



Overview of CAAS Regulation & Part 21 Certification Activities

Agenda

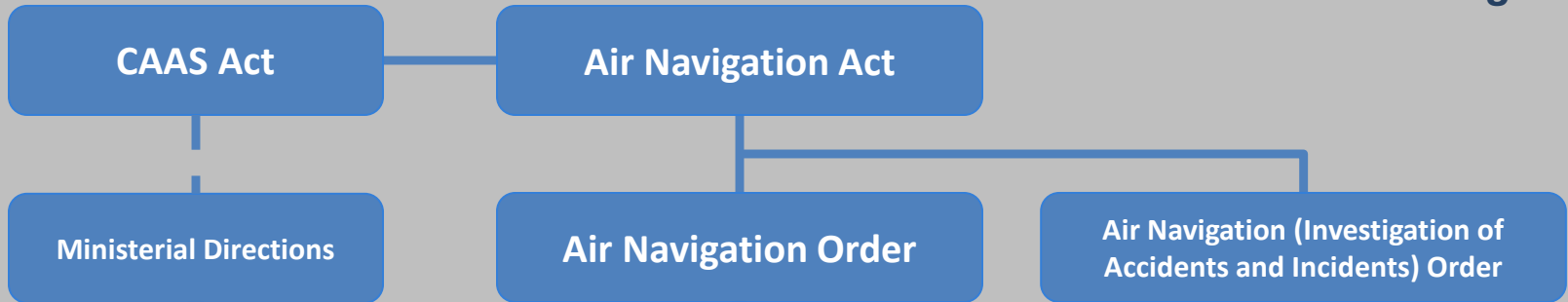
- 1) Singapore Aviation Landscape
- 2) Overview of CAAS Regulations
- 3) CAAS/ AFO organisation structure
- 4) SAR Part 21 certification activities

Singapore Aviation Landscape



Overview of Legislation & Regulations

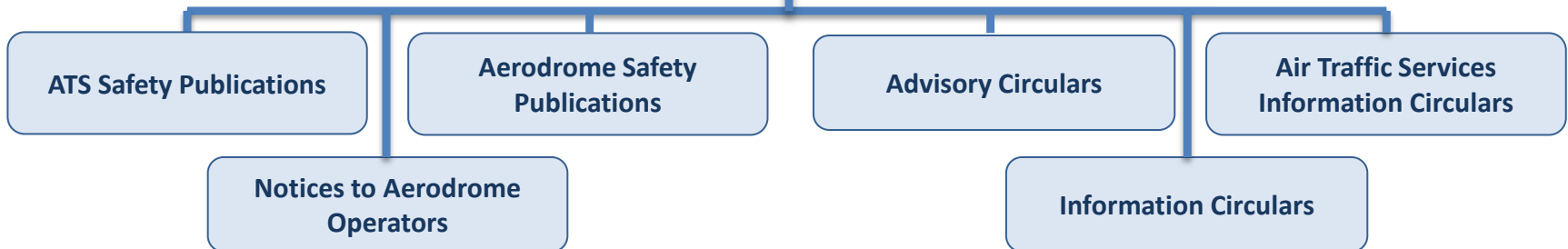
Legislation



Technical Requirements



Guidance Material



Singapore Airworthiness Requirements

Basic Singapore
Airworthiness
Requirements (SAR)

SAR Part 21 – Certification
of Products and Articles
and of Design and
Production Organisations

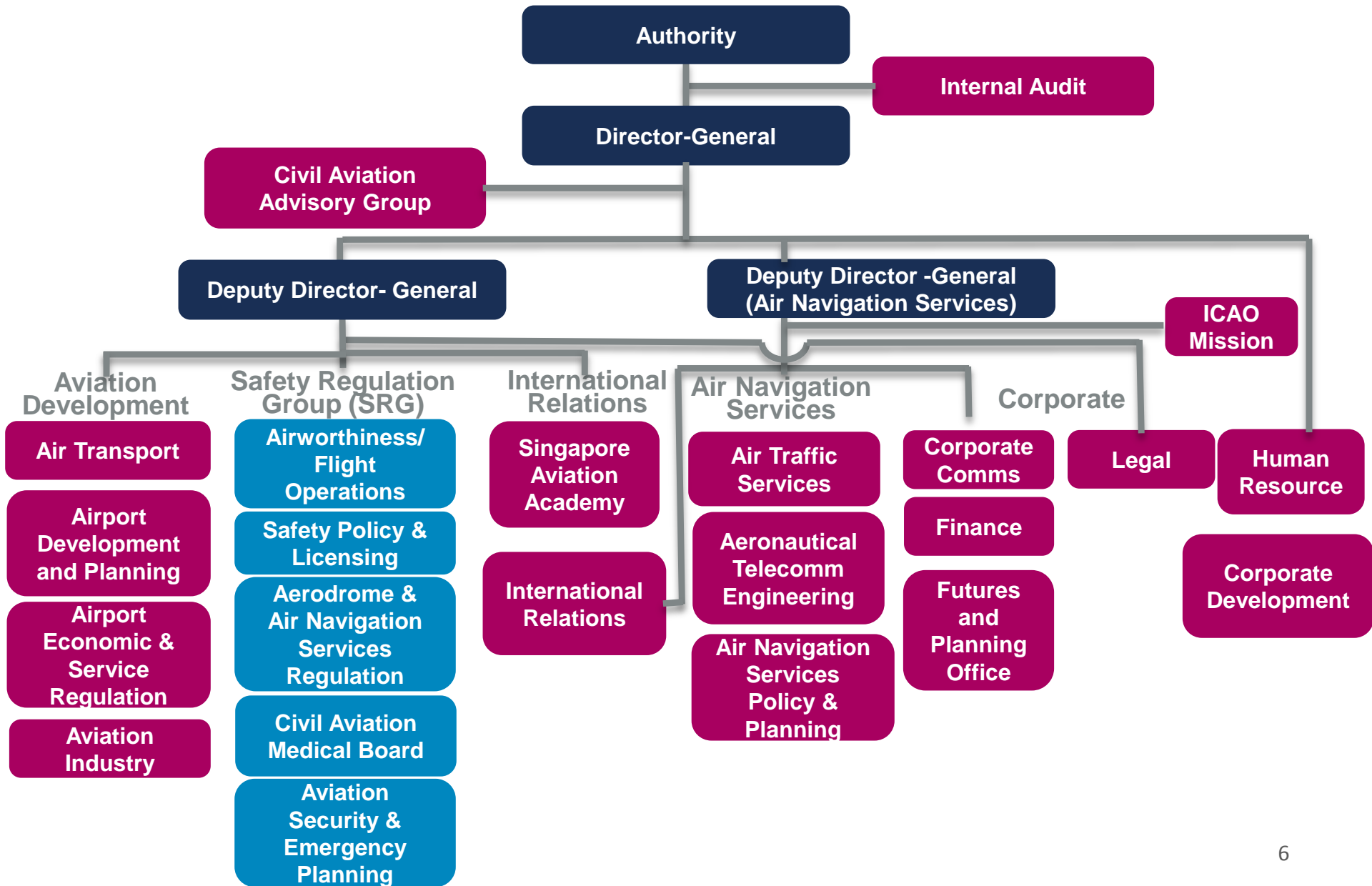
SAR Part 39 –
Airworthiness Directives

SAR Part 66 – Aircraft
Maintenance Licensing

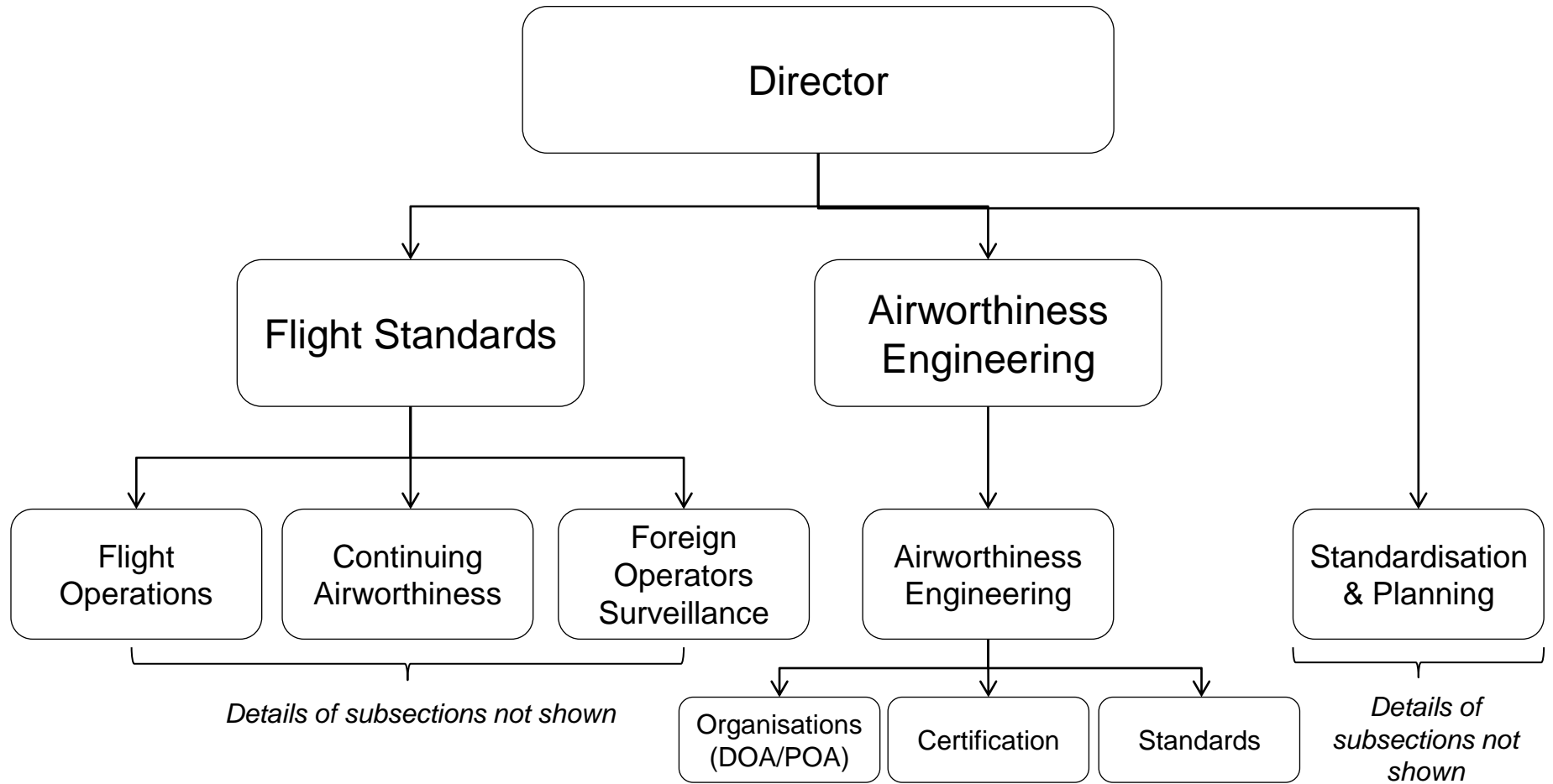
SAR Part 145 – Approved
Maintenance
Organisations

SAR Part 147 – Approved
Maintenance Training
Organisations

Organisation Structure of CAAS



Organisation Structure of Airworthiness/Flight Operations Division



SAR Part 21 Certification Activities

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

Type Certificate Acceptance

Supplemental Type Certificates (STC)

Singapore Technical Standard Order
(STSO) Certificate of Approval

Repair Design Approval (RDA)

Airworthiness Design Standards

Design Organisation Approval
(DOA)

Production Organisation Approval
(POA)

Type Certificate Acceptance

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

- Singapore is not a State of Design for aircraft, propellers or engines;
- Perform Type Acceptance on TC issued by States of Designs;
- CAAS adopt “Risk based approach” to evaluating the aircraft type certification before acceptance
- Aircraft issued with a letter of acceptance of type certificate include: Airbus A320 family, A330, A340, A380, Boeing 737, 777, 787, and a number of General Aviation Aircraft and Helicopter

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

Supplemental Type Certificates (STCs)

- Issued to signify approval for in-service design changes or modifications.
- Besides CAAS certified modifications, CAAS STCs are also issued upon completion of validation of FAA and CASA STCs.
- Till date, CAAS has issued more than 60 STCs, majority for design changes in aircraft cabin interior configuration such as seat, galleys, lavatory etc.

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

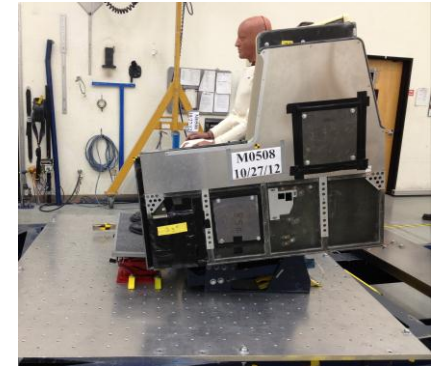
Singapore Technical Standard Order (STSO) Certificate of Approval

- Issued when the article meets the standard published by either CAAS or the FAA for Technical Standards Order;
- Besides CAAS certified articles, STSO certificate of approvals are also issued upon completion of validation of FAA and CASA approvals.
- Till date, CAAS has issued more than 145 STSO Certificate of Approval, majority for galley meal carts, waste carts, galley inserts etc.

Increasing STC/STSO capabilities

1) Build up certification capability

- Active participation in international forums - Fire Test Technical Group(FTTG) and Cabin Safety Research Technical Group (CSRTG)



2) Test facilities boost

- Jamco Singapore - galley static load test , flammability laboratory
- ST Aerospace Aircraft Seats – Static load test

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

Repair Design Approval (RDA)

- Issued to certify that the damage on aircraft or article is restored back to its original airworthy condition;
- Technical substantiation is required to ensure the repair scheme comply with the affected airworthiness requirements.

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

Airworthiness Design Standards

- CAAS adopts the airworthiness design standards published by the FAA and airworthiness standards issued in compliance with Annex 8 and 16 of the Chicago Convention (i.e. 14 CFR Part 25, EASA CS 25 etc).

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

Design Organisation Approval (DOA)

- Issued to applicants for STCs, STSO Certificate of Approvals, and organisations keen in approving minor repairs.
- DOA privileges;
 - Develop design data;
 - Issue statements of compliance to airworthiness standards;
 - Approval minor changes; and
 - Enter into arrangements for production.
- There are currently 21 organisations that holds CAAS DOA.

SAR Part 21 – Certification of Products and Articles and of Designs and Production Organisations

Production Organisation Approval (POA)

- Issued to applicants keen to produce STC and STSO articles;
- POA privileges;
 - Produce articles for fitment on board Singapore registered aircraft;
 - Able to issue Authorised Release Certificate CAAS AW95.
- There are currently 18 organisations that holds CAAS POA.

Bilateral Agreements



Since Sep 2007



Australian Government
Civil Aviation Safety Authority

Since Feb 2014

Recognition of CAAS issued
Supplemental Type Certificates and
Technical Standard Order Approvals

CAAS Industry outreach

Publications



BRIDGING SKIES
safety at the forefront

A publication of the Civil Aviation Authority of Singapore

ISSUE 04/2014

04 Managing Continuing Airworthiness

07 ADS-B – Redefining Air Traffic Management

08 Silkair B737-800 Entry-into-Service

Advancing Safety Hand in Hand

In line with CAAS' efforts to build a strong and positive culture, in which the industry and regulator work hand in hand to uphold a safe aviation environment, CAAS has increased and enhanced engagement and interaction with industry stakeholders. Apart from demonstrating greater transparency of internal policies and regulatory oversight procedures, CAAS also strives to share safety information to heighten awareness of the industry's regulatory compliance and safety performance. By taking the lead in sharing safety and surveillance information with the industry, CAAS hopes to encourage industry players to likewise come forward to share safety information as well as best practices with fellow aviation professionals in Singapore.

Through the sharing, CAAS emphasised that its main objective was to create a greater awareness of common and critical pitfalls in regulatory compliance, and safety risks identified by CAAS, as well as for organisations to internalise information provided – integrating it into their Safety Management System. CAAS also shared that, moving ahead, there will be more dialogue sessions with regulated entities at all levels, and industry players can look out for upcoming technical requirements courses on Singapore Airworthiness Requirements Part 21 (Certification of Products and Articles and Design and Production Organisations) and Part 145 (Approved Maintenance Organisations).

Overall, the seminar was well received, and CAAS intends to make this a regular sharing session with the industry.

By Chee Yen Ting
Senior Manager (Planning & Analysis)



One such seminar, entitled "Sharing Safety Information With You", was recently conducted at the Singapore Aviation Academy on 4 September 2014 as part of the CAAS Safety Series. Speakers from CAAS and the Aircraft Accident Investigation Bureau (AAIB) of Singapore shared pertinent safety performance data, case studies on aircraft accident investigations, and provided insights gleaned from analysis of surveillance information from the Singapore aviation sector.

Industry players were also provided with analysis of the outcomes of CAAS' surveillance activities. Across Singapore's air operators, and maintenance, design and production organisations, 2013 audit findings saw a slight increase of incidents from 2012. Although not indicative of any adverse safety trends, CAAS highlighted three areas with the highest number of audit findings and encouraged industry players to examine these areas internally.

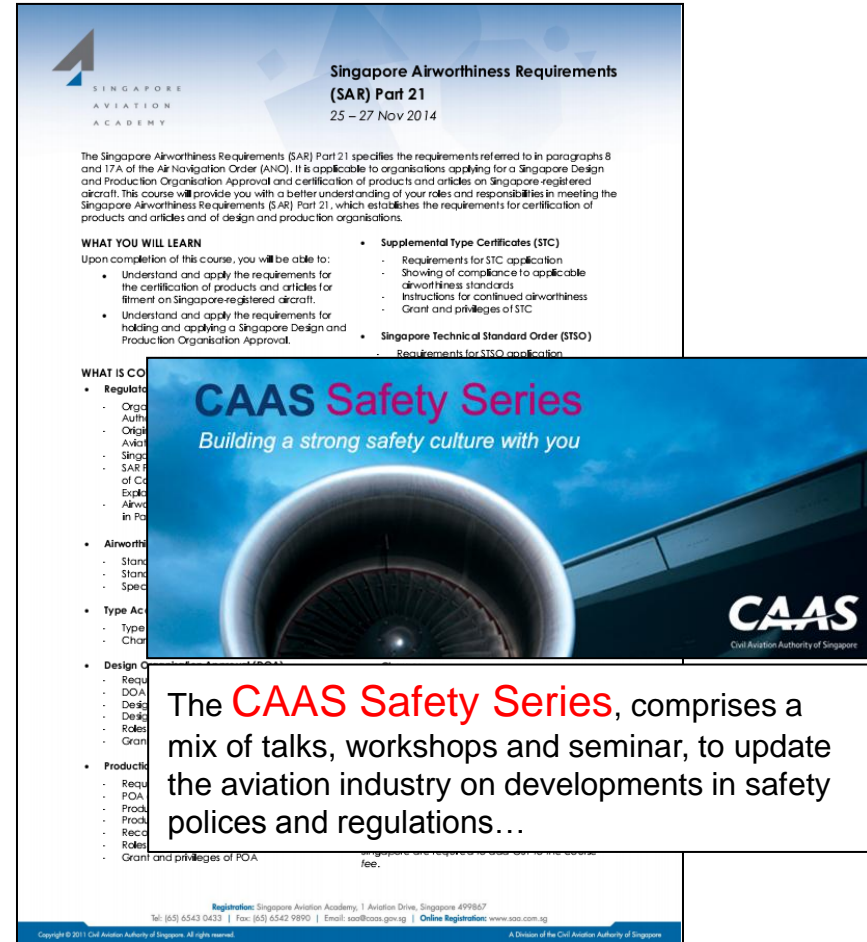
Operational documents approved by CAAS were not readily accessible to and compiled with by the staff of the certificate holders.

2. There was a lack of provision of technical guidance, tools and safety critical information, as applicable, by certificate holders to their technical personnel to enable them to perform their functions.

3. There was a lack of effective implementation of internal checks and audit processes by certificate holders to ensure that they continue to meet the established safety requirements.

An actual case of an audit finding was used as a case study, in which CAAS shared perspectives on how such non-compliance could have been prevented. Specifically, CAAS identified the root causes of these audit findings to be a lack of understanding of CAAS' regulatory and technical requirements, an over-reliance on technology, as well as human error and lapses in adhering to company procedures.

Workshops / Seminars / Courses



Singapore Airworthiness Requirements (SAR) Part 21

25 – 27 Nov 2014

The Singapore Airworthiness Requirements (SAR) Part 21 specifies the requirements referred to in paragraphs 8 and 17A of the Air Navigation Order (ANO). It is applicable to organisations applying for a Singapore Design and Production Organisation Approval and certification of products and articles on Singapore-registered aircraft. This course will provide you with a better understanding of your roles and responsibilities in meeting the Singapore Airworthiness Requirements (SAR) Part 21, which establishes the requirements for certification of products and articles and of design and production organisations.

WHAT YOU WILL LEARN

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

- Understand and apply the requirements for the certification of products and articles for flight on Singapore-registered aircraft.
- Understand and apply the requirements for holding and applying a Singapore Design and Production Organisation Approval.
- Supplemental Type Certificates (STC)
 - Requirements for STC application
 - Showing of compliance to applicable airworthiness standards
 - Instructions for continued airworthiness
 - Grant and privileges of STC
- Singapore Technical Standard Order (TSO)
 - Requirements for TSO application

WHAT IS COVERED

- Regulatory
 - Organisational Approval
 - Original Aircraft
 - Single
 - SAR Part 21
 - of Civil Aviation
 - Exp
 - Approved in PO
- Airworthiness
 - Standards
 - Standards
 - Spec
- Type Approval
 - Type
 - Char
- Design Organisation Approval
 - Requirements
 - DOA
 - Design
 - Design
 - Roles
 - Grant
- Product Approval
 - Requirements
 - POA
 - Product
 - Product
 - Recc
 - Roles
 - Grant and privileges of POA

CAAS Safety Series

Building a strong safety culture with you

CAAS
Civil Aviation Authority of Singapore

The **CAAS Safety Series**, comprises a mix of talks, workshops and seminar, to update the aviation industry on developments in safety polices and regulations...

Registration: Singapore Aviation Academy, 1 Aviation Drive, Singapore 499847
Tel: (65) 6543 0433 | Fax: (65) 6542 9990 | Email: soo@caas.gov.sg | www.soo.com.sg
Online Registration: www.soo.com.sg

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THANK YOU

