

NON-CONFORMITY, CORRECTIVE AND PREVENTIVE ACTIONS

Working Efficiently and Effectively and
Fostering Continuous Improvement

*Presented By: Nirmala Nohar
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OBJECTIVES OF THIS PRESENTATION

To provide an overview of what is a Non-Conformity and distinction amongst Key Terms

To provide an awareness of the objectives of a Non-Conformity, Corrective and Preventive Actions (NCPA) System

To provide an overview of the AIS/AIM NCPA System

To ensure that participants understand and can perform their role in the system

TOPICS TO BE DISCUSSED

1

Definition,
Criteria and
Methods of
Identification
of (Potential)
Non-
Conformities

2

Definition
and
distinction
amongst
Key Terms

3

Objectives
and
Overview
of a Non-
Conformity,
Corrective
and
Preventive
Action
(NCPA)
System

4

Planning,
Control
and
Follow-Up
of
Corrective
and
Preventive
Actions

5

Roles and
Responsibi-
lities

6

Oversight,
Analysis
and
Reporting
by the
QMS Rep.

DEFINITION OF A NON-CONFORMITY

A Non-Conforming product (or service) is one which does not comply with ICAO Standards and Recommended Practices, National Regulations and/or customer requirements.

Examples:

Incorrect data in NOTAM proposal or Promulgation Advise Form, FPL, Chart etc. disseminated by ECAR States to Piarco AIM i.e.

Incorrect data received by Piarco AIM for publishing (errors, omissions which can have a direct or indirect impact on safety.)

CRITERIA FOR IDENTIFYING NON-CONFORMITIES

Failure to comply with:

- ❖ ICAO Standards and Recommended Practices (SARPs);
- ❖ National Regulations; and
- ❖ Customer Requirements

DEFINITION OF CORRECTION, CORRECTIVE AND PREVENTIVE ACTION

Word	Meaning
Correction	Action taken to eliminate an identified non-conformity <i>Note 1: A correction may be concurrent with a corrective action.</i> <i>Note 2: A correction may be, for example, a reprocess or a reclassification</i>
Corrective Action	Action taken to eliminate the Root Cause(s) of non-conformities in order to prevent them from happening again . <i>Note 1: A non-conformity may result from more than one cause.</i> <i>Note 2: Corrective action is taken to prevent something from happening again.</i> <i>Note: There is a difference between correction and corrective action.</i>
Preventive Action	Action taken to eliminate the Root Cause(s) of potential non-conformities in order to prevent them from happening in the first place. <i>This action is pre-emptive by nature.</i>
Root Cause(s)	The most basic underlying cause(s) that can reasonably be identified that management has control to fix and, when fixed, will prevent (or significantly reduce the likelihood of) the problem's recurrence.

DEFINITION OF CRITICAL, MAJOR AND MINOR

(As per ICAO Document 9839 Manual on Quality Management System for AIS)

Word	Meaning
Critical	Directly compromises the safety of air navigation e.g. incorrect instrument approach minima, incorrect track or vertical limits.
Major	Published information is missing, ambiguous or difficult to interpret e.g. incorrect ATS frequency.
Minor	Typographical, grammatical, printing or formatting deficiencies which do not directly cause operational difficulties, but do not meet expected standards. <u>Examples:</u> <ul style="list-style-type: none">❖ any typo. error where the published information is correct in context and content but could contain spelling or grammatical errors and❖ errors where there are no operational impacts.

OBJECTIVES & OVERVIEW OF AN NCPA SYSTEM

To establish guidelines for identifying, controlling and dealing with non-conformities to ensure:

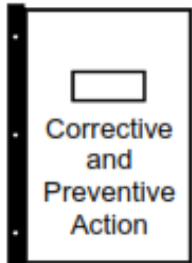
- ❖ Incorrect or corrupted information is not used

and

To establish guidelines for the implementation of the Corrective and Preventive Actions (CAPA) component of the Quality Management System (QMS) in order to eliminate the **ROOT CAUSE(S)** of :

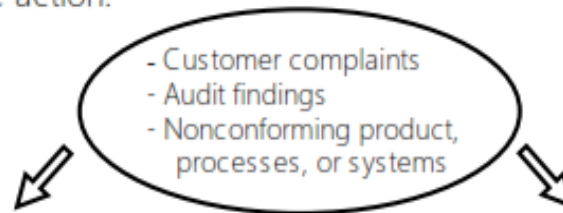
- ❖ actual/existing non-conformities, in order to prevent them from occurring *again*.
- ❖ **potential** non-conformities to prevent them from occurring *in the first place*; and
- ❖ To assess the efficacy of corrective and preventive actions.

OBJECTIVES & OVERVIEW OF AN NCPA SYSTEM



Procedures describe corrective and preventive action.

- Actions are appropriate to the impacts of the nonconformities.
- Record changes in documented procedures resulting from corrective and preventive action.



Eliminate the cause of *existing* nonconformity.

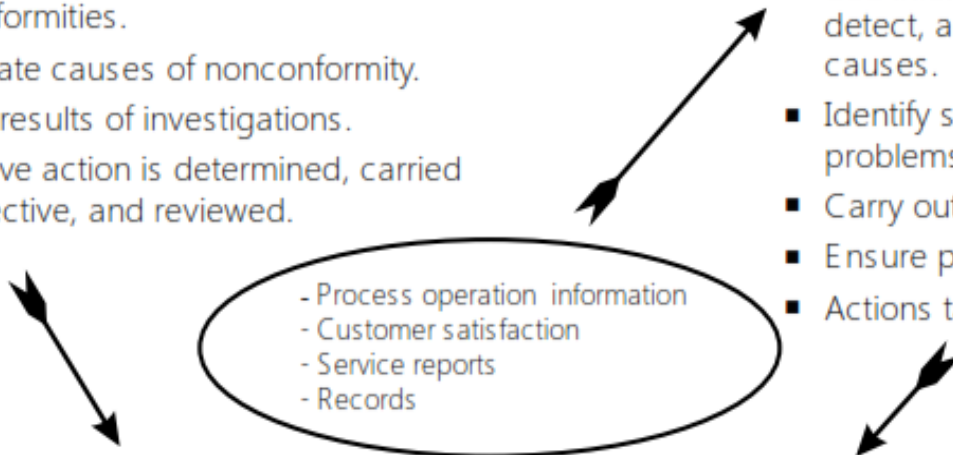
Eliminate the cause of *potential* nonconformity.

8.5.2 Corrective action is taken.

- Resolve complaints and nonconformities.
- Investigate causes of nonconformity.
- Record results of investigations.
- Corrective action is determined, carried out, effective, and reviewed.

8.5.3 Preventive action is taken.

- Use information from many sources to detect, analyze, and eliminate potential causes.
- Identify steps needed to prevent problems.
- Carry out the preventive action.
- Ensure preventive action is effective.
- Actions taken are recorded and reviewed.



Top management reviews the effectiveness of the quality management system (5.6).

OBJECTIVES & OVERVIEW OF AN NCPA SYSTEM

How do you know if Preventive Action is needed?

While it is acknowledged that the best time to work on preventing problems is in the QMS Planning Process, the need for initiating a Preventive Action Request (PAR) may still be required as determined by:

- ❖ Staff observation or examination of procedures, work instructions and systems
- ❖ Management Reviews
- ❖ Data/Trend Analysis
- ❖ Monitoring Customer perception and satisfaction
- ❖ Internal Audits
- ❖ External Audits
- ❖ Planning and Risk Assessment

PLANNING, CONTROL AND FOLLOW-UP

Two types of actions may be planned and organised depending on the type of non-conformity as described below:

Corrective Action:

Action aimed at preventing **actual** non-conformities from occurring *again*.

Preventive Action:

Action aimed at resolving **potential** non-conformities to prevent their occurrence *in the first place*.

The form used for recording the planning, organisation, control, follow-up and approval of corrective or preventive action is the [Corrective or Preventive Action Request \(CAR/PAR\) Form \(AIM/F83,85/QA\)](#).

METHODS OF IDENTIFYING NON-CONFORMITIES

- ❖ Internally by any AIS personnel via observation during the course of their normal duties.
- ❖ Via Audits (External)
- ❖ Via AIM QMS Team Meetings
- ❖ Externally by a customer and communicated to AIS in person, via phone, fax email or physical document.

ROLES AND RESPONSIBILITIES

AIS Staff shall:

- ❖ Correct any non-conformities identified during the course of their duties. This may include re-processing, correction or amendment.
- ❖ Initiate Corrective Action by submitting a Corrective or Preventive Action Request (CAR/PAR) Form to the process owner.

ROLES AND RESPONSIBILITIES

The Process Owner shall:

- ❖ Determine whether corrective action is required by conducting an impact assessment considering the criticality of the non-conformity using the guidance provided in ICAO Document 9839 – Manual on the QMS for AIS.
- Generally, issues classified as Critical or Major will indicate the need for corrective action.
- The process owner must prioritise and balance criticality against resources available when making this decision.
- ❖ Determine due date for resolution in conjunction with the QMS Representative.
- ❖ Investigate the issue and conduct a Root Cause Analysis (RCA) to determine the root cause(s).

ROLES AND RESPONSIBILITIES

The Process Owner shall:

- ❖ Determine corrective action(s) to be applied based on the results of the RCA.
- ❖ Apply the corrective action and evaluate its effectiveness for an appropriate period of time as determined in conjunction with the QMS Representative.
- ❖ If not effective, apply corrective actions until resolution of the issue.
- ❖ Complete the CAR/PAR Form and submit to the QMS Representative.

ANALYSING AND MONITORING EFFICACY OF ACTIONS

Root Cause Analysis (RCA) is a method of problem solving used for identifying the root causes of faults or problems.

To be effective, RCA must be performed systematically, usually as part of an investigation, with conclusions and root causes that are identified backed up by documented evidence. A team effort is typically required.

5 Whys

By repeatedly asking the question “Why” (five is a good rule of thumb), you can peel away the layers of symptoms which can lead to the root cause of a problem.

Benefits of the 5 Whys

Help identify the root cause of a problem.

Determine the relationship between different root causes of a problem.

One of the simplest tools; easy to complete without statistical analysis.

ANALYSING AND MONITORING EFFICACY OF ACTIONS

The activities below serve the following purposes:

Impact Assessment:

- ❖ To identify the (potential) impacts of a (potential) non-conformity.
- ❖ To determine the 'criticality' or effect on safety and/or operations of a (potential) non-conformity.
- ❖ To ascertain whether a (potential) non-conformity requires (Preventive Action) Corrective Action implementation.

Root Cause Analysis:

- ❖ To identify the underlying cause(s) that have led to an undesirable outcome such as a (potential) non-conformity.
- ❖ To identify what needs to be changed to prevent (occurrence) recurrence.
- ❖ To identify lessons learned to promote achievement of better consequences in the future.

ROLES AND RESPONSIBILITIES

The QMS Representative shall:

- ❖ Ensure that the NCPA procedure is effectively implemented and maintained in the AIS Unit.
- ❖ Determine, in conjunction with the process owner, appropriate due dates for resolving non-conformities.
- ❖ Issue weekly reports to the process owner of any overdue actions.
- ❖ Issue bi-annual status reports to the relevant authority, Piarco AIM Quality Assurance Unit and the process owner of issues resolved during the period and any overdue actions. These shall contain the updated Corrective Action Tracking Log.

ROLES AND RESPONSIBILITIES

The QMS Representative shall:

- ❖ Monitor and verify the effectiveness of the corrective or preventive actions taken.
- ❖ Review and close CARs/PARs after ensuring their resolution.
- ❖ Maintain the Corrective/Preventive Action Tracking Log.
- ❖ Overall oversight and monitoring of the performance of this procedure using appropriate indicators. (See KPIs in later slide)

OVERSIGHT, ANALYSIS AND REPORTING BY THE QMS REPRESENTATIVE

Purpose of Data and Trend Analysis:

- ❖ To process, organize and manipulate data so as to produce useful information that can lead to conclusions to support decision-making.
- ❖ To analyse data generated by the QMS in order to monitor its performance and determine appropriate courses of action.
- ❖ To enable measurement of Key Performance Indicators (KPIs) set by management.
- ❖ To spot a pattern or 'trend' in the data and its possible future implications.

OVERSIGHT, ANALYSIS AND REPORTING BY THE QMS REPRESENTATIVE

Importance of Key Performance Indicators:

- ❖ To help organisations understand how well they are performing in relation to their strategic goals and objectives.
- ❖ To reduce the complex nature of organisational performance to a small number of key indicators in order to make performance more understandable and digestible.
- ❖ To be used as evidence to inform management decisions.
- ❖ To facilitate continuous learning and improvement.

OVERSIGHT, ANALYSIS AND REPORTING BY THE QMS REPRESENTATIVE

Important KPIs for the NCPA Procedure:

The following are to be measured over a specific time period e.g. quarterly etc.

- ❖ Number of overdue Corrective Actions (CA)
- ❖ Number of CA per given process e.g. NOTAM Management, FPL management, AIP (AMDT)
- ❖ Number of CA that did not resolve the problem
- ❖ Number of non-conformities for the same issue after completion of CA
- ❖ Number of open issues/total number for a given period

Summary

Slides 4, 6,7, 8, 9, 12, 13-19, 21 and 22 briefly summarise the main ideas and activities in this procedure.

REFERENCE MATERIAL

ISO 9001:2008 Standard (Quality Management System-Requirements)

ICAO Document 9839 Manual on the QMS for AIS

Annex 15 Aeronautical Information Services (AIS)

ICAO Document 8126 AIS Manual

ICAO Document 8400 ICAO Abbreviations and Codes

ICAO Document 7910 Location Indicators

ICAO Document 8643 Aircraft Type Designators

ICAO Document 4444 Air Traffic Management

ICAO Document 8697 Aeronautical Chart Manual

Annex 4 Aeronautical Charts

ICAO Document 9881 Guidelines for Electronic Terrain, Obstacle and
Aerodrome Mapping Information

*The above ICAO documents can be accessed from the Access DB (ICAO Annexes and Documents) using the path **AIS Shared Folder/ICAO Publications' Folder/ICAO PUBS** on the LAN.*

MISCELLAENOUS

Useful Websites:

http://www.iso.org/iso/home/standards/management-standards/iso_9000.htm

http://www.masquality.com/Business_Solutions/Free_Resources.html

<http://www.quality-assurance-solutions.com/>

<http://asq.org>

<http://www.cebos.com/>

Any Questions.....



What do YOU have to say?