



**Union of Myanmar
Ministry of Transport
Department of Civil Aviation**

ANS SAFETY REGULATORY AUDITOR AND INSPECTOR HANDBOOK

Version 10.0

**Air Navigation Safety Division
Department of Civil Aviation**

18th May, 2010

Table of Contents

Amendment Record

Checklist of Pages

Foreword

Glossary of Abbreviations used in this Handbook

1. Safety Regulatory Audit and Inspection

- 1.1 Introduction
- 1.2 Objectives of Regulatory Audits and Inspections
- 1.3 Differences between Regulatory Audits and Inspections
- 1.4 Audits/Inspections Conducted by ATM Safety Regulator and Service Provider

2. Safety Regulatory Auditing and Inspection Programme

- 2.1 Annual Plan 5

3. Safety Regulatory Auditors and Inspectors

- 3.1 Qualification Criteria
- 3.2 Competency and Attributes
- 3.3 Responsibilities of Safety Regulatory Auditors/ Inspectors
- 3.4 Responsibilities of Lead Auditor/Inspector
- 3.5 Composition of Safety Regulatory Audit/Inspection Team
- 3.6 Cooperating with the Audit/Inspection Team

4. Scope of Safety Regulatory Audits/Inspections

- 4.1 Scope

5. Planning and Preparing for Safety Regulatory Audits and Inspections

- 5.1 Audit/Inspection Plan
- 5.2 Pre-Audit/Inspection Preparation
- 5.3 Prior Notification and Deferral
- 5.4 Documentation

6. Procedures in Conducting Safety Regulatory Audits and Inspections

- 6.1 Pre-Audit/Inspection Meeting
- 6.2 On-site Audits/Inspections
- 6.3 Collection of Data/Information
- 6.4 Documentation
- 6.5 Post-Audit/Inspection Meeting (Debrief)
- 6.6 Handling of Findings and Recommendations
- 6.7 Corrective Action Plan (CAP)

Table of Contents

7. Final Report, Follow-Up and Review

7.1 Report Preparation and Submission

7.2 Follow-Up

7.3 Post-Audit/Inspection Review

Appendix Cover Page

Appendix 1 : Samples of Forms **DCA SOI-1 to DCA SO1-16 25**

Appendix 2 : Document Change Request Form

ANS Safety Regulatory Auditor & Inspector Handbook Checklist of Pages

Page	Date	Page	Date
Table of Contents	18 th May 2010		
Amendment Record	18 th May 2010		
Checklist of Pages	18 th May 2010		
Foreword	18 th May 2010		
Glossary	18 th May 2010		
Page 9	18 th May 2010		
Page 10	18 th May 2010		
Page 11	18 th May 2010		
Page 12	18 th May 2010		
Page 13	18 th May 2010		
Page 14	18 th May 2010		
Page 15	18 th May 2010		
Page 16	18 th May 2010		
Page 17	18 th May 2010		
Page 18	18 th May 2010		
Page 19	18 th May 2010		
Page 20	18 th May 2010		

Intentionally blank

Foreword

1. This Handbook is published in connection with the Safety Regulatory Oversight activities undertaken by the Air Navigation Safety of the Civil Aviation Department of Civil Aviation Myanmar. It contains safety regulatory auditing/inspecting principles and procedures for ANSD officers to conduct regulatory audits and inspections on Air Navigation Services (ANS).
2. The primary objective of this publication is to assist ANSD auditors/inspectors and the audited/inspected party by specifying the auditing/inspection principles and standard procedures to be followed.
3. These principles and procedures have been developed based upon proven management concepts applied in safety-related disciplines of the civil aviation industry. Application of standard procedures will ensure that audits/inspections are completed consistently according to a process which is systematic, objective, fair and transparent.
4. To enhance readability, the term “**the Division**” used in this document refers to “the Air Navigation Safety Division”; “**Air Navigation Services (ANS)**” means Services provided to air traffic during all phases of operations including air traffic management (ATM), communications, navigation and surveillance (CNS), meteorological services for air navigation (MET), search and rescue (SAR) and aeronautical information services (AIS). “**ANS safety provisions**” refers to “a generic term meaning variously ATM services (ATMS) safety rules and regulations as stipulated in ICAO safety Standards and Recommended Practices (SARPs), safety management procedures as stipulated in Safety Management System (SMS) documents or manuals of the air navigation service providers (ANSPs) of Myanmar. “**ANS system**” refers to a combination of components, including Hardware such as equipment or installations, Software such as training, procedures or instructions, Liveware such as personnel, and Environment of operational workplaces, organized to perform an ANS function. “**ATM services**” is a generic term meaning variously air traffic control service, air traffic advisory service, flight information service, alerting service, air traffic flow management, and airspace management.
5. This Handbook is a controlled document and is subject to periodic review. The ANSD will maintain this document as accurate, complete and up-dated as possible. To achieve this, any comments or suggestions to improve the document are encouraged. Such comments or suggestions should be addressed to Director of ANSD, using the Document Change Request Form, as appended to this Handbook, at the following address:

Director
Air Navigation Safety Division
Department of Civil Aviation
DCA H.Q Building
Yangon International Airport
Yangon 11021, Myanmar
Tel: (951) 533008
Fax: (951) 533016
Email: ats.dca.gov.mm

Glossary of Abbreviations used in this Handbook Abbreviation Decode

Abbreviation	Decode
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
ATM	Air Traffic Management
ATMS	Air Traffic Management Services
CAP	Corrective Action Plan
C,ATS	Chief, ATS Standards
ICAO	International Civil Aviation Organization
OBN	Observation
RCA	Request for Corrective Action
SAN	Safety Notification
SARPs	Standards and Recommended Practices
ATSO	Senior ATM Standards Officer
SMS	Safety Management System

Auditing and Inspection Principles and Procedures

1. Safety Regulatory Audit and Inspection

1.1 Introduction

1.1.1 ANSD shall oversee the compliance of safety regulatory requirements and standards by the ANS providers through regular audits/inspections.

1.1.2 Audit and inspection are techniques employed by ANSD to verify compliance with applicable safety regulatory requirements and standards by the ANS providers. Both of them are tools for evaluating the performance of the ANS providers with a view to ensuring ANS system safety.

1.1.3 In addition to routine audits/inspections, such activities may also be conducted consequent upon significant changes in the ANS provider's system or as a follow-up on corrective actions which have been imposed in previous audit/inspection.

1.2 Objectives of Regulatory Audits and Inspections

1.2.1 The objectives of safety regulatory audits/inspections are as follows:

a) to verify compliance of:

(i) established procedures against required ANS safety provisions including the relevant MCARs, ICAO SARPs, safety regulatory requirements and standards, and ANSP's SMS procedures;

(ii) actual operational practices against stipulated procedures;

b) to determine the effectiveness of the procedures in place in meeting specified objectives;

c) to identify areas for improvement in terms of ANS system safety and integrity.

1.3 Differences between Regulatory Audits and Inspections

1.3.1 Major differences between a safety regulatory audit and an inspection are illustrated as follows:

Regulatory Audits	Regulatory Inspections
Apply to the overall arrangements, or elements thereof, of the ANS processes or services.	Apply to particular ANS service or specific parts of the ANS system.

Auditing and Inspection Principles and Procedures

Regulatory Audits	Regulatory Inspections
Verify compliance of: - documented provisions and other established arrangements against safety regulatory requirements/standards, ICAO SARPs, MCARs; - actual operational practices against\ documented procedures and other established arrangements.	Verify by testing and/or examination whether prescriptive safety regulatory requirements/standards have effectively been complied with.
Focus special attention on processes with wider scope.	Focus normally on a particular element of ANS system with smaller scope.
Represent prime safety oversight technique.	May serve as an oversight technique supplementary to audits.
Usually conducted by a team of auditors in accordance with more comprehensive procedures.	May be conducted by one inspector in accordance with simpler procedures.

1.4 Audits/Inspections Conducted by ATM Safety Regulator and ANS Providers

1.4.1 ANSD carries out various safety survey activities including audits/inspections on a regular basis as part of its regulatory function and as a means of proactive safety management.

1.4.2 ANSD periodically conducts safety audits/inspections on ANS system and services of the ANS providers, which may be referred to as “External” or “Third Party” audits/inspections, whereas the ANS providers carry out periodic “Internal” or “First Party” audits/inspections on its own system and services under the Safety Management System.

1.4.3 In respect of both “External” and “Internal” audits/inspections, the associated findings and recommendations, if any, shall be documented in reports and made known to the audited party in accordance with applicable audit/inspection protocols and procedures.

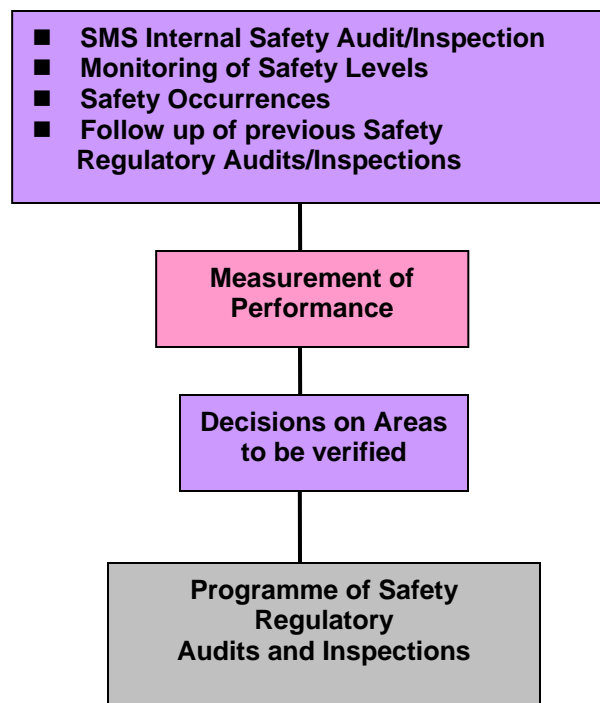
Auditing and Inspection Principles and Procedures

2. Safety Regulatory Auditing and Inspection Programme

2.1 Annual Plan

2.1.1 ANSD programmes annual safety regulatory audit/inspection plan to cover all possible areas of safety concern, including arrangements to carry out safety audits, reviews or surveys by the ANS providers.

2.1.2 ANSD takes necessary steps, to programme safety regulatory audits/inspections as shown in the following diagram. It illustrates the logical flow in programming such activities:



(Programming Safety Regulatory Audits and Inspections)

2.1.3 Senior ATS Standards Officer (SATSO) prepares an annual audit/inspection plan, by December each year, which may be updated when required. This annual plan shall be submitted to Chief, ATM Safety Sub Division for approval.

2.1.4 C,ATS ensures that the annual auditing/inspection activities are appropriately prioritised and programmed in the annual plan.

Auditing and Inspection Principles and Procedures

3. Safety Regulatory Auditors and Inspectors

3.1 Qualification Criteria

3.1.1 ATMSO defines qualification criteria for regulatory auditors/inspectors so as to ensure an appropriate level of knowledge, training, experience and competency covering, at minimum, the following aspects:

- a) Knowledge and understanding of the standards against which audits and inspections are to be performed;
- b) Techniques of examining, observing, interviewing, evaluating and reporting;
- c) Skills required for managing an audit/inspection such as planning, organizing, communicating, documenting and directing;
- d) Competency of auditors/inspectors that should be evaluated on a regular basis.

3.2 Competency and Attributes

3.2.1 ATMSO provides all regulatory auditors/inspectors, including ad-hoc auditors/inspectors, with required training to ensure knowledge, skill and competency. C,ATS would normally arrange regulatory auditors/ inspectors to receive proper training before undertaking an audit/inspection.

3.2.2 ATMSO requires regulatory auditors/inspectors to perform assigned duties in a professional, honest and consistent manner.

3.3 Responsibilities of Safety Regulatory Auditors/ Inspectors

3.3.1 ANSD auditors/inspectors are responsible for:

- a) conducting regular audits/inspections as per annual audit/inspection plan;
- b) complying with applicable audit/inspection procedures as stipulated in this document,
- c) documenting observations and reporting findings;
- d) communicating and clarifying observations and findings with audited/inspected party where necessary;
- e) taking follow-up actions as required;
- f) verifying the effectiveness of corrective actions taken as a result of the audit/inspection wherever applicable; and
- g) maintaining and safeguarding audit/inspection documentation as appropriate.
- h) preparing and utilizing relevant checklists for different ANS domains (i.e. ATM, CNS, AIS, Aeronautical charts, PANS-OPS, SAR & ATS related MET) being audited/inspected.

Auditing and Inspection Principles and Procedures

3.4 Responsibilities of Lead Auditor/Inspector

3.4.1 Whether an audit/inspection is carried out by a team or an individual, ANSD assigns where necessary a Lead Auditor/Inspector as overall in-charge. His/Her responsibilities, in addition to those of auditor/ inspector as listed in paragraph 3.3.1 above, include:

- a) assisting with the selection of other audit/inspection team members;
- b) preparation of audit/inspection plan, including the management of team resources;
- c) convening of the pre-audit and exit meetings of an audit; and
- d) submitting audit/inspection reports.

3.5 Composition of Safety Regulatory Audit/Inspection Team

3.5.1 Depending on the complexity and scale of an audit/inspection, the audit/inspection team may comprise ad-hoc auditors/inspectors which are experts with specialized background, such as Electronic Engineer, PANSOPS Instrument Flight Procedure Designer, Aeronautical Information Manager, Human Factors Specialist, etc.

3.5.2 For the purpose of training, the audit/inspection team may include trainees who are acceptable to the Lead Auditor/Inspector.

3.6 Cooperating with the Audit/Inspection Team

3.6.1 All persons/parties subject to a regulatory audit/inspection are to co-operate with the auditors/inspectors and, where necessary, provide administrative and logistic support to the audit/inspection process.

4. Scope of Safety Regulatory Audits/Inspections

4.1 Scope

4.1.1 In accordance with ICAO and ATMSO provisions in terms of ANS safety oversight, the scope of safety regulatory audits/inspections may include ATC operations, aeronautical information management, PANSOPS Instrument Flight Procedures designs, delivery of meteorological information, search and rescue operations, ATC training, Competency Assurance Programme of the ANSP, and any other aspects of the ANS systems and services.

Auditing and Inspection Principles and Procedures

5. Planning and Preparing for Safety Regulatory Audits and Inspections

5.1 Audit/Inspection Plan

5.1.1 ANSD conducts audit/inspection in accordance with a plan that normally includes pertinent audit/inspection details such as date, objective, scope, documentation, meeting arrangements, work schedule, composition of audit/inspection team and its assignments, etc.

5.2 Pre-Audit/Inspection Preparation

5.2.1 ANSD appropriately prepares each audit/inspection by addressing the purposes and scope of the audit/inspection, agenda of the pre-audit and exit meetings of a regulatory audit, expected time and duration of the audit/inspection, and the identification of reference documents and resources needed.

5.2.2 ANSD reviews, as appropriate, organizational documentation including published manuals, procedures, instructions, guidance materials, pertinent records, and any previous audit/inspection reports of the audited/inspected party. The Office may require the audited/inspected party to make relevant documents/records available before the on-site audit/inspection commences.

5.2.3 Subsequently, the Lead Auditor should organize as appropriate an internal auditors meeting to share their initial findings of the pre-audit document review. At the same time, the Lead Auditor would also highlight the areas of concern, so as to assist other auditors to better prepare themselves for the on-site audit.

5.3 Prior Notification and Deferral

5.3.1 ANSD issues prior notification to the audited/inspected party. For audits, ANSD normally serves a notification of no less than 1 month prior to the exercise, and no less than 1 week for inspections.

5.3.2 The Office may accept audit/inspection deferral requests presented in writing to ANSD, provided that there is/are compelling reason(s) for such requests.

5.4 Documentation

5.4.1 ANSD uses audit/inspection checklists that are designed in such a manner that they do not restrict additional audit/inspection activities when required.

5.4.2 ANSD should use the following documents to facilitate an audit/inspection:

- a) Checklist for evaluation;
- b) Forms for reporting on audit/inspection observations or non-compliances;
- c) Forms for the audited/inspected party to respond to auditor/inspector's observations or non-compliances;
- d) Document for recording evidence to support conclusions reached by the auditors/inspectors.

Auditing and Inspection Principles and Procedures

5.4.3 For audits, ATMSO normally provides the audited party with a copy of the checklists during pre-audit meeting, and takes measures to protect any working documents that involve confidential or proprietary information.

Auditing and Inspection Principles and Procedures

6. Procedures in Conducting Safety Regulatory Audits and Inspections

6.1 Pre-Audit/Inspection Meeting

6.1.1 The audit/inspection team normally conducts a Pre-Audit Meeting on the first day of the audit with the audited party so that both parties have an opportunity to meet and discuss on relevant details and arrangements. For inspections, ANSD may opt not to hold such a meeting.

6.1.2 The Pre-Audit Meeting, to be chaired by the Lead Auditor, shall cover the following:

- Introduction of the audit team members
- Review on audit programme including objectives and scope
- Brief introduction to auditing methods, criteria and procedures to be used
- Time, date and venue for the post-audit meeting
- Clarification of any unclear detail, if any, in respect of the audit

6.2 On-site Audits/Inspections

6.2.1 ANSD may conduct these activities in operational locations such as Control Tower/Centre, facilities such as training simulators/lecture rooms, equipment areas, or management offices. The audited/inspected party shall make necessary arrangements to facilitate such activities. Auditors/Inspectors shall, insofar as practicable, avoid causing interference to duty staff, in particular when working in operational control areas.

6.2.2 During any on-site audit/inspection, ANSD may require the presence of an accompanying officer appointed by the audited/inspected party to witness the process and to assist the auditors/inspectors whenever required.

6.3 Collection of Data/Information

6.3.1 ANSD auditor/inspector primarily collects evidence through interviews, examination of documents, observation of activities and conditions in the areas of concern, and focuses on practices against published procedures and specific regulatory requirements/standards.

6.3.2 ANSD auditor/inspector conducts other activities to complement the audit/inspection wherever needed. The auditor/inspector takes note of and investigates into any clues suggesting non-compliances which may not necessarily be covered in the checklist. The auditor/inspector also verifies information gathered through interviews as required.

6.3.3 When evidence of non-compliance is found, it shall be drawn to the attention of the audited/inspected party immediately. The accompanying officer, if provided, shall acknowledge such finding. Alternatively, the accompanying person may provide evidence to prove otherwise. Subject to the auditor assessment of the new evidence, he/she may withdraw such finding of non-compliance.

Auditing and Inspection Principles and Procedures

6.4 Documentation

6.4.1 ANSD keeps a record of all audit/inspection observations. The audit/inspection team ensures that all non-compliances are documented in a clear, concise manner and are supported by evidence.

6.4.2 Non-compliances shall be identified when anomalies are found in audited/inspected party's practices against prescribed procedures, and procedures against safety regulatory requirements/standards. The audited/inspected party shall acknowledge all observations of non-compliances in standard forms provided by ANSD.

6.4.3 ANSD conducts post audit/inspection reviews on all findings and subsequently documents such findings clearly and concisely on standard forms, samples of which are appended to this handbook.

6.5 Post-Audit/Inspection Meeting (Debrief)

6.5.1 On completion of an audit, the auditors convene a post-audit meeting with the officer in-charge of the audited party. The auditors have the discretion to either hold such meeting on the same day of the audit or choose another date for this occasion. The purpose of this meeting is to provide both the audit team and the audited party an opportunity to cover the following aspects:

- Review of the objective and scope of the audit;
- Summary of the audit activities;
- Presentation of draft findings and recommendations; and
- Post-audit actions by both the audit team and the audited party.

6.5.2 The auditors emphasize clearly safety-significant issues, if any, and ensure that all findings are understood and acknowledged by the audited party.

6.5.3 The auditors provide documented findings and recommendations to the audited party.

6.5.4 For inspections, the inspector may choose not to convene such meeting owing to the smaller scale and scope of these activities as compared to those of audits.

6.6 Handling of Findings and Recommendations

6.6.1 Findings and Recommendations

ANSD auditor/inspector documents all audit/inspection findings that should include ANS system strengths, weaknesses or non-compliances with prescribed procedures/instructions. Recommendations, if any, shall also be documented by the auditor/inspector. The audited/inspected party should address such findings and associated recommendations, so as to enhance ANS services safety or, under some circumstances, services quality. Different types of standard forms, as attached as Appendices to this Handbook, shall be used to record audit/inspection findings and recommendations.

Auditing and Inspection Principles and Procedures

6.6.2 System Weakness

ANSD auditor/inspector issues an **Observation** (OBN), using standard *Form DCA SOI-1*, when an ANS system weakness is noted. Such weakness may include, but not limited to, system or procedure defect or deficiency. While it is not mandatory for the audited/inspected party to follow the recommendation(s) given by the auditor/inspector, it is a requirement for them to notify ATMSO of their views and/or responses to an OBN by completing the overleaf of *Form DCA SOI-1* and return it to ANSD.

6.6.3 Non-Compliance

In the context of this Handbook, non-compliance refers to “the state of NOT fulfilling the ICAO SARPs, the relevant legislation, safety regulatory requirements, or the procedures/instructions stipulated in various documents/manuals, including SMS documents, issued by the ANS providers of Hong Kong. When non-compliance is noted during an audit/inspection, one of the following courses of action shall be taken:-

- a) **Request for Corrective Action** – The ANSD auditor/inspector raises a Request for Corrective Action (RCA), using standard *Form DCA SOI-2*, when a non-compliance as mentioned above has been noted. The document reference relating to such non-compliance shall be indicated in the form. This type of notification normally requires investigation and followed by corrective actions by the audited/inspected party. The audited/inspected party shall use the overleaf of standard *Form DCA SOA-1* to document the corrective action(s) planned/taken and notify ANSD accordingly.
- b) **Safety Notification** – The ANSD auditor/inspector serves a Safety Notification (SAN), using standard *Form DCA SOI-3*, to the audited/inspected party when non-compliance of a **serious** nature that has direct adverse impact on ANS safety has been observed. A SAN is a particular type of Request for Corrective Action that requires **immediate** corrective action(s) to be taken by the audited/inspected party. Corresponding corrective action(s) planned/taken shall be documented on the overleaf of standard *Form DCA SOI-3* and forwarded to ANSD.

6.7 Corrective Action Plan (CAP)

6.7.1 Basing on the audit/inspection findings and recommendations, the audited party shall establish a corrective action plan (CAP) which defines immediate short-term remedial actions, if applicable, and/or long-term corrective actions planned.

6.7.2 CAP, except for Safety Notifications that require immediate action by the audited/inspected party, should normally be forwarded to ANSD within **four** weeks upon receipt of the audit/inspection report. Further, the audited/inspected party should nominate reasonable action due date(s) by which corrective action(s) is/are to be completed. Reason(s) should be given when the above action due date cannot be projected.

Auditing and Inspection Principles and Procedures

7. Final Report, Follow-Up and Review

7.1 Report Preparation and Submission

7.1.1 After concluding an audit/inspection, the auditor/inspector prepares a final report, which shall be forwarded to the Head of the audited/inspected party within four weeks (under cover memo issued by ADG (AES)). The report should also be appended with audit/inspection standard forms to indicate observations and/or non-compliances, if any, and the audited/inspected party should acknowledge receipt of the report as soon as practicable.

7.1.2 For inspection reports, the inspector should normally use standard *Forms DCA SOI-4 series, DCA SOI-5 and DCA SOI-6*, as appropriate.

7.1.3 As regards the audit reports, they should normally be presented in narrative form, reflecting faithfully on the content of the audit. Such reports should normally contain the following items as applicable:

- a) Scope, objectives and criteria of the audit;
- b) Details of the audit preparation and the identification of people involved;
- c) Identification of reference documents reviewed during the audit;
- d) Details of non-compliances noted during the audit and the associated corrective action plan, if any, of the audited party;
- e) Records, if any, of the pre-audit and post-audit meeting.

7.2 Follow-Up

7.2.1 When a final report is received, the audited/inspected party shall determine the appropriate CAP to improve upon the system weaknesses or to correct any non-compliances that are identified in the audit/inspection.

7.2.2 It is incumbent upon the audited/inspected party to complete all corrective actions by the action due date nominated. The audited/inspected party shall also document all corrective actions taken, which are subject to post-audit/inspection review as mentioned below.

7.3 Post-Audit/Inspection Review

7.3.1 ANSD and the audited/inspected party shall jointly conduct post-audit/inspection reviews with the following objectives:

- a) to monitor the progress on the implementation of a CAP, and
- b) to verify the effectiveness of the corrective actions.

Auditing and Inspection Principles and Procedures

7.3.2 For audits, a review on follow-up actions shall be conducted normally 12 months after an audit. For inspections, an annual review on follow-up actions subsequent to all inspections conducted during a calendar year shall be held at a mutually agreeable date. Such reviews shall be reported to the senior management of the respective Divisions and properly documented.



ANSD Safety Regulatory Audit/Inspection Observation (OBN)

OBN No.: _____

Date: _____

Audited/Inspected Party: _____

Name/Post of Responsible Officer: _____

Observations and Recommendations:

Auditor/Inspector

Date:

Signature: _____

Name: _____



ANSD Safety Regulatory Audit/Inspection RESPONSE to OBSERVATION

Response No.: _____

Responding to OBN No.: _____ Dated _____

Action(s) Taken/Planned:

Name/Post of Responding Officer: _____

Signature: _____ Date: _____

Verification *(For use by ANSD)*

Comments:

Signature and Name
of Auditor/Inspector: _____ Date: _____

DCA SOI-1



Appendix 1

ANSD Safety Regulatory Audit/Inspection REQUEST FOR CORRECTIVE ACTION (RCA)

RCA No.: _____ Date: _____

Audited/Inspected Party: _____

Name/Post of Responsible Officer: _____

Non-compliant Item: _____

Document Reference: _____

Details of Non-Compliance:

Auditor/Inspector:

Date:

Signature: _____

Name: _____

DCA SOI-2



Appendix 1

**ANSD Safety Regulatory Audit/Inspection
RESPONSE
to
REQUEST FOR CORRECTIVE ACTION**

Response No.: _____

Responding to RCA No.: _____ Dated _____

Remedial Action(s): *(Short-term Fix)*

Corrective Action(s): *(Long-term Solution)*

Action Due Date(s):

Name/Post of Responding Officer: _____

Signature: _____ Date: _____

Verification *(For use by ANSD)*

<p>Auditor/Inspector:</p> <p>Signature: _____</p> <p>Name: _____</p>	<p>Date:</p>
---	--------------

DCA SOI-2



ANSD Safety Regulatory Audit/Inspection **SAFETY NOTIFICATION (SAN)**

SAN No.: _____ Date: _____

Audited/Inspected Party: _____

Name/Post of Responsible Officer: _____

Non-Compliance Item: _____

Document Reference: _____

Details of Non-Compliance:

Action Due Date: IMMEDIATE ACTION REQUIRED

Auditor/Inspector:

Signature: _____

Name: _____

Date:

DCA SOA-3



**ATMSO Safety Regulatory Audit/Inspection
RESPONSE
to
SAFETY NOTIFICATION (SAN)**

Response No.: _____

Responding to SAN No.: _____

Dated _____

Remedial Action(s): *(Short-term Fix)*

Corrective Action(s): *(Long-term Solution)*

Action Due Date(s):

Name/Post of Responding Officer: _____

Signature: _____ Date: _____

Verification *(For use by ANSD)*

Auditor/Inspector:

Signature: _____

Name: _____

Date:

DCA SOI-3



ANSD Inspection Report Facilities Inspection / Operations Inspection

Date/Time and Location:

Type of Inspection: Aerodrome Control Tower

Inspection Ref. No. :

Name/Designation of Inspector:

*Note: S = Satisfactory, I = Improvement Needed, NA = Not Applicable

1. Personnel	S	I	NA
1.1 A list of rated controllers deployed at your aerodrome control tower			
1.2 Aerodrome control tower rated controllers licensed in accordance with DGCA MCAR Part 5, Section 4 requirements			
1.3 Manning of control position.			
1.4 On the job training			
1.5 The responsibility of chief aerodrome control tower, ATC supervisor, ATC check controller and OJT Instructors			
1.6 The minimum requirements for a controller to be appointed as an ATC supervisor, ATC check controller and OJT Instructors			
1.7 Validation assessments for ATC Licensing			
1.8 The last refresher course for Aerodrome controllers			
2. Equipments:			
2.1 A master list of all equipment			
2.2 A list of personnel to contact in the event of equipment failure			
2.3 Records of equipment's serviceability and calibration maintained.			
2.4 Responsible Person for conducting checks on the serviceability of equipment at your aerodrome control tower.			
2.5 Regular checks carried out			

DCA SOI-4 A

3. Aerodrome Ground Aids	S	I	NA
3.1 What are the procedures with regard to the operations of aeronautical ground lights, such as approach lighting, runway lighting and taxiway lighting? 3.2 Who conducts the inspection of aeronautical ground lights? 3.3 What actions have to be taken when the aeronautical ground lights are unserviceable?			
4 ILS, Lights for CAT I Operations:			
4.1 Who does the monitoring of ILS and Approach/Runway lights to ensure CAT I/II requirements are met? 4.2 How often are serviceability checks made on the PAPI?			
5. Signal lamp:			
5.1 Are there signal lamps at your aerodrome control tower? 5.2 How is the service ability of the signal lamp maintained?			
6. Time Check			
6.1 How is time-check done and how often?			
7. Weather Equipments			
7.1 Are there Wind Direction / wind speed Sensors at your Aerodrome control tower or at Runway? 7.2 Is there Barometer at your Aerodrome Control Tower? 7.3 How often calibration made on the Weather Equipments?			
8. Communication/Navigation/Surveillance facilities and other Equipments			
8.1 VHF communication Equipments, Intercom and telephone 8.2 Radar display for Aerodrome and Approach 8.3 Monitoring system for Navigation Aids 8.4 Is there any Crash Fire Alarm at Aerodrome Control tower?			

9. Aeronautical mobile services (air-ground communications)	S	I	NA
<p>9.1 Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between an aerodrome control tower and appropriately equipped aircraft operating at any distance within 45 km (25 NM) of the aerodrome concerned Where conditions warrant, separate communication channels should be provided for the control of traffic operating on the manoeuvring area.</p> <p>9.2 When direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control service, recording facilities shall be provided on all such air-ground communication channels</p>			
10. Surface movement control service			
<p>10.1 Communications for the control of vehicles other than aircraft on manoeuvring areas at controlled aerodromes.</p> <p>10.2 Two-way radiotelephony communication facilities shall be provided for aerodrome control service for the control of vehicles on the manoeuvring area, except where communication by a system of visual signals is deemed to be adequate.</p> <p>10.3 Where conditions warrant, separate communication channels shall be provided for the control of vehicles on the manoeuvring area. Automatic recording facilities shall be provided on all such channels.</p> <p>10.4 Recordings of communications as required and shall be retained for a period of at least thirty days</p>			
11. Meteorological information			
<p>11.1 Aerodrome control towers</p> <p>a) Aerodrome control towers shall be supplied with meteorological information as described in Annex 3, Appendix 9, 1.1 for the aerodrome with which they are concerned. Special reports and amendments to forecasts shall be communicated to the aerodrome control towers as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast.</p> <p>b) Aerodrome control towers shall be provided with current pressure data for setting altimeters for the aerodrome concerned.</p> <p>c) Aerodrome control towers shall be equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists. Where multiple sensor(s) are used, the displays to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each sensor.</p> <p>d) Aerodrome control towers at aerodromes where runway visual range values are measured by instrumental means shall be equipped with display(s) permitting read-out of the current runway visual range value(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.</p> <p>e) Aerodrome control towers at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.</p> <p>f) Aerodrome control towers shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach and aircraft on the runway during the landing roll or take-off run.</p> <p>11.2 Aerodrome control towers and/or other appropriate units should be supplied with aerodrome warnings.</p>			

12. Operational flight information service broadcasts	S	I	NA
<p>12.1 Voice-automatic terminal information service (Voice-ATIS) broadcasts.</p> <p>Voice-automatic terminal information service (Voice-ATIS) broadcasts shall be provided at aerodromes where there is a requirement to reduce the communication load on the ATS VHF air-ground communication channels</p>			
13. Procedure:			
<p>13.1 What is the procedure for selection of runway in use?</p> <p>13.2 What are the actions required before issuing take-off or landing clearance?</p> <p>13.3 What preventive measures are in place following an incident involving aircraft incursions of runway?</p> <p>13.4 Are opposite direction operations allowed?</p> <p>13.5 When are airfield inspections conducted?</p> <p>13.6 Who conducts airfield inspections?</p> <p>13.7 What are response procedures when debris is found on the runway?</p> <p>13.8 What is the procedure to follow when foreign objects suspected to be from aircraft are reported on the runway or taxiway?</p> <p>13.9 What action should be taken when there is a bird strike or kite strike report?</p> <p>13.10 How are the procedures for low visibility operations?</p> <p>13.11 How are the procedure for aircraft starting engine, pushing back and taxiing?</p> <p>13.12 How are the procedures for change duty?</p> <p>13.13 How are the procedures of communication failure?</p> <p>13.14 How are the procedures of coordination with other ATS unit?</p> <p>13.15 How are the procedure for separation in the vicinity of aerodromes</p> <p>13.16 How are the procedures for control of aerodrome traffic?</p> <p>13.17 How are the procedures for control of traffic in the traffic circuit?</p> <p>13.18 How are the procedures for reduced runway separation minima between aircraft using the same runway?</p> <p>13.18 How are the procedures for suspension of visual flight rules operations?</p> <p>13.20 How are the procedures for authorization of special VFR flights?</p> <p>13.21 What are the contingency plan and alerting services in your aerodrome control tower?</p>			



ANSD Inspection Report Facilities Inspection / Operations Inspection

Date/Time and Location:

Type of Inspection: Approach Control Unit

Inspection Ref. No. :

Name/Designation of Inspector:

*Note: S = Satisfactory, I = Improvement Needed, NA = Not Applicable

1. Personnel	S	I	NA
1.1 Is there a list of rated controllers deployed at your Approach control Unit?			
1.2 Are your aerodrome control tower rated controllers licensed in accordance with DGCA MCAR Part 69 requirements?			
1.3 Who is responsible to ensure the correct manning of control position?			
1.4 Are control positions in your Approach control unit manned accordingly?			
1.5 On the job training (Briefly explain the process of conducting on the job training at your approach control unit.)			
1.6 What are the responsibility of chief approach control unit, ATC supervisor, ATC check controller and OJT Instructors?			
1.7 Are the minimum requirements for a controller to be appointed as an ATC supervisor, ATC check controller and OJT Instructors met?			
1.8 How do you liaise with standards unit for the conduct of validation assessments?			
1.9 When was the last refresher course for your controllers conducted?			
2 . Eqiptments			
2.1 Is there a master list of all equipment at your approach control unit?			
2.2 Is there a list of personnel to contact in the event of equipment failure?			
2.3 How are records of equipment's serviceability and calibration maintained?			
2.4 Who is responsible for conducting checks on the serviceability of equipment at your approach control unit?			
2.5 How often are these checks carried out?			
3. Aeronautical mobile services (air-ground communications)			
3.1 For approach control service			
a) Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between the unit providing approach control service and appropriately equipped aircraft under its control.			

	S	I	NA
<p>b) Where the unit providing approach control service functions as a separate unit, air-ground communications shall be conducted over communication channels provided for its exclusive use.</p> <p>3.2 When direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control service, recording facilities shall be provided on all such air-ground communication channels</p>			
4. Meteorological information			
<p>4.1 Units providing approach control service</p> <p>a) Units providing approach control service shall be supplied with meteorological information as described in Annex 3, Appendix 9, 1.2 for the airspace and the aerodromes with which they are concerned. Special reports and amendments to forecasts shall be communicated to the units providing approach control service as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast. Where multiple anemometers are used, the indicators to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each anemometer.</p> <p>b) Units providing approach control service shall be provided with current pressure data for setting altimeters, for locations specified by the unit providing approach control service.</p> <p>c) Units providing approach control service for final approach, landing and take-off shall be equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.</p> <p>d) Units providing approach control service for final approach, landing and take-off at aerodromes where runway visual range values are assessed by instrumental means shall be equipped with display(s) permitting read-out of the current runway visual range value(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding displays in the aerodrome control tower and in the meteorological station, where such a station exists.</p> <p>e) Units providing approach control service for final approach, landing and take-off at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.</p> <p>f) Units providing approach control service for final approach, landing and take-off shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach.</p>			
5. Establishment and identification of ATS routes			
<p>5.1 Standard departure and arrival routes and associated procedures shall be identified in accordance with the principles set forth in Appendix 3 of SMM-ATS.</p>			
6. Procedures			
<p>6.1 How are the procedure for coordination with other ATS unit?</p> <p>6.2 How are the procedure of flight plan?</p> <p>6.3 How are the procedure for air traffic control clearances?</p>			

	S	I	NA
6.4 How are the procedure for horizontal speed control instructions?			
6.5 How are the procedure for vertical speed control instructions?			
6.6 How are the procedure for change from IFR to VFR flight?			
6.7 How are the procedure for communication failure?			
6.8 How are the procedure for wake turbulence?			
6.9 How are the procedure for altimeter setting?			
6.10 How are the procedure for position reporting?			
6.11 How are the procedure for reporting of operational and meteorological information?			
6.12 How are the procedure for presentation and updating of flight plan and control data?			
6.13 How are the procedure for failure or irregularity of systems and equipment?			
6.14 How are the data link communication initiation procedures?			
6.15 How are the procedure for separation methods and minima in your approach control services?			
6.16 How are the procedure for change duty?			
6.17 What are the contingency plan and alerting services in your approach control unit?			
7. Documents			
7.1 How many copies of Air Traffic Services Manual (ATSM) are there at your approach control unit?			
7.2 Who is responsible for update of ATSM?			
7.3 Is there a file for the chief approach control unit to record details of aircraft missed approach incident / ats incident, aircraft serious incident and accident?			
7.4 Is there a file for the chief approach control unit to record details of equipment test result?			
7.5 How many copies of Myanmar Regulation (Aviation Act, Government Degree, Minister Degree and DG Degree, and other DGCA safety circular) are there at your approach control unit? And who is responsible for update?			
7.6 How many copies of ATS Operational Coordination Agreements between ATS units are there at your approach unit? And who is responsible for update?			



ANSD Inspection Report Facilities Inspection / Operations Inspection

Date/Time and Location:

Type of Inspection: Aera Control Centre

Inspection Ref. No. :

Name/Designation of Inspector:

*Note: S = Satisfactory, I = Improvement Needed, NA = Not Applicable

1. Personnel	S	I	NA
1.1 Is there a list of rated controllers deployed at your Area Control Center?			
1.2 Are your Area Control Center rated controllers licensed in accordance with DGCA MCAR Part 4 requirements?			
1.3 Who is responsible to ensure the correct manning of control position?			
1.4 Are control positions in your Area Control Center manned accordingly?			
1.5 On the job training (Briefly explain the process of conducting on the job training at your Area Control Center)			
1.6 What are the responsibility of chief Area Control Center, ATC supervisor, ATC check controller and OJT Instructors?			
1.7 Are the minimum requirements for a controller to be appointed as an ATC supervisor, ATC check controller and OJT Instructors met?			
1.8 How do you liaise with standards unit for the conduct of validation assessments?			
1.9 When was the last refresher course for your controllers conducted?			
2. Equipment			
2.1 Is there a master list of all equipment at your area control center?			
2.2 Is there a list of personnel to contact in the event of equipment failure?			
2.3 How are records of equipment's serviceability and calibration maintained?			
2.4 Who is responsible for conducting checks on the serviceability of equipment at your area control center?			
2.5 How often are these checks carried out?			

DCA SOI-4 C

3. Procedure:	S	I	NA
3.1 How are the procedure for coordination with other ATS unit? 3.2 How are the procedure of flight plan? 3.3 How are the procedure for air traffic control clearances? 3.4 How are the procedure for horizontal speed control instructions? 3.5 How are the procedure for vertical speed control instructions? 3.6 How are the procedure for communication failure? 3.7 How are the procedure for wake turbulence? 3.8 How are the procedures for altimeter setting? 3.9 How are the procedures for position reporting? 3.10 How are the procedures for reporting of operational and meteorological information? 3.11 How are the procedure for presentation and updating of flight plan and control data? 3.12 How are the procedure for failure or irregularity of systems and equipment? 3.13 How are the data link communication initiation procedures? 3.14 How are the procedure for separation methods and minima in your area control centre? 3.15 How is the procedure for change duty? 3.16 What are the contingency plan and alerting services in your area control center?			
4. Documents			
4.1 How many copies of Air Traffic Services Manual (ATSM) are there at your area control center? 4.2 Who is responsible for update of ATSM? 4.3 Is there a file for the chief area control centre to record details of aircraft incident / ats incident, aircraft serious incident and accident? 4.4 Is there a file for the chief area control center to record details of equipment test result? 4.5 How many copies of Myanmar Regulation (Aviation Act, Government Degree, Minister Degree and DG Degree, and other DGCA safety circular) are there at your area control center? And who is responsible for update? 4.6 How many copies of ATS Operational Coordination Agreements between ATS units are there at your area control center? And who is responsible for update?			
5. Aeronautical mobile services (air-ground communications)			
5.1 Radiotelephony and/or data link shall be used in air-ground communications for air traffic services purposes. Requirements for ATS units to be provided with and to maintain guard on the emergency channel 121.5 MHz are specified in ICAO Annex 10, Volumes II and V.			

	S	I	NA
<p>5.2 Where RCP types have been prescribed by States for ATM functions, ATS units shall, in addition to the requirements specified in a), be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP type(s).</p> <p>5.3 When direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control service, recording facilities shall be provided on all such air-ground communication channels. Requirements for retention of all automatic recordings of communications in ATC are specified in ICAO Annex 10, Volume II, 3.5.1.5.</p> <p>5.4 Recordings of communications channels as required in paragraph c) shall be retained for a period of at least thirty days.</p> <p>5.5 Air-ground communication facilities shall enable two-way communications to take place between a unit providing area control service and appropriately equipped aircraft flying anywhere within the control area(s).</p> <p>5.6 Whenever practicable, air ground communication facilities for area control service should permit direct, rapid, continuous and static-free two-way communications.</p> <p>5.7 Where air-ground voice communication channels are used for area control service and are worked by air-ground communicators, suitable arrangements should be made to permit direct pilot-controller voice communications, as and when required.</p>			
6. Aeronautical fixed service (ground-ground communication)			
<p>6.1 Direct-speech and/or data link communications shall be used in ground-ground communications for air traffic services purposes.</p> <p>(i) Indication by time of the speed with which the communication should be established is provided as a guide to communication services, particularly to determine the types of communication channels required, e.g. that "instantaneous" is intended to refer to communications which effectively provide for immediate access between controllers; "fifteen seconds" to accept switchboard operation and "five minutes" to mean methods involving retransmission.</p> <p>(ii) Requirements for retention of all automatic recordings of communications in ATC are specified in ICAO Annex 10, Volume II, and 3.5.1.5.</p> <p>6.2 Where RCP types have been prescribed by States for ATM functions, ATS units shall, in addition to the requirements specified in paragraph (a), be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP type(s).</p> <p>6.3 Communication within a flight information region Communications between air traffic services units An area control centre, in addition to being connected to the flight information centre shall have facilities for communications with the following units providing a service within its area of responsibility: (a) approach control units; (b) aerodrome control towers; (c) air traffic services reporting offices, when separately established</p> <p>6.4 Communications between air traffic services units and other units</p> <p>A flight information centre and an area control centre shall have facilities for communications with the following units providing a service within their respective area of responsibility:</p> <p>(a) appropriate military units; (b) the meteorological office serving the centre; (c) the aeronautical telecommunications station serving the centre; (d) appropriate operator's offices; (e) the rescue coordination centre or, in the absence of such centre, any other appropriate emergency service; (f) the international NOTAM office serving the centre.</p>			

7. Description of communication facilities	S	I	NA
<p>7.1 communications by direct speech alone, or in combination with data link communications, whereby for the purpose of transfer of control using radar or ADS-B, the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and</p> <p>7.2 printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes</p> <p>7.3 All facilities for direct-speech or data link communications between air traffic services units and between air traffic services units and other units shall be provided with automatic recording.</p> <p>Recordings of data and communications shall be retained for a period of at least thirty days.</p>			
8. Aeronautical radio navigation service			
<p>8.1 Automatic recording of surveillance data</p> <p>(i) Surveillance data from primary and secondary radar equipment or other systems (e.g. ADS-B, ADS-C), used as an aid to air traffic services, shall be automatically recorded for use in accident and incident investigations, search and rescue, air traffic control and surveillance systems evaluation and training.</p> <p>(ii) Automatic recordings shall be retained for a period of at least thirty days. When the recordings are pertinent to accident and incident investigations, they shall be retained for longer periods until it is evident that they will no longer be required</p>			
9. Meteorological information			
<p>9.1 Direct-speech and/or data link communications shall be used in ground-ground communications for air traffic services purposes.</p> <p>(i) Indication by time of the speed with which the communication should be established is provided as a guide to communication services, particularly to determine the types of communication channels required, e.g. that “instantaneous” is intended to refer to communications which effectively provide for immediate access between controllers; “fifteen seconds” to accept switchboard operation and “five minutes” to mean methods involving retransmission.</p> <p>(ii) Requirements for retention of all automatic recordings of communications in ATC are specified in ICAO Annex 10, Volume II, and 3.5.1.5.</p> <p>9.2 Flight information centres and area control centres;</p> <p>a) Flight information centres and area control centres shall be supplied with meteorological information as described in Annex 3, Appendix 9, 1.3, particular emphasis being given to the occurrence or expected occurrence of weather deterioration as soon as this can be determined. These reports and forecasts shall cover the flight information region or control area and such other areas as may be determined on the basis of regional air navigation agreements.</p> <p>b) Flight information centres and area control centres shall be provided, at suitable intervals, with current pressure data for setting altimeters, for locations specified by the flight information centre or area control centre concerned.</p>			
10. Information concerning volcanic activity			
<p>10.1 ATS units shall be informed, in accordance with local agreement, of pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud which could affect airspace used by flights within their area of responsibility.</p> <p>10.2 Area control centres and flight information centres shall be provided with volcanic ash advisory information issued by the associated VAAC</p>			

11. ATS Operational Requirements	S	I	NA
<p>11.1 At all ATS units, the controller must be provided with a suitable environment and appropriate equipment.</p> <p>11.2 The environment should be safe and comfortable and should afford protection from the elements as well as adequate heating, ventilation and, where required by climatologically conditions, air-conditioning.</p> <p>11.3 Operating space should be ample without being spacious. Controllers should be able to work at their positions without physical discomfort, e.g. chairs should be strong and comfortable while providing proper back support be adjustable in height, and easily movable.</p> <p>11.4 The environment should be sufficiently free from noise so as to be conducive to mental concentration.</p> <p>11.5 Appropriate equipment includes those items which enhance the controller's ability to see and to communicate with aircraft, his colleagues, other ATS units, maintenance personnel, other aviation agencies or bodies, e.g. airlines or military authorities and supporting services such as meteorological (MET), aeronautical information service (AIS), etc. Typical items in this respect are lighting facilities, radio and telephone.</p> <p>11.6 In all structures, a dual-purpose elevator should be included to be used by personnel and for freight lifting purposes. Space allocated for each function or item of equipment should be ample with reasonable allowance for expansion.</p> <p>11.7 There should be provisions for emergency exits from all personnel areas. In addition, buildings should be provided with lightning protection, emergency lighting, fire alarm and extinguishing systems and security systems.</p>			
12. AIR TRAFFIC SERVICES INCIDENT REPORTING AND INVESTIGATION			
<p>12.1 The state of occurrence shall take all reasonable measure to protect the evidence and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purpose of an investigation;</p> <p>12.2 A Serious occurrence involving air traffic such as an aircraft proximity (AIRPROX) or a serious difficulty caused by faulty procedures, or the lack of compliance with applicable procedures or the failure of ground facility resulting in hazard to aircraft shall be investigated;</p> <p>12.3 Reporting of air traffic incidents and ATS investigating procedures should be established in order to ensure safety and high standards in the conduct and control of air traffic.</p>			
13. (Radar service) Radar Equipment:			
<p>13.1 Is there a list of radar equipment?</p> <p>13.2 Is there a list of personnel to contact in the event of radar equipment failure?</p> <p>13.3 How are records of radar equipment's serviceability and calibration maintained?</p> <p>13.4 Who is responsible for conducting checks on the serviceability of radar equipment?</p> <p>13.5 How often are these checks carried out?</p>			
14. (Radar service) Radar System Capabilities:			
<p>14.1 What is the back-up facilities?</p> <p>14.2 Are your multi-radar system capable to receive, process and display, in an integrated manner, data from all the connected sensors?</p>			

14.3 Are your radar system capable to integrated with other automated systems used in the provision of ATS?			
14.4 Are your radar system can provide for the display of safety-related alerts and warning, including conflict alert, minimum safe altitude warning, conflict prediction and unintentionally duplicated SSR codes?			
14.5 Briefly explain the radar coverage?			
14.6 Briefly explain the Primary Surveillance Radar (PSR) and Secondary Surveillance Radar (SSR) System?			
14.7 Briefly explain when PSR and SSR are required to be used in combination?			
15. (Radar service) Presentation for Radar Information:	S	I	NA
15.1 Are you radar-deirved information available for controller to display radar position indications, radar map information, information from SSR mode A, Mode C and Mode S?			
15.2 Are your presentation of radar information continuously updated?			
15.3 Briefly explain radar position indications.			
15.4 Are your presentation of radar information use distinct sysmbols?			
15.5 Are your presentation of radar information reserved SSR codes, including 7500, 7600 and 7700, operations of IDENT, safety-related alerts and warnings as well as information related to automated coordination?			
15.6 Are your presentation of radar information use radar labels?			
15.7 Are the radar label information include the SSR code transmitted by an aircraft?			
15.8 Are the radar labels associated with their radar position indications?			
16. (Radar service) Communications			
16.1 Is there back-up facilities for communication systems?			
16.2 How is the direct pilot-controller communications?			
17. (Radar service) Provision of Radar service			
17.1 How are the structural complexities of the control area or sector concerned?			
17.2 Briefly explain the radar functions to be performed within the control area or sector concerned.			
17.3 How are assessments of controller workloads and sector capacity?			
17.4 Briefly explain the degree of technical reliability and availability of the main radar and communications system.			
17.5 Briefly explain the possibility of a radar equipment failure or other emergency that would eventually require reverting to back-up facilities and/or non-radar separation			
17.6 Briefly explain the degree of technical reliability and availability of the back-up radar and communication systems.			
18. (Radar service) Use of SSR Transponders			
18.1 What is the procedure for use of SSR transponders?			
18.2 What is the standard radiotelephony phraseology?			

18.3	How many times to correct setting of transponder codes?			
18.4	Briefly explain the SSR code management.			
18.5	Briefly explain the operation of SSR transponders.			
18.6	Briefly explain the level information based on the use of Mode C, including verification of accuracy of mode C-derived level information and determination of level occupancy.			
19. (Radar service) : General Radar Procedures		S	I	NA
19.1	What is the procedure for radar controller to adjust the radar display(s) and carry out adequate checks on the accuracy thereof?			
19.2	Who is responsible for available functional capabilities of the radar system for satisfying the radar controller?			
19.3	What is the procedure for radar controller to report any fault in the equipment, or any incident requiring investigation, or any circumstances which make it difficult or impractical to provides radar services?			
19.4	What is the procedure for identification of aircraft? (<i>establishment of radar identification, SSR identification procedures, PSR identification procedures</i>)			
19.5	What is the procedure for transfer of radar identification?			
19.6	What is the procedure for position information?			
19.7	What is the procedure for radar vectoring?			
19.8	What is the procedure for navigation assistance?			
19.9	What is the procedure for interruption or termination of radar service?			
19.10	What is the procedure for minimum levels?			
19.11	What is the procedure for information regarding adverse weather?			
19.12	What is the procedure for reporting of significant meteorological information to meteorological offices?			
19.13	What is the procedure of automated coordination when using radar services?			
20. (Radar service) : Use of Radar in Air traffic Services				
20.1	What is the function of the information presented on your radar display?			
20.2	What is the coordination procedure of traffic under radar and non-radar control?			
20.3	How is the separation application?			
20.4	Briefly explain radar separation minima in your approach/area control unit.			
20.5	What is the procedure for transfer of radar control?			

<p>21. (Radar service) : Emergencies, Hazards and Equipment Failures:</p>			
<p>21.1 What is the procedure for aircraft in emergency?</p> <p>21.2 Briefly explain the collision hazard information.</p> <p>21.3 What is the procedure for failure of equipment? (<i>aircraft radio transmitter failure, complete aircraft communication failure, aircraft transponder failure in areas where the carriage of a functioning transponder is mandatory</i>)</p> <p>21.4 What is the procedure for radar equipment failure?</p> <p>21.5 What is the procedure for ground radio failure?</p>			
<p>22. (Radar service) : Use of Radar in Approach Control Service</p>	S	I	NA
<p>22.1 What is the general procedure for approach radar?</p> <p>22.2 What is the procedure of vectoring to pilot-interpreted final approach aid?</p> <p>22.3 What is the procedure of vectoring for visual approach?</p> <p>22.4 What is the procedure for final approach?</p>			
<p>23. (Radar service) : Use of Radar in Aerodrome Control Services</p>			
<p>23.1 Briefly explain the function of surveillance radar in the aerodrome control services.</p> <p>23.2 Briefly explain the function of use of surface movement radar (SMR).</p> <p>23.3 What is the procedure for identification of aircraft using SMR?</p>			
<p>24. (Radar service) : Use of Radar in Flight Information Service</p>			
<p>24.1 Are the information presented on your radar display available to provide identified aircraft with information regarding any aircraft observed to be on a conflicting path with the radar-identified aircraft and suggestions or advice regarding avoiding action?</p> <p>24.2 Are the information presented on your radar display available to provide identified aircraft with information on the position of significant weather and, as practicable, advice to the aircraft on how best to circumnavigate any such areas of adverse weather?</p> <p>24.3 Are the information presented on your radar display available to provide identified aircraft with information to assist the aircraft in its navigation?</p> <p>24.4 What is the procedure for radar air traffic advisory service?</p>			
<p>25. Time-check</p>			
<p>25.1 How is time-check done and how often?</p>			



ANSD Inspection Report Facilities Inspection / Operations Inspection

Date/Time and Location:

Type of Inspection: Flight Information Services Unit

Inspection Ref. No. :

Name/Designation of Inspector:

*Note: S = Satisfactory, I = Improvement Needed, NA = Not Applicable

1. Personnel	S	I	NA
1.1 Is there a list of Flight Information Service Officer deployed at your Flight Information Services Unit?			
1.2 Are your Flight Information Services Officer licensed in accordance with DGCA MCAR Part 69 requirements?			
1.3 Who is responsible to ensure the correct manning of control position?			
1.4 Are control positions in your Flight Information Services Unit manned accordingly?			
1.5 On the job training (Briefly explain the process of conducting on the job training at your Flight Information Services Unit)			
1.6 What are the responsibility of chief Flight Information Services Unit , supervisor, and OJT Instructors?			
1.7 Are the minimum requirements for a FIS officer to be appointed as supervisor, and OJT Instructors met?			
1.8 How do you liaise with standards unit for the conduct of validation assessments?			
1.9 When was the last refresher course for your FIS officer conducted ?			
2. Equipment			
2.1 Is there a master list of all equipment at your Flight Information Services Unit?			
2.2 Is there a list of personnel to contact in the event of equipment failure?			
2.3 How are records of equipment's serviceability and calibration maintained ?			
2.4 Who is responsible for conducting checks on the serviceability of equipment at your Flight Information Services Unit?			
2.5 How often are these checks carried out?			

3. Procedure			
<p>3.1 How are the procedure for coordination with other ATS unit?</p> <p>3.2 How are the procedure of flight plan?</p> <p>3.3 How are the procedure for communication failure?</p> <p>3.4 How are the procedures for altimeter setting?</p> <p>3.5 How are the procedures for position reporting?</p> <p>3.6 How are the procedures for reporting of operational and meteorological information?</p> <p>3.7 How are the procedure for presentation and updating of flight plan and control data?</p> <p>3.8 How are the procedure for failure or irregularity of systems and equipment?</p> <p>3.9 How are the data link communication initiation procedures?</p> <p>3.10 How are the procedure for air traffic advisory service?</p> <p>3.11 How are the procedure for alerting services for aircraft?</p> <p>3.12 How are the procedure for alerting services for air traffic services unit?</p> <p>3.13 How is the procedure for change duty?</p> <p>3.14 What are the contingency plan in your flight information services unit?</p> <p>3.15 What are the contingency plan and alerting services in your area control center?</p>			
4. Documents			
<p>4.1 How many copies of Air Traffic Services Manual (ATSM) are there at your flight information services unit?</p> <p>4.2 Who is responsible for update of ATSM?</p> <p>4.3 Is there a file for the chief your flight information services unit to record details of aircraft incident / ATS incident, aircraft serious incident and accident?</p> <p>4.4 Is there a file for the chief your flight information services unit to record details of equipment test result?</p> <p>4.5 How many copies of Myanmar Regulation (Aviation Act, Government Degree, Minister Degree and DG Degree, and other DGCA safety circular) are there at your flight information services unit? And who is responsible for update?</p> <p>4.6 How many copies of ATS Operational Coordination Agreements between ATS units are there at your flight information services unit? And who is responsible for update?</p>			



ANSD Inspection Report Facilities Inspection / Operations Inspection

Date/Time and Location:

Type of Inspection: Communication, Navigation, Surveillance (CNS)

Inspection Ref. No. :

Name/Designation of Inspector:

Item	Description	1	2	3	4	5	Remark
1	SAFETY EQUIPMENT: - FIRE EXTINGUISHER - FIRST AID KIT - INTERCOM/ TELEPHONE SYSTEM - RUBBER FLOOR MAT - EMEERGENCY SIGNS - BREAKER PANEL - EMERGENCY POWER UNIT - WORKBENCH - TOOL KIT - TEST EQUIPMENT						
2	SITE APPEARANCE: - CLEANLINESS - TIDINESS - LIGHT SYSTEM - ENVIRONMENT OUTSIDE - ANTENNA TOWER LIGHT						
3	DOCUMENTATION - STORAGE CABINENT / SHELVE - LOG BOOK - REFERENCE MANUAL - MANUFACTURER’S MANUAL - STANDARD MANUAL - INITIAL INSTALLATION READIGS - MONTHLY REPORT						

4	EQUIPMENT STATUS:						
	-						
	- ANTENNA SYSTEM						
5	MAINTENANCE PROGRAM:						
	- PREVENTIVE MAINTENANCE						
	- REGULAR MAINTENANCE						
	- LAST INSPECTION DATE						

INSPECTED BY: _____

Legends: 1- Satisfactory, 2- Need Improvement, 3- Unserviceable, 4- Not Applicable,
5- In existant

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for VOR (Ground Tests)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Rotation (Clockwise)	Correct			
2	Sensing (Correctness)	Correct			
3	Carrier Frequency (Frequency)	+/-0.002%			
4	Polarization (Deviation)	+/-2.0 deg			
5	Pattern accuracy (Alignment)	+/-2.0 deg			
6	Coverage (Field Strength)	90 uV/m			
7	9960 Hz deviation (Ratio)	16+/-1			
8	9960 Hz modulation depth (Mod: depth)	28 to 32%			
9	30 Hz modulation depth (Mod: depth)	28 to 32%			
10	30 Hz modulation Frequency (Frequency)	30 Hz+/-1%			
11	9960 Hz subcarrier Frequency (Freq:)	9960Hz+/-1%			
12	CVOR AM modulation of 9960 Hz subcarrier (Modulation depth)	</= 5%			
13	DVOR AM modulation of 9960 Hz subcarrier (Modulation depth)	</= 40%			
14	Sideband level of harmonics of 9960 Hz (Modulation depth: 2 nd harmonic, 3 rd harmonic, 4 th and above)	9960 Hz = 0 dB ref </= -30 dB </= -50 dB </= -60 dB			
15	Peak modulation of voice channel (Modulation depth)	</= 30%			
16	Audio frequency characteristics (Power)	+/- 3 dB			
17	Identification speed (Time)	7 words/ min			
18	Identification repetition (Time)	>/= 2 times/ minute			
19	Identification tone frequency (Frequency)	1020 +/-50 Hz			
20	Identification modulation depth (Modulation depth)				

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for VOR (Flight Inspection)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Rotation (Clockwise)	Correct			
2	Sensing (Correctness)	Correct			
3	Polarization (Deviation)	+/-2.0 deg			
4	Pattern accuracy (a) Alignment, (b) Bends, (c) Roughness and Scalloping, (d) Fly ability (Deviation)	+/-2.0 deg +/-3.5 deg +/-3.0 deg Flyable			
5	Coverage (Field Strength)	90 uV/m			
6	Modulation: (a) 9960 Hz modulation (Mod: depth) (b) 30 Hz modulation (Mod: depth)	28 to 32%			
7	Voice channel (Clarity)	Clear			
8	Identification (Clarity)	Clear			
9	Speech effect on navigation (a) Bearing (Deviation) (b) Modulation (Modulation)	No effect			
10	Bearing monitor (Deviation)	+/- 1.0 deg			
11	Reference check point (As required)				
12	Standby power (Normal operation)				
13	Standby equipment (As required)				
14	Complementary facilities (As required)				

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for DME (Ground Tests)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
A	Transmitter				
1	Frequency stability (Frequency)	Assigned channel frequency, +/-0.002%			
2	Pulse spectrum (Power)	Output radiated within each 0.5 MHz band centred at +/-0.8 MHz from the nominal frequency is not more than 200 mW; output radiated within each 0.5 MHz band centred at +/- 2 MHz from the nominal frequency is not more than 2 mW. Amplitude of successive lobes decreases in proportion to their frequency separation from the nominal frequency.			
3	Pulse shape (Time, amplitude)	Rise time $\leq 3 \mu\text{s}$ Duration $3.5 \mu\text{s}$, +/-0.5 μs Decay time $\leq 3.5 \mu\text{s}$ Amplitude, between 95% rise/fall amplitudes, $\geq 95\%$			
4	Pulse spacing (Time)	X-channel: $12 \pm 0.25 \mu\text{s}$ Y-channel: $30 \pm 0.25 \mu\text{s}$			
5	Peak power output (Power)	Peak EIRP such that field density $\geq -89 \text{ dBW/m}^2$ at service volume limits			
6	Peak variation (Power)	Power difference between pulses of a pair $\leq 1 \text{ dB}$			
7	Pulse repetition frequency (Rate)	$\geq 700 \text{ pps}$			

B	Receiver				
8	Frequency stability (Frequency)	Assigned channel frequency, +/- 0.002%			
9	Sensitivity (Power)	Such that power density at antenna ≥ -103 dBW /m ²			
10	Sensitivity variation with load (Power)	<1dB for loadings between 0 and 90% of maximum transmission rate			
11	Bandwidth	Such that sensitivity degrades ≤ 3 dB for interrogation frequency drift of +/-100 kHz			
C	Decoder (Count)	No response to interrogation with pulse spacing more than 2 us from nominal			
D	Time delay (Time)	X-channel: 50 us Y-channel: 56 us			
E	Monitor action (Time)	Monitor alarms when: Reply delay varies more than 1 us (0.5 us for DME associated with a landing aid)			
F	Monitor action delay (Time)	Delay ≤ 10 seconds			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for DME (Flight Inspection)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Coverage (AGC level)	Signal strength such that field density ≥ -89 dBW/m ² at limits or operational requirements			
2	Accuracy (Distance)	≤ 150 m ≤ 75 m for DME associated with landing aids			
3	Pulse shape (Time, Amplitude)	Rise time ≤ 3 us Duration 3.5 us, ± 0.5 us Decay time ≤ 3.5 us Amplitude, between 95% rise/fall amplitudes, $\geq 95\%$ of maximum amplitude			
4	Pulse spacing (Time, amplitude)	X-channel: 12 ± 0.25 us Y-channel: 30 ± 0.25 us			
5	Identification (Identification)	Correct, clear, properly synchronized			
6	Reply efficiency (Change in efficiency, position)	Note areas where this changes significantly			
7	Unlocks (Unlocking)	Note where unlocking occurs			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for ILS performance Categories I, II and III localizer (Ground Tests)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Orientation (Orientation)	Correct			
2	Frequency (Frequency)	Frequency single: 0.005% Dual: 0.002% Separation: >5 kHz < 14 kHz.			
3	Spurious modulation (DDM, Deviation)	< 0.005 DDM peak-to peak			
4	Coverage (unstable distance) (Power)	As set at commissioning			
5	Course structure (Category III only) (DDM)	As described in Annex 10.			
6	Carrier modulation (DDM, Depth) (a) Balance (b) Depth	Within 10 μ A of the modulation balance value 18-22%			
7	Carrier modulation frequency (Frequency)	Cat I: +/-2.5% Cat II: +/-1.5% Cat III: 1%			
8	Carrier modulation harmonic content (90 Hz) (Total 2 nd harmonic)	< 10% < 5% (Cat III)			
9	Carrier modulation harmonic content (150 Hz) (Total 2 nd harmonic)	< 10% < 5% (Cat III)			
10	Unwanted modulation (Ripple)	Modulation depth < 0.5%			
11	Phase of modulation tones (LF phase)	Cat I, II: < 20 deg Cat III: < 10 deg			
12	Phase of modulation tones dual frequency systems (each) (LF phase)	Cat I, II: < 20 deg			
13	Displacement sensitivity (DDM, metre)	0.00145 nominal. Cat I, II: +/- 17% Cat III: +/- 10%			
14	Peak modulation depth	< 50%			

	(Modulation depth)				
15	Audio frequency characteristic (Modulation depth)	+/- 3 dB			
16	Identification tone frequency (Tone frequency)	1020 +/- 50 Hz			
17	Identification modulation depth (Modulation depth)	As commissioned			
18	Identification speed (Tone frequency)	1020 +/- 50 Hz			
19	Identification repetition rate (Time)	As commissioned			
20	Phase modulation (Peak deviation)	Limits given in FM (Hz)/ PM (radians) see Note 5.			
21	Monitoring (DDM, Distance) (a) Course shift (b) Change in displacement sensitivity	Monitor must alarm for a shift in the main course line from the runway centre line equivalent to or more than the following distances at the ILS reference datum. Cat I: 10.5 m (35 ft) Cat II: 7.5 m (25 ft) Cat III: 6.0 m (20 ft). Monitor must alarm for a change in displacement sensitivity to a value differing from the nominal value by more than: +/- 1 dB in either carrier, unless tests have proved that use of the wider limits above will not cause unacceptable signal degradation (>150 ua in clearance sector). Cat I: 10 s Cat II: 5 s Cat III: 2 s			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for ILS performance Categories I, II and III glide paths (Ground Tests)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Orientation (Orientation)	Correct			
2	Path angle (DDM, Angle)	Cat I: Within 7.5% of nominal angle, Cat II: Within 7.5% of nominal angle & Cat III: Within 4% of nominal angle.			
3	Frequency (Frequency)	Single 0.005% Dual 0.002% Separation >4 kHz, <32 kHz			
4	Unwanted modulation (DDM)	+/-0.02 DDM peak-to-peak			
5	Coverage (usable distance) (Power)	As commissioned			
6	Carrier modulation (Modulation depth) (a) Balance (b) Depth	0.002 DDM 37.5% to 42.5% for each tone			
7	Carrier modulation frequency (Frequency of modulation tones)	Cat I: 2.5% Cat II: 1.5% Cat III: 1%			
8	Carrier modulation harmonic content (90 Hz) (Total 2 nd harmonic)	<10% <5% (Cat III)			
9	Carrier modulation harmonic content (150 Hz) (Total 2 nd harmonic)	<10% <5% (Cat III)			
10	Unwanted amplitude modulation (Ripple)	<1%			
11	Phase of modulation tones (Phase)	Cat I, II: <20 deg Cat III: <10 deg			
12	Monitoring				
	(a) Path angle (DDM, Angle)	Monitor must alarm for a change of 7.5% of the			

		promulgated angle.			
	(b) Change in displacement sensitivity (DDM, Angle)	<p>Cat I: Monitor must alarm for a change in the angle between the glide path and the line below the glide path at which 75 uA is obtained, by more than 3.75% of path angle,</p> <p>Cat II: Monitor must alarm for a change in displacement sensitivity by more than 25% &</p> <p>Cat III: Monitor must alarm for a change in displacement sensitivity by more than 25%.</p>			
	© Reduction in power (Power)	Monitor must alarm either for a power reduction of 3 dB, or when the coverage falls below the requirement for facility, whichever is the smaller change.			
	(d) Clearance signal (DDM, Angle)	Monitor must alarm for DDM <0.175 below path clearance area			
	(e) Total time of out-of-tolerance radiation (Time)	<p>Cat I: 6s</p> <p>Cat II, III: 2s</p>			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for ILS marker beacon (Ground Tests)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Frequency (Frequency)	+/-0.01% (0.005% recommended)			
2	RF output power (Power)	+/-15%			
3	Carrier modulation (Modulation depth)	91-99%			
4	Carrier modulation frequency (Frequency of tone)	Nominal +/-2.5%			
5	Carrier modulation harmonic content (Modulation depth)	Total <15%			
6	Keying (Keying)	Proper keying, clearly audible OM: 400 Hz, 2 dashes per second continuously. MM: 1300 Hz, alternate dots and dashes continuously. The sequence being repeated once per second. IM: 3000 Hz, 6 dots per second continuously.			
7	Monitor system	Alarm at:			
	(a) Carrier power (Power)	-3 dB			
	(b) Modulation depth (percent)	>50%			
	© Keying (Presence)	Loss or continuous			

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for ILS localizer Category Cat I, II and III (Flight inspection)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Identification (Morse code)	Proper keying, clear audible to the limit of the range.			
2	Voice feature (Audibility, DDM)	Clear audio level similar to identification, no effect on course line.			
3	Modulation (DDM, Modulation depth) (a) Balance (b) Depth	0.002 DDM 18% to 22%			
4	Displacement sensitivity (DDM)	Cat I: Within 17% of the nominal value, Cat II: Within 17% of the nominal value & Cat III: Within 10% of the nominal value.			
5	Off-course clearance (DDM)	On either side of course line, linear increase to 175 uA, then maintenance of 175 uA to 10 deg. Between 10 deg and 35 deg, minimum 150 uA. Where coverage required outside of +/-35 deg, minimum of 150 uA except in back course sector.			
6	High-angle clearance (DDM)	Minimum of 150 uA.			
7	Course alignment accuracy (DDM, Distance, Angle)	Equivalent to the following displacements at the ILS reference datum: Cat I: +/-10.5 m (35 ft) Cat II: +/-7.5 m (25 ft) * Cat III: +/-3 m (10 ft)			
8	Phasing (DDM)	<10 uA of the modulation balance value			

9	Course structure (DDM)	Outer limit of coverage to Point A: 30 uA all categories- <u>Point A to Point B:</u> Cat I: Linear decrease to 15 uA Cat II: Linear decrease to 5 uA Cat III: Linear decrease to 5 uA <u>Beyond Point B:</u> Cat I: 15 uA to point C Cat II: 5 uA to Reference datum Cat III: 5 uA to Point D, then linear increase to 10 uA at Point E.			
10	Coverage (usable distance) (Flag current, DDM) - Field strength (Field strength)	From the localizer antenna to distance of: (a) 46.3 km (25 NM) within +/-10 deg from the course line (b) 31.5 km (17 NM) between 10 deg and 35 deg from the course line. © 18.5 km (10 NM) beyond +/-35 deg if coverage is provided >40 microvolts/metre (-114 dBW/m ²)			
11	Polarization (DDM)	For a roll attitude of 20 deg from the horizontal: (a) Cat I: 15 uA on the course line (b) Cat II: 8 uA on the course line © Cat III: 5 uA within the sector bounded by 20 uA either side of the course line			
12	Back course (DDM, Angle) - Sector width	Not less than 3 deg.			
13	Monitor system				
	(a) Alignment (DDM, Distance)	Monitor must alarm for a shift in the main course			

		line from the runway centre line equivalent to or more than the following distances at the ILS reference datum. (a) Cat I: 10.5 m (35 ft) (b) Cat II: 7.5 m (25 ft) © Cat III: 6.0 m (20 ft)			
	(b) Displacement sensitivity (DDM, Distance)	Monitor must alarm for a change in displacement sensitivity to a value differing from the nominal value by more than: (a) Cat I: 17% (b) Cat II: 17% © Cat III: 17%			
	© Off-course clearance (DDM)	Required only for certain type of localizer. Monitor must alarm when the off-course clearance cross-pointer deflection falls below 150 uA anywhere in the off-course coverage area.			
	(d) Power (Power field strength)	Monitor must alarm either for a power reduction of 3 dB, or when the coverage falls below the requirement for the facility, whichever is the smaller change. For two frequency localizers, the monitor must alarm for a change of +/-1 dB in either carrier, unless tests have proved that use of the wider limits above will not cause unacceptable signal degradation (>150 uA in clearance sector)			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for ILS glide path (Flight Inspection)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Angle				
	(a) Alignment (DDM, Angle)	Cat I: Within 7,5% of nominal angle Cat II: Within 7.5% of nominal angle Cat III: Within 4% of nominal angle			
	(b) Height of reference datum (DDM)	Cat I: 15 m (50 ft) + 3m (10 ft) Cat II: 15 m (50 ft) + 3m (10 ft) Cat III: 15 m (50 ft) + 3m (10 ft)			
2	Displacement sensitivity (DDM, Angle) - Value - Symmetry	Refer to Annex 10, Volume I, 3.1.5.6			
3	Clearance (DDM, Angle) - Below path - Above path	Not less than 190 μ A at an angle above the horizontal of not less than 0.3 . If 190 μ A must be maintained at least down to 0.45 . Must attain at least 150 μ A and not fall below 150 μ A until 1.75 is reached.			
4	Glide path structure (DDM)	Cat I: From coverage limit to point C: 30 μ A. Cat II and III: From coverage limit to Point A: 30 μ A. From Point A to Point B: linear decrease from 30 μ A to 20 μ A. From Point B to reference datum: 20 μ A.			

5	Modulation (Modulation depth) - Balance - Depth	0.002 DDM 37.5% to 42.5% for each tone.			
6	Monitor system				
	(a) Angle (DDM, Angle)	Monitor must alarm for a change in angle of 7.5% of the promulgated angle.			
	(b) Displacement sensitivity (DDM, Angle)	Cat I: Monitor must alarm for a change in the angle between the glide path and the line below the glide path at which 75 μ A is obtained by more than 0.037 . Cat II: Monitor must alarm for a change in displacement sensitivity by more than 25% Cat III: Monitor must alarm for a change in displacement sensitivity by more than 25%			
	© Power (Power)	Monitor must alarm either for a power reduction of 3 dB, or when the coverage falls below the requirement for the facility, whichever is a smaller change. For two frequency glide paths, the monitor must alarm for a change of +/- 1 dB in either carrier, unless tests have proved that use of the wider limits above will not cause unacceptable signal degradation.			
7	Phasing	No fixed tolerance. To be optimized for the site and equipment.			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for ILS marker beacon (Flight Inspection)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Keying (Keying)	Proper keying, clearly audible- OM: 400 Hz, 2 dashes per second continuously. MM: 1300 Hz, alternate dots and dashes continuously. The sequence being repeated once per second. IM: 3000 Hz, 6 dots per second continuously.			
2	Coverage				
	(a) Indications (Signal level distance)	Proper indication over the beacon or other defined point.			
	(b) Field strength (Field strength)	When checked while flying on localizer and glide path, coverage should be: OM: 600 m + 200 m (2000 ft + 650 ft) MM: 300 m + 100 m (1000 ft + 325 ft) IM: 150 m + 50 m (500 ft + 160 ft). On a normal approach, there should be a well defined separation between the indications from the middle and inner markers. Measurement should use the Low sensitivity setting on receiver.			

3	Monitor system	As operationally usable indication should be obtained for a reduction in power output of 50%, or a higher power at which the equipment will be monitored.			
4	Standby equipment	Same checks and tolerances as main equipment.			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for Non-Directional Beacon (Ground Tests)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Carrier frequency (Frequency)	+/-0.01% (+/-0.005% for power >200 W at frequency above 1606.5 kHz)			
2	Antenna current (RF amperes)	+/-30% of value set at commissioning.			
3	Modulation depth (Depth per sent)	85% to 95%			
4	Modulation frequency (Audio frequency)	1020 +/-50 Hz, 400 +/-25 Hz			
5	Modulation depth of power supply frequency components (Modulation depth per sent)	Less than 5% modulation depth			
6	Carrier level change during modulation (Signal strength)	Less than 0.5 dB (1.5 dB) for beacons with less (greater) than 50-mile coverage.			
7	Identification (Keying)	Clearly audible, proper keying, correct coding.			
8	Audio distortion (Modulation depth)	10% distortion maximum.			
9	Monitor system (a) Antenna current or field strength, (RF current or field strength) (b) Failure of identification (Keying)	Alarm for 3 dB decrease, Alarm for loss of or continuous modulation.			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for Non-Directional Beacon (Flight Inspection)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Identification (Keying)	Clearly audible, proper keying, correct coding to the limit of coverage.			
2	Voice	Clearly audible and free from interference to the limit of coverage.			
3	Rated coverage (Signal strength or bearing)	The minimum signal strength as required for the particular geographical area ADF needle oscillations not to exceed +/-10 deg through out the specified coverage area.			
4	Airway coverage (Bearing)	ADF needle oscillations not to exceed +/-10 deg to the limit of coverage specified for the airway.			
5	Holding pattern, approach procedure (where applicable) (Bearing)	Adequate flyability, needle oscillations not exceed +/-5 deg, with no erroneous reversals giving false impression of station passage.			
6	Station passage	Absence of any tendency for false station passage or excessive ADF needle oscillation.			
7	Standby equipment	Same tolerances as main equipment.			

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for VHF AM Transmitter / Receiver (PAE)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
A	Transmitter (PAE 1250)				
1	Meter Reading				
	(a) 12 V	12 V (Unkeyed)			
	(b) DCV (DC Voltage)	24 V (Unkeyed)			
	© OSC (Oscillator)	30 V (approx:) (Keyed)			
	(d) MOD (Modulation)	70% (approx:) (Keyed with Audio input)			
	(e) FWD (Forward Power)	15-25 W (Keyed)			
	(f) RFD (Reflected Power)	< 1 W (Keyed)			
	(g) DRV V (Driver Voltage)	7.5 V (Keyed)			
2	Frequency (Frequency counter)				
3	Power (Through line)				
4	Modulation % (Oscilloscope)				
B	Receiver (PAE 1201)				
5	Meter Reading				
	(a) AGC (Automatic Gain Control)	0-25 V (with signal)			
	(b) Line (Audio output)				
	© OSC (Oscillator)				
	(d) -6 V (DC Voltage)	-6 V (no signal)			
	(e) 15 V (DC Voltage)	15 V (no signal)			
	(f) 24 V (DC Voltage)	24 V (no signal)			
6	Sensitivity (RF signal generator)				

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for VHF AM Transmitter / Receiver (EXICON)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
A	RF Unit (Type 2284)				
1	Meter Reading				
	(a) REG (Regulated Voltage)	7.5 (Keyed)			
	(b) OSC (RF Output, Oscillator)	3.5 (Keyed)			
	© MULT (RF Output, Multiplier)	2 (Keyed)			
	(d) AMP 1 (RF Output, Amp1)	7.5 (Keyed)			
	(e) AMP2 (Collector Current, Amp2)	7.5 (Keyed)			
	(f) DRV I (Collector Current, Driver)	1.8 (Keyed)			
	(g) DRV V (Supply Voltage, Driver)	7.5 (Keyed)			
	(h) F PWR (Forward Power)	9 (Keyed)			
	(i) R PWR (Reverse Power)	<1 (Keyed)			
	(j) Cancel Alarm (Reset Reverse Power Alarm)	10 (Keyed)			
B	Modulator Unit (Type 2285)				
2	Meter Reading				
	(a) FINAL (Final Current)	4 (Keyed)			
	(b) SUPPLY (Supply Voltage)	8 (Keyed)			
	© MOD1 (Modulator1 Current)	1 (Keyed)			
	(d) MOD2 (Modulator2 Current)	1 (Keyed)			
	(e) VOGAD (Depth of VOGAD Control)	3 (Keyed)			
	(f) MOD% (Modulation Percentage)	6 for 60% (Keyed)			
3	Frequency (Frequency counter)				
4	Power (Through line)				
5	Modulation % (Oscilloscope)				
C	Power Supply Monitor				
6	Meter Reading				
	(a) OSC (Oscillator)	4 (Keyed)			
	(b) AGC (Automatic Gain Control)	5 (Keyed)			
	© Line (-)	- (Keyed)			
	(d) Supply (Supply Voltage)	8 (No Keyed)			
7	Sensitivity (RF signal generator)				

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for NDB (Nautel Nx series)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
A	Control Meter Panel				
1	Meter Reading				
	(a) FWD & REFL Power Meter				
	(b) MOD & Carrier Meter				
	(c) A.C Volt & D.C Amp Meter				
B	Exciter				
2	Test Switch				
	(a) Audio Osc (Audio Oscillator)				
	(b) Carrier Osc (Carrier Oscillator)				
	(c) Output				
	(d) + 18V				
	(e) Off				
3	Mode Switch				
	(a) CW (Carrier Wave)				
	(b) Keyed CW				
	(c) MCW (Modulated Carrier Wave)				
	(d) Voice or Beacon (Keyed Tone and Telephony)				
	(e) Voice & Beacon (Keyed Tone and Telephony)				
	(f) Voice (Telephony Only)				

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for NDB (Nautel ND-500II)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
1	Meter Reading				
	(a) +15 (D.C voltage +15V)	15V			
	(b) +24 (D.C voltage +24V)	24V			
	© B+ (B+ voltage)	50V			
	(d) D.C Current	<40V (with ATU)			
	(e) REF (MOD %)	100			
	(f) READ(MOD %) (Read modulation depth)	90(approx)			
	(g) REFL PWR (Reflected Power)	<1W			
	(h) FWD PWR (Forward Power)	50W(approx)			
2	Frequency (Frequency Counter)				
3	Power (Through Line)				
4	Modulation (Oscilloscope)				

Inspected By: _____

Department of Civil Aviation
Air Navigation Safety Division (CNS section)
CHECK LISTS FORM

Location: _____ Site: _____ Date: _____

Check lists for VSAT-RCAG (CODAN Transceiver 5700 series)

Item	Parameter (Measured)	Tolerance	Measured Value		Remark
			M	S	
A	Control panel of the converter				
1	Power Status Indicators & SW <ul style="list-style-type: none"> - OFF - STANDBY - ON - WARM-UP 				
2	SSPA Status Indicators & SW <ul style="list-style-type: none"> - INHIBIT - REMOTE - ACTIVATE - SSPA ON 				
3	Fault Indicators <ul style="list-style-type: none"> - CONV - LNA - SSPA - TEMP - FAN 				
4	DIP Option Switches <ul style="list-style-type: none"> - the serial interface that will operate the parameters of your transceiver - main or battery operation - LNA +15 V operation 				
B	Remote Monitor and Control facilities				
5	Remote Monitoring Functions (serial interface): <ul style="list-style-type: none"> - Standby - On - Warm-up - SSPA on - Converter fault - LNA fault - SSPA fault - Temperature fault - Fan fault - Converter temperature 				

	<ul style="list-style-type: none"> - SSPA temperature - SSPA inhibit control - SSPA activate control - Transmit frequency - Receive frequency - Transmit attenuation - Receive attenuation - Power up mode - Cable compensation - Reference oscillator override - SSPA alarm enable - LNA alarm enable - Fan alarm enable - Temperature compensation select - Packet address (ASCII mode only) - Packet address range (ASCII mode only) - Packet protocol select - SSPA control mode select - Converter lock - Status change poll - IF impedance - IF frequency 				
6	<p>Remote Control Functions (serial interface):</p> <ul style="list-style-type: none"> - Power control: standby/on - SSPA inhibit control - SSPA activate control - Transmit frequency - Receive frequency - Transmit attenuation - Receive attenuation - Power up mode - Cable compensation - Reference oscillator override - SSPA alarm enable - LNA alarm enable - Fan alarm enable - Temperature compensation select - Address range select (ASCII mode only) - Packet protocol select - SSPA control mode select - Reset - Reset change bits - IF impedance - IF frequency 				

7	Remote Monitoring Functions (contact closure): <ul style="list-style-type: none"> - Standby - Warm-up - SSPA on - Converter fault - LNA fault - SSPA fault - Temperature fault - Fan fault 				
8	Remote Control Functions (contact closure): <ul style="list-style-type: none"> - Power control: standby/on - SSPA inhibit control - SSPA activate control 				
9	TES (Telephone Earth Station)				
10	Multiplexer Unit				
11	DICSM (Digital Integrated Communication Signaling and Monitoring) <ul style="list-style-type: none"> - maintenance function (MD-ICSM to RD-ICSM) - maintenance function (RD-ICSM to MD-ICSM) - PTT function (MD-ICSM to RD-ICSM for transmitter) - SQ function (RD-ICSM to MD-ICSM for VCSS) - Voice flow: (From VCSS to Tx & From Rx to VCSS) 				
12	ESP (Ethernet Serial Port)				
13	Monitor and Control PC <ul style="list-style-type: none"> - Configuration and Setting 				
14	PAE T6T Transmitter (main/standby)				
15	PAE T6R Receiver (main/standby)				
16	Antenna Change Over (C/O) Relay				
17	DC Power Supply				
18	AC Panel				

Inspected By: _____



ANSD Inspection Report Facilities Inspection / Operations Inspection

Date/Time and Location:

Type of Inspection: Aviation Meteorological Service

Inspection Ref. No. :

Name/Designation of Inspector:

*Note: S = Satisfactory, I = Improvement Needed, NA = Not Applicable

	S	I	NA
1. Information for aerodrome control towers (TWRs)			
1.1 Up-to-date local reports with trend forecasts including current pressure data			
1.2 TAF related to the aerodrome concerned will be provided to the aerodrome control tower.			
1.3 Local special reports with trend forecasts including current pressure data.			
1.4 Aerodrome warnings issued in accordance with Annex 3.			
1.5 Wind shear warnings and relevant SIGMET information.			
1.6 AIRMET information if appropriate will be communicated to the TWR without delay.			
1.7 TWRs will be equipped with displays for surface wind and runway visual range (RVR) other meteorological elements phenomena as appropriate. The displays will relate to the same points of observation and will obtain data from the same sensors as those to which the corresponding displays in the meteorological station are connected.			
2. Information for approach control offices (APPs)	S	I	NA
2.1 Up-to-date local reports with trend forecasts, including current pressure data.			
2.2 TAF related to the aerodrome concerned will be provided to the ATS units that provide approach control services.			
2.3 Local special reports with trend forecasts, including current pressure data			
2.4 Amendments to TAF will be communicated to APPs, in accordance with locally established procedures, as soon as they are issued.			
2.5 Relevant SIGMET information and appropriate special air-reports			

	S	I	NA
<p>2.6 Aerodrome warning and winds shear warnings will be provided to APPs without delay.</p> <p>2.7 APPs providing the service for final approach, landing and take-off will be equipped with displays for surface wind, RVR and atmospheric pressure other meteorological elements phenomena as appropriated. The displays will relate to the same points of observation and will obtain data from the same sensors as those to which the corresponding displays in the meteorological station are connected.</p>			
3. Information for Yangon ACC	S	I	NA
<p>3.1. Up-to-date routine and special reports (METAR and SPECI with TREND forecasts) and TAF related to aerodromes located within the Yangon FIR as well as other forecasts for the airspace for which the Yangon ACC/FIC are responsible will be provided to these centers giving special emphasis to significant meteorological conditions and weather deterioration occurring as soon as it can be determined. Such reports and forecasts will also forecast will also relate to all other areas that may be determined on the basis of regional air navigation agreement.</p> <p>3.2. SIGMET information and appropriate special air reports and AIRMET information if appropriate pertaining to the Yangon ACC and also to that FIR or portions of which lie within two hours flying time from the boundaries of the Yangon FIR will be provided to the Yangon ACC/FIC.</p> <p>3.3 Current pressure data for setting altimeters e.g. the lowest QNH in the FIR specified by the FIC/ACC will be provided to the Yangon ACC/FIC to be communicated to the available for low-level flight operations.</p>			

