auditing techniques and procedures
- Develop security manuals that meet the requirements of the ICAO Annex 17 and ICAO Document 8973

### WHAT IS COVERED

- 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 Document 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
  - Decision making based on security audit results
  - Development of security audit plan
  - Initial review of an organisation's response to security regulatory requirements

- Auditing Techniques
  - Fundamental principles of auditing
  - Objective-based auditing and reporting methods
  - Planning of audit visit
  - Development of auditors' working documents and 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 timescales of corrective actions
  - Effective corrective action, audit follow-up and closeout mechanisms
- Inspections, Surveys and Testing
  - Roles and responsibilities
  - Conduct of inspections, surveys and testing
  - Recording findings from inspections, surveys and testing
  - Determining competencies of inspectors
- Security Manuals
  - Contents
  - Interpretation and procedures
  - Development of security manuals

### LEARNING ACTIVITIES

- Practical Exercises

### WHO SHOULD ATTEND

This course is beneficial to personnel responsible for aviation security operations and management from civil aviation administrations, airport authorities, airlines and aviation security related agencies.



## SAFETY OVERSIGHT INSPECTORS (FLIGHT OPERATIONS)

17 – 28 FEBRUARY 2020

This course provides you with an understanding of the fundamental principles underlying the safety oversight measures relating to flight operations required of a State's aviation regulatory body and their importance.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the role and responsibilities of a flight operations inspector
- Understand the ICAO Standards and Recommended Practices (SARPs) and other national civil aviation regulations on safety oversight relating to flight operations
- Review and update your organisation's safety oversight mechanisms relating to flight operations

### WHAT IS COVERED

- Introduction to Flight Operations
  - Flight operations safety oversight functions and activities
  - ICAO Doc 7300 (Convention on International Civil Aviation)
  - ICAO SARPs and guidance materials
- Role and Responsibilities of a 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

This course is beneficial to personnel responsible for the safety oversight of aircraft operations such as flight operations inspectors, safety managers and auditors from civil aviation administrations and airlines.

## SAFETY AUDITS OF AIR TRAFFIC SERVICES

17 – 21 FEBRUARY 2020

This course provides you with the competencies to plan and conduct effective safety audits of air traffic services (ATS), as well as identify and implement corrective actions plans relevant to an ATS operational environment. This course is developed in accordance with ICAO PANS ATM Doc 4444 requirements.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Define the role and responsibilities of safety auditors
- Plan and develop safety audit procedures
- Identify deficiencies in the ATS system
- Implement effective corrective action plans

### WHAT IS COVERED

- Safety audit concept
  - Safety management systems in ATS
  - Overview of ICAO Universal Safety Oversight Audit Programme (USOAP)
  - Continuous Monitoring Approach (CMA)
- Safety audit planning and processes
  - Defining the role and responsibilities of safety auditors
  - Developing procedures for safety audits
  - Planning safety audits
  - Analysing the safety audit process
  - Defining key findings and classifications of safety audits
  - Developing safety recommendations and observations
  - Finalising safety audit reports
  - Following up on safety audits
- Principles for safety audits
  - Use of concept models as tools to provide a systematic approach to safety review of ATS
  - Identification of audit objectives to ascertain compliance with ICAO PANS ATM Doc 4444 requirements
  - Analysis of processes and situations which could lead to non-compliance or non-adherence to standards and procedures
  - Implementation of corrective action plans to correct identified deficiencies in the ATS system
  - Implementation of safety enhancing measures to a related safety feature
- Scope of safety audits
  - Complete, concise and up-to-date ATS operations manuals, unit instructions and air traffic control coordination procedures
  - Provisions for ATS route structure
  - Application of prescribed separation minima
  - Provisions for visual or radar observation of manoeuvring areas
  - Procedures for low visibility aerodrome operations
  - Maintaining traffic volumes and controller workload
  - Procedures for failure or degradation of ATS systems, including communication, navigation and surveillance (CNS)
  - Procedures for reporting of incidents and other safety-related occurrences and the need for remedial action
- Operational and technical issues
  - Environmental working conditions for controllers
  - Generation and display of flight plan, control and coordination data
  - Design of equipment: Input and output devices for automation systems
  - CNS and other safety significant systems and equipment
- Licensing and training requirements
  - Training and licensing of controllers with valid ratings
  - Maintenance of competency through refresher training
  - Maintenance of efficient teamwork
  - Implementation of new or amended procedures and updated communications, surveillance and other safety significant systems
  - Maintenance of proficiency in the English language
  - Use of standard phraseologies

### WHO SHOULD ATTEND

This course is beneficial to personnel from civil aviation administrations and air navigation service providers responsible for the planning and conduct of safety audits of ATS such as safety managers and system planners.

## INCIDENT INVESTIGATION: EFFECTIVE SAFETY RISK MANAGEMENT

9 – 13 MARCH 2020

This course provides you with an understanding of how effective safety risk management and incident investigations form part of a functioning safety management system (SMS), and its role in developing a positive safety culture.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Investigate aircraft incidents as part of an SMS programme
- Develop safety actions
- Familiarise with effective safety risk management techniques and methods

### WHAT IS COVERED

- Overview of SMS
  - ICAO requirements for State Safety Programme and SMS
  - Safety concepts
  - Organisational accident and culture
  - Errors and violations
  - Non punitive safety programmes
- Incident Reporting
  - Mandatory incident reporting systems
  - Voluntary incident reporting systems
  - Confidential incident reporting systems
  - “In-house” incident reporting processes
  - Developing the right safety culture
- Incident Investigation
  - Incident investigation methods
  - Incident investigation reports

- Risk assessments and proposed safety actions

- Hazard Identification and Risk Management
  - Fundamental concepts
  - Understanding hazards
  - Hazard identification
  - Documentation of hazards
  - Risk assessment and management
- Risk Management
  - Fundamental concepts
  - Tools for risk assessment
  - Automation
  - Understanding human performance
  - Naturalistic decision making
  - Weather related risks
- Tools for Analysis and Decisions
  - Maintenance error decision aid
  - Ramp error decision aid
  - Procedural event analysis tool

### LEARNING ACTIVITIES

- Case Studies

### WHO SHOULD ATTEND

This course is beneficial to personnel responsible for planning, carrying out or managing aviation safety management programmes from civil aviation administrations, airport authorities, air navigation service providers, airlines, aircraft maintenance, repair and overhaul organisations, commuter operators, corporate aviation, aircraft and component manufacturers, military and air force, governmental agencies, emergency response and insurance agencies.

## AERONAUTICAL INFORMATION SERVICES – AERONAUTICAL INFORMATION MANAGEMENT

23 – 27 MARCH 2020

This course provides you with the knowledge and skills to manage aeronautical information and data as an AIS Provider (AISP). Building on this foundation, you will also be able to perform an effective transition from AIS to AIM and System Wide Information Management (SWIM) in the context of the ICAO Aviation System Block Upgrades (ASBU). This course is developed in accordance with ICAO Annex 15, Doc 10066 and related provisions.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the responsibilities and functions of an AIS provider
- Recognise the key components in the management of aeronautical information and data
- Understand the role AIM plays within ICAO Global Air Traffic Management (ATM) Operational Concept, ICAO ASBU framework and associated Collaborative Decision Making (CDM) environment
- Learn the role of the regulator for the regulation and safety oversight of AIS
- Comprehend the transition of AIS to AIM as a prerequisite for a SWIM enabled environment

### WHAT IS COVERED

- Introduction to AIS-AIM
  - ICAO Regulatory framework
  - Applicable Annexes (3,4,15)
- Set-up of AIS-AIM in Singapore
  - Relationship between ICAO and States in the provision of AIS
  - State's responsibilities in the provision of AIS
- Safety oversight of AIS
  - State regulations and safety oversight
  - Expectations of the regulator on AIS policies & safety performance

- Transition from AIS to AIM
  - The ICAO roadmap for the transition from AIS to AIM
  - The transition of AIS to AIM as a prerequisite for a SWIM enabled environment
  - The role of AIM in ATM in the context of the ICAO ASBU framework and the Global Air Navigation Plan
  - Evolution of ICAO Annex 15
  - Singapore's experience in AIS-AIM transition implementation
- Management and provision of aeronautical data and information
  - Aeronautical data scope and
  - Aeronautical data management – collection, processing and distribution
  - Quality assurance and control
- Digital products and services
  - Digital exchange of aeronautical information
  - Digital data sets
  - Distribution services
  - Digital NOTAM
- Aeronautical information in a standardised presentation
  - AIS Provider's responsibilities and functions
  - Notice to Airmen (NOTAM)
  - Aeronautical Information Publication (AIP)/eAIP
  - Aeronautical Information Regulation and Control (AIRAC)

### WHO SHOULD ATTEND

This course is beneficial to AIS-AIM personnel from civil aviation administrations, air navigation service providers, airport authorities, regulators, aeronautical data originators and data users.

### DIPLOMA IN CIVIL AVIATION MANAGEMENT

This diploma combines strategic aviation regulatory elements with operational considerations to address common concerns in air transport through the sharing of international best practices and Singapore's experience. It provides you with an in-depth understanding of how the various components of the civil aviation industry function and integrate.

#### WHAT YOU WILL LEARN:

Upon completion of this programme, you will be able to:

- Understand the economic and non-economic drivers for airport regulators, airports and airlines
- Identify the common concerns and key trends in civil aviation development
- Identify the key considerations in policies making for the various civil aviation components
- Plan and execute the key deliverables to meet your national and organisation's needs
- Design policies to manage the industry's challenges

#### PROGRAMME STRUCTURE

This programme comprises both compulsory and elective courses. You may select up to two compulsory courses and any elective course based on your profession or areas of interest. You have the flexibility to attend each chosen course based on your preferred sequence/schedule.

#### Compulsory Courses (Choose One or Both)

<u>Aviation Leaders Programme in Public Policy</u>	2 weeks
<u>Civil Aviation Management Programme</u>	2 weeks

#### Elective Courses ( Choose Any)

##### Aviation Management

<u>Air Transport Economics and Financial Management</u>	3 days
<u>Air Transport Strategies for Success</u>	3 days
<u>The Airline Business</u>	3 days
<u>The Airport Business</u>	3 days
<u>Air Disasters: Crisis Planning and Business Continuity Management</u>	5 days
<u>Airport Commercial Development Programme</u>	5 days
<u>Airport Ramp Management</u>	5 days

<u>Emergency Management Workshop</u>	5 days
<u>International Air Law: Application and Practice</u>	5 days
<b>Aviation Safety</b>	
<u>Aircraft Accident Investigation Techniques</u>	5 days
<u>Aircraft Accident Investigation Management</u>	5 days
<u>Incident Investigation: Effective Safety Risk Management</u>	5 days
<u>Safety Management Systems Implementation</u>	5 days
<u>State Safety Programme Implementation</u>	5 days
<u>Integrated Safety Management Systems</u>	2 weeks
<u>Safety Oversight Managers</u>	2 weeks 4 days
<b>Aviation Security</b>	
<u>Aviation Security Management Programme</u>	4 days
<u>Airport Security Operations Managers</u>	5 days
<u>Aviation Security Auditing Techniques and Developing Security Manuals</u>	5 days
<u>Crisis Management in Aviation Security Workshop</u>	5 days
<b>Air Traffic Services</b>	
<u>Air Traffic Management Safety Investigation and Analysis</u>	5 days
<u>Methodology and Best Practices for Aviation System Block Upgrades (ASBU) Implementation</u>	5 days
<b>Total Duration of Compulsory and Elective Courses must add up to a <u>minimum of 6 weeks.</u></b>	
<b>DURATION</b>	
6 – 8 weeks	



**CERTIFICATION**

A Professional Diploma in Civil Aviation Management will be awarded to those who have successfully completed the compulsory course and chosen electives, as well as passed all examinations for the elective courses within the candidature period. Diploma holders may append the abbreviated form of the qualification "Dip. Civil Aviation Mgt." after their name.

**CANDIDATURE PERIOD**

The programme is to be completed within three years of admission.

**PREREQUISITES**

- Have appropriate training or some knowledge of the aviation industry.
- Be proficient in the English language.

**WHO SHOULD ATTEND**

Senior executives, managers and operational personnel from civil aviation administrations, airport authorities, air navigation service providers, airlines and related industries as well as those who want to understand the challenges facing the industry and have a good grounding in aviation management.



### DIPLOMA IN AVIATION SAFETY MANAGEMENT

This diploma combines aviation regulatory elements with operational considerations to equip you with the knowledge and skills to develop, implement and operate an effective safety oversight and management systems in line with International Civil Aviation Organization's (ICAO) Standards and Recommended Practices (SARPs) and ICAO Asia Pacific Regional Aviation Safety Group Standardized Capacity Building Programme.

#### WHAT YOU WILL LEARN:

Upon completion of this diploma, you will be able to:

- Apply safety management methodologies and ICAO SARPs to improve safety and efficiency in your organisation
- Identify the common concerns and key trends in civil aviation safety development
- Develop and implement safety programmes to address key safety considerations in decision making in civil aviation
- Plan and execute the key deliverables to meet your national and/or organisation's safety obligations and needs
- Develop competencies as safety managers and safety oversight inspectors

#### PROGRAMME STRUCTURE

This programme comprises both compulsory and elective courses. You may select two compulsory courses and your preferred electives based on your profession or areas of interest. You have the flexibility to attend each chosen course based on your preferred sequence/schedule.

##### Compulsory Courses (Choose two of the three)

<u>State Safety Programme Implementation</u>	5 days
<u>Safety Management Systems Implementation</u>	5 days
<u>Integrated Safety Management Systems</u>	2 weeks

##### Elective Courses ( Choose Any)

###### Risk Management

Aviation Weather Risk Management 5 days

ICAO Standardized Training Package: Operational Hazard Identification and Risk Mitigation 4 days

Safety Case Development and Review 5 days

###### Aerodrome Safety

Airport Ramp Safety 5 days

ICAO Annex 14 Requirements and 4 days

#### Application

##### Accident & Incident Investigation

Aircraft Accident Investigation Techniques 5 days

Incident Investigation: Effective Safety Risk Management 5 days

Air Traffic Management Safety Investigation and Analysis 5 days

##### Auditing & Compliance

Safety Audits of Air Traffic Services 5 days

Resolution of Safety Issues 5 days

##### Safety Oversight

Safety Oversight Inspectors (Air Navigation Services) 5 days

Safety Oversight Inspectors (Airworthiness) 2 weeks

Safety Oversight Inspectors (Flight Operations) 2 weeks

Safety Oversight of Aviation Meteorological Services 4 days

##### Human Factors

Human Factors in Aviation Workshop 5 days

Human Factors in Air Traffic Services Workshop 5 days

**Total Duration of Compulsory and Elective Courses must add up to a minimum of 6 weeks.**

#### DURATION

6 – 8 weeks

#### CERTIFICATION

A Diploma in Aviation Safety Management will be awarded to those who have successfully completed the compulsory courses and chosen electives, as well as passed all assessments (if applicable) for the courses within the candidature period. Diploma holders may append the abbreviated form of the qualification "Dip. Aviation Safety Mgt." after their name.

**CANDIDATURE PERIOD**

The programme is to be completed within three years of admission. The total duration of compulsory and elective courses must add up to a minimum of six weeks.

**PREREQUISITES**

- Have appropriate training or some knowledge of the aviation industry.
- Be proficient in the English language.

**WHO SHOULD ATTEND**

Managers and operational personnel from civil aviation administrations, airports, air navigation service providers, airlines and related industries, as well as those who want to pursue a safety profession in aviation.

— END —

## Singapore – ICAO Programme for Young Aviation Professionals 2019

To mark the 60<sup>th</sup> Anniversary of the Singapore Aviation Academy (SAA) and Singapore's 15<sup>th</sup> year as an International Civil Aviation Organization (ICAO) Council Member in 2018, Singapore and ICAO jointly launched a new Singapore – ICAO Programme for Young Aviation Professionals (PYAP), providing 600 Fellowships and 40 Scholarships over five years for specialised training programmes conducted by SAA. This programme is sponsored by the Singapore Government and administered by the ICAO Technical Cooperation Bureau (TCB). A total of 120 Fellowships and 15 Scholarships will be available in 2019 and we welcome applications from government officials (aged 35 and below) of developing ICAO Member States.

## Fellowships

Training Programmes	Dates	Closing Dates for Application
<u>Civil Aviation Management Programme</u>	22 April – 3 May 2019	24 March 2019
<u>ICAO Standardized Training Package: Operational Hazard Identification and Risk Mitigation</u>	13 – 16 May 2019	24 March 2019
<u>Future Airports: Technology and Digital Agility for Airport Operators and Regulators</u>	10 – 14 June 2019	21 April 2019
<u>Safety Oversight Managers</u>	1 – 18 July 2019	12 May 2019
<u>Aviation Security Management Programme</u>	15 – 18 July 2019	26 May 2019
<u>Aviation Weather Risk Management</u>	22 – 26 July 2019	2 June 2019
<u>Future Airports: Transforming Mindsets of Airport Operators and Regulators for Tomorrow</u>	19 – 23 August 2019	30 June 2019
<u>Emergency Management Workshop</u>	2 – 6 September 2019	14 July 2019
<u>Future Airports: Building Smart Airport Capabilities through Data: Analytics, Artificial Intelligence, and Automation</u>	14 – 18 October 2019	25 August 2019
<u>Air Traffic Management Safety Investigation and Analysis</u>	4 – 8 November 2019	15 September 2019
<u>Future Airports: Disruptions, Innovations and Opportunities</u>	11 – 15 November 2019	22 September 2019
<u>Airport Emergency Service Command Leadership Workshop</u>	2 – 6 December 2019	13 October 2019

*Note: Course dates and details are subject to change. For the latest course dates and details, please visit SAA's website at <https://saa.caas.gov.sg>.*

## Terms of Fellowships and Application Procedures

The Government of Singapore will bear the training fees, daily allowance of sixty Singapore Dollars (S\$60) and hotel accommodation for participants accepted for the programmes. Complimentary breakfast will be provided at the hotel and lunch at SAA during training days. Travel arrangements are to be made and costs borne by the nominating Governments.

Hotel accommodation will be provided for the training duration, i.e. one day before course commencement (after 2 pm) and one day after the course (till 12 noon). Daily allowance will be limited to the training duration, i.e. from the start of the course up to the last day of the course. Expenses to be incurred for stay beyond this duration will not be covered. Participants are advised to secure their own overseas travel insurance to cover themselves for the period of the training in Singapore.

Nominating Governments should preferably nominate not more than two candidates for each course and indicate which candidate should take priority if more than one candidate is nominated.

Fellowship applications should be submitted online at <https://saa.caas.gov.sg/fellowships> by the stated closing dates. Nomination Forms, signed and endorsed by the Director-General of Civil Aviation or equivalent, must be completed and submitted as part of the online application.

### Scholarships

Scholarships are offered for SAA's Diploma in Civil Aviation Management or Diploma in Aviation Safety Management. The Diplomas comprise compulsory and elective courses which must add up to six weeks, to be completed within three years.

### Terms of Scholarships and Application Procedures

The Government of Singapore will bear the training fees, daily allowance of Sixty Singapore Dollars (S\$60), hotel accommodation and up to three economy return airfares for successful applicants. Complimentary breakfast will be provided at the hotel and lunch at SAA during training days.

SAA will purchase the air tickets for the accepted participant in Singapore. Arrangements will be made for the participant to arrive in Singapore one day before the course commences and depart Singapore one day after the course ends.

Hotel accommodation will be provided for the training duration, i.e. one day before course commencement (after 2 pm) and one day after the course (till 12 noon). Daily allowance will be limited to the training duration, i.e. from the start of the course up to the last day of the course. Expenses to be incurred for stay beyond this duration will not be covered. Participants are advised to secure their own overseas travel insurance to cover themselves for the period of the training in Singapore.

Nominating Governments should nominate not more than one candidate for the Scholarship.

Scholarship applications should be submitted online at <https://tinyurl.com/pvao-scholarship>. Nomination Forms, signed and endorsed by the Director-General of Civil Aviation or equivalent, must be completed and submitted as part of the online application.

For enquiries, please contact:

Fellowships Management  
Singapore Aviation Academy  
Tel: (65) 6540 6232 / 6540 0433  
Fax: (65) 6542 9890 / 6543 2778  
Email: [saa\\_fellowships@caas.gov.sg](mailto:saa_fellowships@caas.gov.sg)

### ICAO Fellowship Programme

ICAO firmly believes that the safe and efficient operation of air transport systems is totally dependent on the skills and knowledge of the national personnel who operate and maintain these systems. ICAO, with UNDP support, has assisted over 50 developing States in establishing national civil aviation training centres. Through its Technical Cooperation Programme, ICAO has been active in awarding fellowship training in the various fields of civil aviation. In the past 15 years, around 15,000 fellowships were awarded to almost every developing State.

### Singapore Aviation Academy (SAA)

SAA is the internationally-recognised training arm of the Civil Aviation Authority of Singapore. Made up of four specialised schools – the School of Aviation Management, the School of Aviation Safety and Security, the School of Air Traffic Services and the School of Airport Emergency Services – SAA has trained over 129,000 participants from 200 countries and territories. SAA was conferred the prestigious 34<sup>th</sup> Edward Warner Award by the ICAO Council on behalf of its then 185 Member States in 2000 "in recognition of its eminent contribution as a centre of excellence in international civil aviation training". In 2012, SAA was certified as an ICAO TRAINAIR PLUS Full Member. As a member, SAA aims to contribute towards the common goal of elevating global aviation training standards by developing educational resources and sharing valuable knowledge with the aviation community. SAA is also endorsed as an ICAO Government Safety Inspector Training Centre and ICAO Aviation Security Training Centre. In 2014, SAA was designated an ICAO Regional Training Centre of Excellence and re-designated in 2017 for another three years.



## CIVIL AVIATION MANAGEMENT PROGRAMME

22 APRIL – 3 MAY 2019

This programme will provide you with a broad overview and perspective of the civil aviation sector, its major elements and their interfaces in an integral eco-system. It will also provide you with a focused examination of each element, their key requisites and the regulatory and operational best practices to meet these requirements and address prevailing and future challenges.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the fundamental principles, and main aspects and factors of civil aviation
- Comprehend each of the major civil aviation elements, their inter- and external linkages, and their essentials
- Glean policies, strategies and methods in meeting the key requirements and dealing with issues

### WHAT IS COVERED

- Air Transport/Aviation and Economic Development
  - Economic Development and the Aviation Sector
  - Air Transport Development - Singapore's Experience
  - Air Transport Law and Regulations
  - Airline Strategies
  - Aviation and Human Resource Development
  - International Aviation and Climate Change
  - Public Governance and Policies
- Airport Planning and Management
  - Fundamentals of Airport Planning and Design
  - Airport Management
  - Airport-Airlines Collaboration in Hub Airport
  - Airport-Airlines Partnership – CAG's Experience
  - Airport Commercial Management – CAG's Experience
  - Service Quality Management

- Aviation Safety and Security
  - Safety Oversight and State Safety Programme
  - Safety Oversight of Air Operators and Approved Organisations
  - Safety Oversight of Aerodromes and Air Navigation Services
  - Safety Management Systems
  - Aviation Security
  - Safety and Security Aspects in Handling Dangerous Goods
  - Human Factors in Aviation
- Air Traffic Management
  - Air Traffic Management
  - Global Air Navigation Plan and Aviation System Block Upgrades
  - ATM Initiatives – CAAS' Experiences
- Crisis Management and Emergency/Business Continuity Planning
  - Crisis Management in Aviation
  - Emergency Response to Aircraft Accidents
  - Aircraft Accident Investigation and Management
  - Public Health Management and Aviation
  - Crisis Communications
  - Business Continuity Planning

### LEARNING ACTIVITIES

- Visits to Changi Airport, Singapore Air Traffic Control Centre and MITRE Asia Pacific (Singapore)
- Case Studies
- Group Exercise

### WHO SHOULD ATTEND

This course will be beneficial to middle management personnel from civil aviation administrations, airport authorities, air navigation service providers, airlines, and aviation-related government and private organisations.

## ICAO STANDARDIZED TRAINING PACKAGE: OPERATIONAL HAZARD IDENTIFICATION AND RISK MITIGATION

13 – 16 MAY 2019

This advanced Safety Management System (SMS) course will provide you with the knowledge and skills to develop and apply hazard identification and safety risk mitigation (HIRM) tools in the context of a SMS and State Safety Programme (SSP). The fundamental HIRM processes in this course is based on guidance materials in ICAO Safety Management Manual (Doc 9859, 3rd Ed) with various enhancements as appropriate. This competency-based training has been developed in accordance with ICAO TRAINAIR PLUS methodology (Doc 9941).

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Develop proactive, reactive and predictive methodologies for hazard identification
  - Establish Hazards and Risk Management database
  - Validate hazard information and activate Safety Risk Management (SRM) projects for specific hazards
  - Utilise a SRM Tool to perform and document a SRM Task
- Activate SRM for specific hazard
  - Hazard, unsafe event, consequence threads
  - Completing the SRM project report
  - SRM tools
    - Consolidated Barrier Strength Value (CBSV) methodology to derive Risk Index value
    - Awareness of Bow Tie XP (BTXP) safety risk mitigation tool

### WHAT IS COVERED

- Operational context of SRM
- Various approaches for hazard identification
  - Voluntary safety reporting forms
  - Occurrence notification reports
  - Operational data monitoring review reports
- Processing of hazard information
  - Hazard and risk management database
  - Validation of hazard information
- Management of SRM process

### LEARNING ACTIVITIES

- Quizzes
- Group exercises
- Progress and mastery tests

### PREREQUISITES

- Attended SMS/SSP or equivalent courses
- Have relevant aviation professional/operational background

### WHO SHOULD ATTEND

This course is beneficial to operational personnel and regulatory inspectors involved in the performance or oversight of HIRM processes, personnel from civil aviation authorities, air navigation service providers, airport authorities, airlines and maintenance organisations.



## **FUTURE AIRPORTS: TECHNOLOGY AND DIGITAL AGILITY FOR AIRPORT OPERATORS AND REGULATORS**

**10 – 14 JUNE 2019**

This course will provide you with the concept and application of a transformative mindset shift and the ability to lead and rally your organisation to become more digital and agile to the needs of your stakeholders. Disruptive technologies and their potential impact in the digitalisation in the aviation industry will also be discussed.

### **WHAT YOU WILL LEARN**

Upon completion of this workshop, you will be able to:

- Achieve enterprise digital agility
- Set up a digital capability within your organisation
- Strategise and lead digitalisation initiatives
- Set up measures to drive digital success
- Plan development infrastructure to support agile development
- Appreciate a greater understanding of major disruptive technologies and digital trends
- Generating growth through data and analytics
- Bridging the gap between business and Information Technology
- Automating the product/application delivery
- Transforming the digital development and business processes
- Sharing by airport operators and regulators on the need to stay agile and adapt to disruptions in technology
- Building up the digital capabilities specific for the aviation sector

### **WHAT IS COVERED**

- Digital trends and challenges; New business models
- Identifying digitisation opportunities; charting the digital roadmap

### **LEARNING ACTIVITIES**

- Case studies
- Discussions and exercises
- Learning journeys to Changi Airport

### **WHO SHOULD ATTEND**

This course is designed for middle management personnel of civil aviation administrations, airports, and relevant government agencies who are responsible to lead and rally their organisations in through changes brought by disruptive technologies

## SAFETY OVERSIGHT MANAGERS

1 – 18 JULY 2019

This course provides you 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.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the role and responsibilities of a safety oversight manager
- Understand the ICAO Standards and Recommended Practices (SARPs) and other national civil aviation regulations relating to safety oversight
- Update your organisation's safety oversight system

### WHAT IS COVERED

- 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
- Civil Aviation Authority of Singapore's 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

### LEARNING ACTIVITIES

- Exercises
- Panel Discussions

### WHO SHOULD ATTEND

This course is beneficial to personnel responsible for the safety oversight of aircraft operations and maintenance such as managers and inspectors from civil aviation administrations.

## AVIATION SECURITY MANAGEMENT PROGRAMME

15 – 18 JULY 2019

This programme provides you with an understanding of the requirements, principles and practices to effectively implement aviation security (AVSEC) management.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand AVSEC management concepts
- Apply best practices for planning and managing AVSEC
- Develop an AVSEC framework in line with ICAO requirements

### WHAT IS COVERED

- Understanding AVSEC
  - AVSEC: The big picture
  - ICAO's role and approach to aviation security
  - The State's security oversight obligations
  - Aircraft security
  - Cargo and mail security
  - Threats to critical aviation information and communication technology systems
- Enhancing the Security Manager's Toolkit
  - Training effectiveness
  - Human factors in AVSEC operations
  - Harnessing new technologies, research and development
- Building a Robust AVSEC Framework
  - Regulatory oversight
  - Crisis management and response to acts of unlawful interference
  - Quality control
  - Security management system
- Fostering Effective Partnerships in AVSEC
  - Airport security

### WHO SHOULD ATTEND

This programme is beneficial to AVSEC managers and supervisors from civil aviation administrations, airport authorities, air navigation service providers, airlines and AVSEC related agencies.

## AVIATION WEATHER RISK MANAGEMENT

22 – 26 JULY 2019

This course is designed to equip you with knowledge and skills to determine how hazards and risks from adverse weather conditions impact flight operations, and ways to manage these risks.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Identify and use various weather and climate products and services to facilitate operational decision-making, flight planning, operational control and air traffic services.
- Put in place practices, processes and procedures to effectively and proactively manage weather-related risks, enhancing operational effectiveness and efficiencies.
- Identify ways to enhance safety and performance, resulting in the reduction of passenger and crew injuries, diversions and aircraft damages due to adverse weather.

### WHAT IS COVERED

- Impact of Weather on Aviation Operations
  - Effects and cost of weather to aviation
  - New trends in occurrence causation
  - Weather-related mishaps (e.g. runway excursions, loss of control, turbulence, high-altitude ice-crystal icing)
- Current Weather Safety Nets
  - Weather information status
  - Aviation weather system
  - ICAO Annex 3 (Meteorological Services for International Air Navigation)
  - World area forecast system
  - Tropical cyclone warning centres
  - Volcanic ash advisory centres
  - Safety and quality initiatives
- Weather Decision-making
  - Naturalistic decision-making
  - Plan continuation error
  - Threat and error management
  - Situational awareness
  - Facilitating and improving decisions
- Weather Risk Management Systems
  - Aviation weather hazards and risks

- Building a weather risk profile for your operation
- Weather risk management process
- Weather monitoring and review
- Weather risk control system
- Improving procedures for dispatching aircraft and coping with weather
- Importance of training (weather in the aircraft simulator and applied weather training)
- Integration with quality and safety management systems
- Climatology and Weather Patterns
  - Weather-related risks
  - Global climatology and weather patterns
  - Identifying regional weather risks
  - Identifying weather risks with station climatology
  - Improving meteorology in route manuals
- Investigation of Weather Occurrences
  - Weather investigations to support safety management systems (SMS) and safety performance
  - Event assessment process
  - “Weather Package” in data collection
  - Collection of human factors data
  - Analysis of meteorological data
  - ICAO Doc 9756 Part III (Manual of Aircraft Accident & Incident Investigation)
- Proactive Forecasting Systems for Supporting Decision Making
  - Effect of weather forecasting on commercial aviation
  - Supporting decision making in the cockpit, dispatch, tower, etc.
  - Tactical weather decision aids
  - Code grey forecasting system
  - Storm readiness programmes (e.g. typhoons, snow storms)

### WHO SHOULD ATTEND

This course is beneficial to aviation personnel from civil aviation administrations, airlines, air navigation service providers, airport authorities, investigation agencies, and meteorology agencies who use weather information for operational, investigation and safety purposes.

## FUTURE AIRPORTS: TRANSFORMING MINDSETS OF AIRPORT OPERATORS AND REGULATORS FOR TOMORROW

19 – 23 AUGUST 2019

In increasingly volatile and dynamic operating environments, leaders have to be agile and proactive in anticipating problems and igniting changes. Leaders often have to synergise limited resources and lead their organisations to transform so as to stay ahead of the competition.

### WHAT YOU WILL LEARN

Upon completion of this programme, you will be able to:

- Gain the big picture of the aviation landscape and the purpose of transformation
- Identify possible gaps in your organisation and industry
- Develop competencies to address difficult issues with creativity and critical thinking
- Apply Story, Purpose, Environment, Capabilities, Leadership (SPEC'L) framework, to assess the state of transformation in your organisation
- Design interventions around the SPEC'L framework to help your organisation transform systemically, in a structured way

- Overcoming challenges specific to your organisation
- Transforming the development and business process
- Getting started in your organisations
- Understand 'Purpose' of transformation and how to get there via effective strategy design
- Discover the unique challenges of your organisation and industry and applying creative problem-solving techniques for 'Environment', 'Capabilities', 'Leadership' and 'Story'
- Sharing by airport operators and regulators on bringing one's airport through a transformation journey

### WHAT IS COVERED

- Transforming the enterprise
- Strategising and leading transformation efforts

### LEARNING ACTIVITIES

- Case studies
- Discussions and exercises
- Experiential learning activities (including Gnowbe apps)
- Learning journey to Changi Airport

### WHO SHOULD ATTEND

This course is designed for director-level and senior management personnel of civil aviation administrations, airports, and organisations in the aviation industry.



## EMERGENCY MANAGEMENT WORKSHOP

2 – 6 SEPTEMBER 2019

This strategic workshop provides you with updates on the latest developments in emergency planning and aircraft incident management.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand and implement ICAO Standards and Recommended Practices (SARPs) relating to emergency preparedness
- Identify risks at airports and recommend appropriate actions to counter and manage such risks
- Develop an incident and emergency management system for your organisation

### WHAT IS COVERED

- Emergency Preparedness for Airport Emergency Services (AES)
- Legal Aspects of Disaster and Emergency Management
- Crisis Management at Changi Airport
- ICAO's Requirements for Very Large Capacity Aircraft (VLCA) and its Emergency Management

- Medical Response to Major Incidents at Airports
- Managing Maritime Disaster
- Aircraft Rescue Fire-fighting Management
- Airport Emergency Planning
- Incident and Emergency Management System
- Fire-fighting and Rescue Disaster Handling Experience
- Visit to Changi Airport Fire Station
- Psychological Impact
- Bulk Fuel Fire Management
- Airport Exercise Planning
- Aircraft Accident Investigation

### LEARNING ACTIVITIES

- Case Studies
- Learning journey

### WHO SHOULD ATTEND

This workshop is beneficial to fire officers, emergency service commanders, airport executives and operational supervisors from civil aviation administrations, airport authorities, emergency service providers and airlines.

**FUTURE AIRPORTS: BUILDING SMART AIRPORT CAPABILITIES THROUGH DATA:  
ANALYTICS, ARTIFICIAL INTELLIGENCE, AND AUTOMATION**

**14 – 18 OCTOBER 2019**

This course provides you with the competencies to analyse your organisation's data efficiently, harness the power of data sharing, and draw useful insights through data analytics to transform passenger experience and build smart airport capabilities in the aviation industry. Through the course, you will also gain knowledge on data intelligence and analytics, and how they can help to streamline business processes, such as decision-making, cost-cutting, automation, and identification of new business opportunities. This course is one of the few globally available, and is led by a team of experienced professionals from the National University of Singapore (NUS).

**WHAT YOU WILL LEARN**

Upon completion of this course, you will be able to:

- Present data intelligence for reporting
- Make real-time or near real-time decisions to mitigate business risks and ensure business continuity
- Make quick assessment of organisations' maturity/ readiness for data driven decision making
- Manage quality and reliability of analytics projects, and measure the ROI of analytics
- Create practical steps to build smart airport capabilities and how they can be applied across the aviation industry
- Understand what business analytics are and their practical application, e.g. smart airport, automation and seamless passenger experience

- Generating growth through data and analytics
- Use of data analytics in airport infrastructure planning and transformation of aviation processes
- Regulators', airlines' and airport operators' perspective in building smart airport capabilities, and how they can be achieved effectively
- Case studies of business analytics being successfully applied in organisations to improve operations, management, increase revenue, business recovery, and transform passenger experience

**LEARNING ACTIVITIES**

- Case studies
- Group discussions and exercises
- Learning journey to Changi Airport Terminal 4

**WHAT IS COVERED**

- Understanding and interpreting data
- Analytical models

**WHO SHOULD ATTEND**

This course is designed for middle management personnel from civil aviation administrations, airports, airlines, and relevant government agencies who are responsible for business initiatives, regulatory oversight, operations and management reporting.

The course is also beneficial to aviation professionals who are keen to understand and learn how data analytics and intelligence can empower business/airport processes and transform passenger experience.

## AIR TRAFFIC MANAGEMENT SAFETY INVESTIGATION AND ANALYSIS

4 – 8 NOVEMBER 2019

This course provides you with guidance on best practices in systemic safety investigation and analysis techniques as applied to air traffic management (ATM). It covers both relevant human factors theories and practices as well as examines key issues relating to safety investigation and analysis in the ATM environment.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand best practices in systemic safety investigation and analysis techniques in ATM
- Identify key issues in safety investigation and analysis in an ATM environment
- Apply witness interviewing skills and techniques

### WHAT IS COVERED

- Introduction to ATM Safety Investigation and Analysis
  - Overview
  - ICAO Annex 13 (Aircraft Accident and Incident Investigation)
  - Purpose and objectives
  - Analysis techniques
- Managing Human Error and Just Culture
  - Principles of human error
  - Just Culture
- Organisational Accidents
  - Overview
  - The SHEL Model (Software, Hardware, Environment, Liveware)
  - The Reason Model and Systemic Occurrence Analysis Methods (SOAM)
- Human Performance Limitations
  - Stress and fatigue
  - Threat and error management

- Information processing
- Situational awareness
- Decision-making

- Witness Interviewing Techniques
  - Theory and practice
- SOAM
  - Human involvement
  - Contextual conditions
  - Organisational and system factors
  - Barriers in accident prevention
- Investigative Issues and Reporting Requirements
  - Investigator qualities
  - Human bias
  - Data organization tools
  - Traps and tips for investigators
- Effective Findings and Recommendations
  - Developing effective findings and recommendations

### LEARNING ACTIVITIES

- Interviewing Skills
- Application of SOAM
- Case Studies
  - Practice and consolidation of safety investigation and analysis techniques
  - Syndicate work to further refine safety investigation and analysis techniques

### WHO SHOULD ATTEND

This course is beneficial to ATM managers, supervisors, safety managers, investigators, trainers and inspectors from civil aviation administrations, air navigation service providers and military air traffic service providers who are or will be involved in ATM safety management and investigation.

## FUTURE AIRPORTS: DISRUPTIONS, INNOVATIONS AND OPPORTUNITIES

11 – 15 NOVEMBER 2019

This course provides you with a comprehensive understanding of the disruptions to the aviation business and study on how corporate organisations, including the aviation industry can leverage on growth opportunities to lead and foster innovation to stay ahead of the competition. You will study the impact of Industry 4.0 and acquire knowledge and strategies to change the way you operate to be future-ready. This course is one of the few globally available, and is led by a team of experienced professionals from the National University of Singapore (NUS) and aviation industry practitioners.

### WHAT YOU WILL LEARN

Upon completion of this course, you will be able to:

- Understand the history and evolution of Industry 4.0
- Analyse disruptive business models and its impact to business operation, including aviation
- Formulate new business models, innovative concepts and apply these principles to business operations and processes
- Gain strategic tools to transform digital disruption to opportunities
- Business solutions: how to formulate a successful innovation strategy for your organisation
- Measures to optimise growth opportunities through digital and non-digital innovations

### LEARNING ACTIVITIES

- Case studies
- Discussions and exercises
- Learning journey to Jewel Changi Airport

### WHAT IS COVERED

- Overview of Industry 4.0 and its impact on businesses and aviation
- Case sharing: concepts for new business models, including the aviation industry

### WHO SHOULD ATTEND

This course is designed for middle management personnel from civil aviation administrations, airports, airlines and relevant government agencies, who are responsible for harnessing disruptive innovations and technology to counter the potential negative externalities.

It is also beneficial to aviation professionals who are keen to understand the impact of disruptive business models and technology, and new business solutions to enhance airport operations.

**AIRPORT EMERGENCY SERVICE COMMAND LEADERSHIP WORKSHOP****2 – 6 DECEMBER 2019**

This course provides you with the knowledge and understanding of the roles and responsibilities of an Executive Fire Officer and is Module 4 of the Senior Airport Fire Officers Course.

**WHAT YOU WILL LEARN**

Upon completion of this course, you will be able to:

- Understand the roles and responsibilities of an Executive Fire Officer

**WHAT IS COVERED**

- Executive Leadership – Managing Multiple Roles
- Building Your Business Case
- Public Safety Administration – Planning for Growth

- Assessing Community Risk and Capabilities
- Understanding Airport Emergency Management
- Airport Emergency Planning – Mass Casualties Preparation
- Development of Emergency Planning Exercises

**LEARNING ACTIVITIES**

- Practical Exercises
- Case Studies

**PREREQUISITES**

- Have completed airport fire officer training or equivalent
- Be in a supervisory position as Duty Officer/Officer In-charge for at least two years

**WHO SHOULD ATTEND**

This course is beneficial to senior aircraft rescue and fire-fighting personnel from civil aviation administrations, military airports and airport authorities.



## DIPLOMA IN CIVIL AVIATION MANAGEMENT

This diploma combines strategic aviation regulatory elements with operational considerations to address common concerns in air transport through the sharing of international best practices and Singapore's experience. It provides you with an in-depth understanding of how the various components of the civil aviation industry function and integrate.

### WHAT YOU WILL LEARN:

Upon completion of this programme, you will be able to:

- Understand the economic and non-economic drivers for airport regulators, airports and airlines
- Identify the common concerns and key trends in civil aviation development
- Identify the key considerations in policies making for the various civil aviation components
- Plan and execute the key deliverables to meet your national and organisation's needs
- Design policies to manage the industry's challenges

### PROGRAMME STRUCTURE

This programme comprises both compulsory and elective courses. You may select up to two compulsory courses and any elective course based on your profession or areas of interest. You have the flexibility to attend each chosen course based on your preferred sequence/schedule.

#### Compulsory Courses (Choose One or Both)

Aviation Leaders Programme in Public Policy 2 weeks

Civil Aviation Management Programme 2 weeks

#### Elective Courses ( Choose Any)

##### Aviation Management

Air Transport Economics and Financial Management 3 days

Air Transport Strategies for Success 3 days

The Airline Business 3 days

The Airport Business 3 days

Air Disasters: Crisis Planning and Business Continuity Management 5 days

Airport Commercial Development 5 days

### DURATION

6 – 8 weeks

### CERTIFICATION

A Professional Diploma in Civil Aviation Management will be awarded to those who have

### Programme

Airport Ramp Management 5 days

Emergency Management Workshop 5 days

International Air Law: Application and Practice 5 days

#### Aviation Safety

Aircraft Accident Investigation Techniques 5 days

Aircraft Accident Investigation Management 5 days

Incident Investigation: Effective Safety Risk Management 5 days

Safety Management Systems Implementation 5 days

State Safety Programme Implementation 5 days

Integrated Safety Management Systems 2 weeks

Safety Oversight Managers 2 weeks  
4 days

#### Aviation Security

Aviation Security Management Programme 4 days

Airport Security Operations Managers 5 days

Aviation Security Auditing Techniques and Developing Security Manuals 5 days

Crisis Management in Aviation Security Workshop 5 days

#### Air Traffic Services

Air Traffic Management Safety Investigation and Analysis 5 days

Methodology and Best Practices for Aviation System Block Upgrades (ASBU) Implementation 5 days

**Total Duration** of Compulsory and Elective Courses must add up to a **minimum of six weeks**.

successfully completed the compulsory course and chosen electives, as well as passed all examinations for the elective courses within the candidature period. Diploma holders may append the abbreviated form of the qualification "Dip. Civil Aviation Mgt." after their name.

**CANDIDATURE PERIOD**

The programme is to be completed within three years of admission.

**PREREQUISITES**

- Have appropriate training or some knowledge of the aviation industry.
- Be proficient in the English language.

**WHO SHOULD ATTEND**

Senior executives, managers and operational personnel from civil aviation administrations, airport authorities, air navigation service providers, airlines and related industries as well as those who want to understand the challenges facing the industry and have a good grounding in aviation management.

## DIPLOMA IN AVIATION SAFETY MANAGEMENT

This diploma combines aviation regulatory elements with operational considerations to equip you with the knowledge and skills to develop, implement and operate an effective safety oversight and management systems in line with International Civil Aviation Organization's (ICAO) Standards and Recommended Practices (SARPs) and ICAO Asia Pacific Regional Aviation Safety Group Standardised Capacity Building Programme.

### WHAT YOU WILL LEARN:

Upon completion of this diploma, you will be able to:

- Apply safety management methodologies and ICAO SARPs to improve safety and efficiency in your organisation
- Identify the common concerns and key trends in civil aviation safety development
- Develop and implement safety programmes to address key safety considerations in decision making in civil aviation
- Plan and execute the key deliverables to meet your national and/or organisation's safety obligations and needs
- Develop competencies as safety managers and safety oversight inspectors

### PROGRAMME STRUCTURE

This programme comprises both compulsory and elective courses. You may select two compulsory courses and your preferred electives based on your profession or areas of interest. You have the flexibility to attend each chosen course based on your preferred sequence/schedule.

#### Compulsory Courses (Choose two of the three)

<u>State Safety Programme Implementation</u>	5 days
<u>Safety Management Systems Implementation</u>	5 days
<u>Integrated Safety Management Systems</u>	2 weeks

#### Elective Courses ( Choose Any)

##### Risk Management

<u>Aviation Weather Risk Management</u>	5 days
<u>ICAO Standardized Training Package: Operational Hazard Identification and Risk Mitigation</u>	4 days
<u>Safety Case Development and Review</u>	5 days

##### Aerodrome Safety

<u>Airport Ramp Safety</u>	5 days
<u>ICAO Annex 14 Requirements and Application</u>	4 days

##### Accident & Incident Investigation

<u>Aircraft Accident Investigation</u>	5 days
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### Techniques

<u>Incident Investigation: Effective Safety Risk Management</u>	5 days
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<u>Air Traffic Management Safety Investigation and Analysis</u>	5 days
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### Auditing & Compliance

<u>Safety Audits of Air Traffic Services</u>	5 days
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<u>Resolution of Safety Issues</u>	5 days
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### Safety Oversight

<u>Safety Oversight Inspectors (Air Navigation Services)</u>	5 days
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<u>Safety Oversight Inspectors (Airworthiness)</u>	2 weeks
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<u>Safety Oversight Inspectors (Flight Operations)</u>	2 weeks
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<u>Safety Oversight of Aviation Meteorological Services</u>	4 days
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### Human Factors

<u>Human Factors in Aviation Workshop</u>	5 days
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<u>Human Factors in Air Traffic Services Workshop</u>	5 days
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**Total Duration** of Compulsory and Elective Courses must add up to a **minimum of six weeks**.

### DURATION

6 – 8 weeks

### CERTIFICATION

A Diploma in Aviation Safety Management will be awarded to those who have successfully completed the compulsory courses and chosen electives, as well as passed all assessments (if applicable) for the courses within the candidature period. Diploma holders may append the abbreviated form of the qualification "Dip. Aviation Safety Mgt." after their name.

### CANDIDATURE PERIOD

The programme is to be completed within three years of admission. The total duration of compulsory and elective courses must add up to a **minimum** of six weeks.

### PREREQUISITES

- Have appropriate training or some knowledge of the aviation industry.
- Be proficient in the English language.

**WHO SHOULD ATTEND**

Managers and operational personnel from civil aviation administrations, airports, air navigation service providers, airlines and related industries, as well as those who want to pursue a safety profession in aviation.

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