

# **CAR/SAM Regional Guidance Material on Air Traffic Services Quality Assurance Programmes**

**CAR/SAM Air Traffic Services Quality Assurance Programmes  
Seminar**

**South American Regional Office**



**CAR/SAM Air Traffic Services Quality Assurance Programmes Seminar  
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**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**SOUTH AMERICAN REGIONAL OFFICE**

**CAR/SAM REGIONAL GUIDANCE MATERIAL ON**

**AIR TRAFFIC SERVICES**

**QUALITY ASSURANCE PROGRAMMES**

**Chapter 5**

**Version 1.0**

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# Contents

## Chapter 5.

# Air Traffic Incident Reporting, Investigations, and Investigation Teams



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Introduction

### – Air traffic incidents

- AIRPROX
- Operational error
- Operational deviation
- Runway incursion
- Pilot deviation

### – Casual factor

- Procedural
- Ground facilities (equipment)
- Human





# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

- **General reporting procedures**
  - Reporting by pilots
  - Reporting by ATS
  - ATS incident report form for use by pilots and controllers
- **Investigation and documentation**
- **Analysis of ATS incident**
- **Release of information**
  - In the interest of accident/incident prevention
  - Publish report as soon as possible



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

- **Air traffic incident investigation process**
- **Step-by-step process**
- **Suspected ATS incident event**
  - Identify and report ATS deficiencies
  - That problems could be corrected
  - Reporting of ATS incidents
    - Requirement within States
    - Responsibility of all ATS personnel
    - Immediately report suspected ATS incidents to ATS supervisor or appropriate ATS administration official
    - Without fear of reprisal



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Preliminary ATS incident investigation

- Fact finding
- Determine what occurred in the ATS system
- Determine validity of the suspected ATS incident
- Confirmation of ATS incident
  - Take appropriate action
  - Advise other ATS unit if involved
  - Relieve controller(s) may be involved
  - Gather pertinent information (e.g. flight progress strips, etc.)
  - Review voice recordings and prepare working copy



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

- Review computer and radar data
- Conduct preliminary interviews
- Notify ATS management
- Complete preliminary ATS Incident Investigation Worksheet

## ■ Follow-up investigation

### – ATS unit chief should

- Ensure ATS incident investigations are conducted
- Coordinate with other ATS unit chief if involved
- Designate ATS incident Investigator-In-Charge (ATS-IIIC)
- Assemble ATS incident investigation team
- Ensure complete, thorough, objective and timely investigation



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## – ATS-IIIC

- Conduct complete investigation
- Forward findings and recommendations to ATS unit chief
- Determine scope of other ATS unit investigation if involved and exchange information
- Assign duties to team members
- Conduct interviews in accordance with national and local requirements

## – ATS incident investigation team

- Assist ATS-IIIC
- Remain under guidance of ATS-IIIC during investigation process



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

- Investigation process

- Fact finding
- In-depth inquiry into all causal factors

- |                            |                                       |
|----------------------------|---------------------------------------|
| ■ Procedures               | ■ Consequence of ACAS/TCAS event      |
| ■ Training                 | ■ Meteorological conditions           |
| ■ Supervision              | ■ Control position configuration      |
| ■ Equipment                | ■ Coordination procedures             |
| ■ Control room environment | ■ Aerodrome environment               |
| ■ External factors         | ■ Human factors                       |
| ■ Controller actions       | ■ Accuracy of automated radar systems |
| ■ Airspace configuration   | ■ Radar data                          |
| ■ Traffic flows            |                                       |
| ■ Pilot actions            |                                       |





# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Investigation process (cont..)

### – Interviews

- Conduct interviews with all possible personnel involved or who may have knowledge of the incident
- Conduct interview in atmosphere of shared concern
- Consider national and/or local interview procedures
- Allow written comments and recommendations from interviewee
- ATS-IIIC or investigation team should conduct interviews





# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Investigation process (cont.)

### – Voice recordings

- Review voice recording
- Make certified copy of original recording
- 5 minutes before to 5 minutes after last contact
- Include track time if available
- Written transcript of communications only when needed

### – Radar data

- Radar data may be used to validate occurrence of ATS incident
- Written procedures should be developed explaining process
- Consider automation capabilities and accuracy of data



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Reclassification of ATS incident

- What if during the investigation data indicates a reclassification is warranted?
- The incident may be reclassified as:
  - Pilot deviation
  - Other ATS unit deviation
  - From operational error to operational deviation
  - From operational deviation to operational error
  - No occurrence



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Return to operational duties

- ATS chiefs should remain involved in the post ATS incident process to ensure complete and consistent handling

### ■ Reasons for suspension of controller's rating and assignment of proficiency training

- Assist and enhance controller's performance
- Best of his/her abilities
- Meet minimum quality standards
- Improve overall performance and quality of ATS



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Return to operational duties (cont.)

### – Consider the following when returning a controller to operational duties

- Events leading up to and surrounding ATS incident
- Controller's statement
- Procedure or separation minimum involved
- Voice recordings
- Controller's training record
- Controller proficiency checks
- Proficiency training
- Controller currency on the control position
- Computer data
- Involvement in previous ATS incidents
- Results of interviews and recommendations made by ATS-IIIC and investigation team



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Return to operational duties (cont.)

- Deficiencies in controller's performance
- Determine whether to suspend controller's rating
- Suspension of rating not based solely on involvement in ATS incident but based on performance
- Determine appropriate actions and refresher training
- Complete refresher training
- Re-certify controller through controller proficiency check



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

## ■ Final ATS incident reports

### – ATS unit chief

- Analyze data submitted by ATS-IIIC and investigation team in Final ATS Incident Investigation Report to determine and/or endorse classification of incident and
  - Categorization of ATS incident (i.e, procedural, facility, human factor, etc.)
  - Causal factors
  - Recommendation and corrective actions

- Complete Final ATS Incident Report within 30 days





# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

- **ATS incident tracking process**
  - Annual ATS incidents tracking process
  - Will assist CAAs with follow-up investigations and trend analysis
  - Sample
    - ATS Incident Report # XXXX-A-00-001
    - ATS Incident Report # XXXX-T-00-002
    - ATS Incident Report # XXXX-F-00-003

## Legend:

“XXXX” = ATS unit identification

“A, T, or F” = Type of ATS unit (A = Area (ACC); T = Approach (APP) and Aerodrome Control Tower; F = FIC, AFIS, etc.)

“00” = Last two digits of the year

“001” = ATS incident number in sequence by year for the unit



# Chapter 5. Air Traffic Incident Reporting, Investigations, and Investigation Teams

- **Training and proficiency records**
  - Document in training and proficiency records
- **ATS incident records retention**
  - Determine retention period
  - 2 ½ years is recommended
- **National ATS authority responsibilities**
  - Maintain central source of ATS incident data
  - Review final ATS incident investigation reports
  - Develop and distribute annual ATS incident analysis report
  - Determine effectiveness and efficiency of programme
  - Maintain liaison with ATS unit chiefs
  - Maintain oversight of ATS incident reports





THE END

THANK YOU