CHAPTER 64

MONITORING OF OPERATOR'S RELIABILITY PROGRAMME

0.0 LIST OF EFFECTIVE PAGES

CHAPTER SIXTY-FOUR	PAGE	EFFECTIVE DATE
	1 OF 10	10th April, 2023
	2 OF 10	10th April, 2023
	3 OF 10	10th April, 2023
	4 OF 10	10th April, 2023
	5 OF 10	10th April, 2023
	6 OF 10	10th April, 2023
	6 OF 10	10th April, 2023
	7 OF 10	10th April, 2023
	8 OF 10	10th April, 2023
	9 OF 10	10th April, 2023
	10 OF 10	10th April, 2023

1.0 OBJECTIVE

This section provides guidance for monitoring the implementation of approved reliability programs. This inspection determines the operator's continued compliance with operations specifications, the approved reliability document, and the operator's maintenance procedures manual. The inspection is intended to ensure that the reliability program is effectively controlling the maintenance program.

2.0 GENERAL

2.1.1 Definitions.

1) Reliability Program: A method to realistically and responsibly relate operating experience to established maintenance controls.

2) Substantiating Data: Records identified in the approved reliability document as containing information required to support changes in a maintenance program.

3) Maintenance Program: A program that includes inspection, overhaul, replacement of parts, preventive maintenance, repair and restoration, alterations, maintenance processes/tasks, and any other function performed by the maintenance/inspection department.

2.1.2 Operator Authority. An approved reliability program affords the operator the authority to revise maintenance in-service time limitations for overhauls, inspections, and checks of airframes, engines, propellers, components, appliances, and emergency equipment. The operator describes detailed procedures for revising these time limitations in its reliability program, which is approved by the CAA. Civil Aviation Authority (CAA) surveillance ensures that procedures are followed and are effective.

2.2 INSPECTOR RESPONSIBILITIES

2.2.1 The principal airworthiness inspector (PAI) must be alert at all times for possible non-compliance with the approved procedures. If it is found that the operator has failed to follow approved procedures, appropriate enforcement action must be taken. The PAI must notify the operator, in writing, that the procedures were not followed and indicate that the maintenance time limitations revisions are not acceptable.

3.0 PROCEDURES/JOB TASK ANALYSIS

3.1 PREREQUISITES AND COORDINATION REQUIREMENTS

3.1.1 Prerequisites.

1) Knowledge of the regulatory requirements of Civil aviation regulations

3.1.2 Coordination. This task may require coordination between the PMI assigned to the operator and other inspectors.

3.2 REFERENCE, FORMS, AND JOB AIDS

3.2.1 References. None.

1) Applicable operations specifications (OpSpecs)

2) Advisory Circular AC-AWS010 Reliability Program requirements

3) Operator's reliability program document

4) Operator's reliability reports

5) Operator's maintenance manual procedures

3.2.2 Forms. None.

3.2.3 Job Aids. Checklist CL-O-AWS064, CL:O-AWS015, CL:O-AWS003, TGM Chapters 3,52 & 54

3.3 PROCEDURES/ JOB PERFORMANCE SUBTASKS:

3.3.1. Review the MCM. Review MCM to understand the scope, conditions, and limitations of the authorization. Ensure that the MCM include all items controlled by the reliability program, to include the following:

1) All aircraft

2) Engines

3) Systems

4) Components

3.3.2 Review the Reliability Document.

NOTE: It is recommended to develop a procedural flowchart to gain a better understanding of how the entire reliability program functions and how the systems interrelate. It should be used during on-site inspections of the reliability program.

1) Ensure that the reliability document is on file in the NCAA Office.

2) Ensure that the reliability document has procedures for obtaining NCAA approval before changing any of the following:

a) Performance standards

b) Data collection system

c) Data analysis system

d) Process(es)/task(s)

e) Procedures/organization for administering the program

f) Alert-type programs to non-alert programs or vice versa

g) Before adding or deleting aircraft or components/systems

3) Ensure that the reliability document includes a glossary of significant terms.

4) Review the data collection system.

a) Determine what operational data is used to measure the mechanical performance of the programs specified in the reliability document (aircraft, engines, appliances, systems and components, and/or structure). Examples include pilot reports, engine utilization, failure rates, shop findings, and structural inspection findings.

b) Identify forms used to collect operational data.

c) Determine who has responsibility for compiling the data and routing it to the responsible person for review.

d) Determine how the operator ensures operational data is accurate and factual.

NOTE: If engine condition monitoring is part of the reliability program, ensure that the input data and analysis of the data are timely and meaningful.

5) Review the data analysis system.

a) Determine who is responsible for analyzing trend-related information. Trend-related information is analyzed by comparing data to established performance standards.

b) Determine the criteria for conducting further analysis.

c) Determine who will conduct any further analysis for corrective action (i.e., quality control or engineering).

6) Review procedures for instituting corrective action.

a) Ensure that the reliability document describes the criteria that require further analysis to determine causal factors.

b) Ensure that the reliability document describes definitive conditions when corrective action will take place.

c) Determine who implements corrective action.

d) Ensure that time limits are set for completing corrective action and that there is a chain of authority for carrying out the corrective action.

e) Determine if follow-up procedures exist to ensure that the corrective action was effective.

7) Review performance standards.

a) Determine who is responsible for establishing or revising performance standards.

b) Ensure that the reliability document contains the methods used to establish and revise performance standards.

c) Determine what periodic review the operator has established to ensure that the performance standard remains realistic.

d) Review data display and report requirements.

e) Determine if the reliability document provides for data displays (such as forms, reports, and graphs) that summarize the previous month's activities. The report must be in sufficient depth to enable the operator or the recipient of the report to evaluate the effectiveness of the total maintenance program.

f) Determine whether the reliability document has procedures for reporting continuing over-alert conditions and the status of ongoing corrective action.

g) Review maintenance intervals and process/task change procedures.

h) Identify the organizational element responsible for approving changes to the maintenance program.

i) Ascertain the criteria used to substantiate each revision.

j) Review the method of distributing and implementing changes to the maintenance program (for example, job cards, shop manuals, etc.).

k) Review established escalation limitations.

l) Identify established procedures for changing the maintenance process/task.

8) Review reliability program revision procedures.

a) Ensure that there are procedures for program revisions and that items requiring formal NCAA approval are clearly identified.

b) Review method of distributing changes to the reliability document.

3.3.3 Review the Maintenance Manual Sections Referenced in the Reliability Document.

3.3.4 Review the NCAA Office Files.

a) Review any substantiating data to support all changes produced by the reliability program. Ensure that the changed procedures defined in the program are being followed.

b) Review previous inspection reports, correspondence, and other documents in the office files to determine if there are open items or if any areas were identified requiring special attention.

3.3.5 Review the Operator's Reliability Reports. This information may display the current fleet status, information about any system that has exceeded the performance standards, and any corrective action.

a) Ensure that the reliability report required by the document has been submitted to the PAI and reflects all aircraft, engines, systems, and components controlled by the program. Reports must specify the items exceeding established performance standards and the corrective action being taken.

b) Identify trends by reviewing reliability reports for the previous six months. Determine the effectiveness of the corrective actions. Highlight areas with decreasing reliability characteristics for follow up during on-site inspection.

c) Review Mechanical Interruption Summary Reports (MISR), Mechanical Interruption Summaries (MIS), and Engine Utilization Reports if these reports are not included in the reliability document. Analyze reports for the previous six months to identify trends. Ensure that the reliability program has also identified these trends.

3.3.6 Document Findings. After reviewing all operator data, and before coordination, ensure that any confusing areas, obvious omissions, or apparent discrepancies are documented.

3.3.7 Contact the Operator to Schedule An On-site Inspection. Advise the operator of the scope of the inspection. Confirm the inspection date in writing to ensure that the operator's personnel are available.

3.3.8 Brief the Operator's Personnel. Advise personnel of the scope and detail of the inspection.

3.3.9 Compare the Operator's Documents and NCAA Copies. Compare operator's operations specifications and reliability document to the NCAA copies to ensure that dates and revision numbers agree.

3.3.10 Evaluate the Organization. Compare the actual organizational structure and personnel duties and responsibilities with the requirements in the approved reliability document.

NOTE: Until all the elements of the reliability program are inspected, the effectiveness of the organization cannot be determined. Inspection findings may be a direct result of organizational problems (for example, unqualified personnel or personnel not following procedures).

3.3.11 Evaluate the Effectiveness of the Reliability Program.

(1) Data collection system.

a) Determine if the data collection system in the reliability document is used in day-to-day operations and if the data collected is accurate and useful for controlling the maintenance program.

b) Ensure that all necessary data is being collected and reported on the forms identified in the reliability document.

c) Ensure that data collection duties are carried out by the personnel identified in the reliability document.

d) Ensure that data is being routed to the proper organizational element for review.

e) Ensure that data is routed to the proper organizational element in a timely manner by comparing the operational data's initiation dates, receipt dates, and final incorporation dates.

f) Ensure that data accuracy by comparing original operational data documents to the information collected by the reliability program. Reliability programs collect different types of operational data, such as pilot reports by International Air Transportation Association (IATA) chapter, component removal rates by IATA chapter: engine shutdown rates, etc.

g) Ensure that the data is complete. Compare operational data documents with the required procedures in the maintenance manual or reliability document.

h) Ensure that the data collected is relevant to the maintenance program and can accurately predict changes to, and determine effectiveness of, the maintenance program.

2) Analyzed data.

a) Review the items identified as exceeding performance standards and requiring analysis. Determine if the analysis of these items has been accomplished according to the reliability document.

b) Check records to verify the required analysis was performed.

3) Corrective action system. Corrective action is a result of the data analysis. Corrective actions usually are accomplished through product improvement, procedures improvement, time limitation revision, etc. Once authorized, the corrective action becomes mandatory.

a) Determine if an attempt was made to find the cause of all identified areas that exceeded performance standards. Review records to verify the attempt. Determine if the attempt was made by the appropriate personnel (for example, powerplant problems assigned to propulsion engineering).

b) If a cause was not identified, determine if the procedures specified in the reliability document for this situation were followed.

c) If the cause was identified, determine if corrective action was initiated in accordance with the reliability document.

d) Ensure that the corrective action was performed through the chain of authority described in the reliability document.

e) Determine if the persons responsible for executing corrective actions were notified.

f) Determine if the time limits in the reliability document for the completing corrective action were met.

g) Determine if follow-up procedures outlined in the reliability document were followed to ensure that corrective actions taken were effective.

NOTE: A corrective action is considered effective if the out-of-limit condition is brought back to an acceptable level of performance.

4) Performance standards system.

a) Examine a cross-section of performance standards revisions to ensure that they were accomplished according to the reliability document.

b) Determine if performance standards were revised by the personnel specified in the reliability document.

c) Check records to verify that performance standards are reviewed periodically.

d) Review data display. Identify possible performance standards that are not responsive or sensitive enough to reflect changes in actual performance. For example, a data display that shows almost no change could indicate that the performance standards are not sensitive or responsive.

5) Data display and reports.

a) Ensure that data displays and reports cited in the reliability report are being used.

b) Ensure that data displays and reports highlight systems that exceeded the established performance standards and include proposed corrective actions.

c) Determine whether continuing over-alert conditions are carried forward from previous reports and provide the status of ongoing corrective action.

6) Maintenance intervals and process/task changes. Review operator's file of all maintenance program revisions. Select a representative sample to determine compliance with the revision section of the reliability document.

a) Ensure that revisions were authorized by the organizational element identified in the reliability document.

b) Ensure that all maintenance program revisions were based on the criteria in the reliability document and include the specified substantiating data.

c) Determine if the operator exceeded the escalation limitations in the reliability document.

d) Determine if all required changes to the maintenance program were distributed and implemented. Review documentation to determine if changes are distributed and implemented using methods in reliability document.

7) Reliability program revision system. Ensure that formal CAA approval was obtained before implementing changes to any of the following:

a) Performance standards

b) Data collection system

c) Data analysis system

d) Process(es)/task(s)

e) Procedures/organization concerning program administration

f) Alert-type programs to non-alert programs or vice versa

g) Adding or deleting aircraft, components or systems.

3.3.12 Review Records and Reports. Determine if records and reports are prepared and processed in accordance with the reliability document.

3.3.13 Evaluate Short-term Escalation Program, If Authorized.

3.3.14 Assess Findings. Evaluate inspection findings to get an overall picture of how well the reliability program controls the maintenance program.

1) Determine if there has been an increase in any of the following:

a) Aircraft delays

b) Premature component removal rates

c) The engine shutdown rates

d) Inspection scheduling adjustments (short term escalations)

e) Deferred maintenance or minimum equipment list items

f) Pilot reports

g) Aircraft inspection findings

NOTE: If any of the above circumstances are present, it could indicate the reliability program is not properly controlling the maintenance program.

2) If there is a problem with the reliability program based on inspection findings or any of the above circumstances, accomplish the following:

a) Determine if the deficiencies were a result of the organizational structure, lines of authority, staffing, personnel qualifications, or other problems related to the organization

b) Determine if deficiencies were due to incomplete or ineffective methods and/or procedures in the overall program

3) Identify findings that are contrary to the approved reliability program.

4) Identify all findings that are in compliance with the document but are still not producing satisfactory results.

5) Consult with the appropriate supervisory personnel to determine if any findings require enforcement actions.

6) If the inspection indicate a degraded level of safety the CAA need to evaluate if its necessary to initiate a special evaluation or to impose special operational restrictions.

3.3.15 Debrief Operator.

1) Meet with operator to discuss discrepancies discovered during the inspection.

2) Agree to corrective action to be taken by the operator. Advise the operator that a plan, including a schedule, must be submitted for completing the corrective action. If mitigating circumstances arise, the schedule can be renegotiated.

3.3.16 Process Enforcement Action. Inspectors must be alert at all times for possible non-compliance with the approved procedures. If it is found that the operator failed to follow approved procedures, appropriate enforcement action must be taken.

3.4 TASK OUTCOMES

3.4.1 File a report.

3.4.2 Task Completion. Successful completion of this task will result in the following:

1) Notification of the applicant;

2) Recording of OJT in ITS if applicable.

3.4.3 Document Task. File all supporting paperwork in the operator/applicant's office.

3.5 FUTURE ACTIVITIES

3.5.1 Based on inspection findings, determine if increased surveillance, additional enforcement, special operational restrictions or other job tasks are required.