مكاملة
Mukamalah

General Maintenance Manual – GMM

Issue / Revision / Date

01 / 00 / 10-Mar-24

Document No.

MAC-MNT-121U-GMM-M-1/0

0. DOCUMENT ADMINISTRATION AND CONTROL

0.1 GACA APPROVAL

GACA eBook Vol.4

1. This official Mukamalah Aviation manual complies with stringent General Authority of Civil Aviation Regulations (GACAR). The General Authority solely approves its use within Mukamalah.
2. Should any discrepancies arise between this manual and GACAR requirements, prioritize the latter. In such cases, we will promptly update this manual, adhering to GACA eBook Vol.4, Ch.12, Sec. 4.
3. This manual's content is accurate as of Revision 0 of the List of Effective Pages (LEP), dated February 20, 2024.
4. This manual becomes “uncontrolled” when printed.

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General Authority of Civil Aviation

Name:		**Date:**
Title:		
Signature:		
Stamp:	MAC-MNT-121U-GMM-M-1/0	

0.2 MANAGEMENT APPROVAL

1. This manual is a part of the Company manual system and shall comply with provisions established in the Corporate Policy Manual, as applicable, for content, policy, writing standards and formatting.
2. Manual Owner: Director of Safety and Quality
3. Responsibility: Manual content and implementation.

Document Number:	**MAC-ORG-CPM-M-1/0**
Title:	CORPORATE POLICY MANUAL – CPM
Issue / Revision:	01 / 00

Prepared by:		Date:
Title:		
Signature:		

Reviewed by:		Date:
Title:		
Signature:		

Approved by:		Date:
Title:		
Signature:		

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0.4 REVISION HIGHLIGHTS

This table summarizes the major changes that are made to each revision and not all changes. Throughout each review cycle, subsequent entries may change, prior entries or proposed changes may be held, disregarded and/or made obsolete. This is a summary of input received throughout the duration. Changes throughout the manual are indicated by vertical revision bars.

Note: The vertical bar (change bar) in the margin indicates a change, addition, or deletion in the adjacent text for the current revision of that page only.

Issue	Rev	Rev Date	Summary of Change (S)	Received Via
01	00	XX MAR. 2024	N/A – Initial Release	NA

0.5 RECORD OF NORMAL REVISIONS

Issue	Rev	Rev Date	Inserted By	Insert Date / Sign
00	00	XX MAR. 2024	N/A – Initial Release	NA

0.6 RECORD OF TEMPORARY REVISIONS

Temporary Revision No.	Section No.	Page No.	Change Highlights	Effective Date

0.7 LIST OF EFFECTIVE PAGES

Issue	Sec-Page	Rev / Date	Issue	Sec-Page	Rev / Date

Approved by:	
Name:	
Title:	
Sign & date: Stamp:	

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0.8 DISTRIBUTION LIST

Doc Holder / Location	Type Of Format	Copy Number
Master Copy		
Director of Flight Operations		
Chief Pilot		

Note:

Electronic Notification to Staff:

Digital versions of all current Company and Technical documentation are published in DMS for easy access to employees.

Printed Copies:

Any printed copies of this document are uncontrolled documents and are to be marked "Uncontrolled When Printed". The only exception to this is for the Controlled, printed copies of this document that have been distributed in detail.

0.9 DOCUMENT STRUCTURE AND HIERARCHY

0.9.1 PREFACE

This manual is issued is accordance with regulations 4, 5, 7, 91, 109, 117, 119 and 121 of the General Authority of Civil Aviation (GACA) of the Kingdom of Saudi Arabia. It also complies with the terms and conditions of the Operator's Certificate and Operations Specifications issued to the Company by the Authority. The term 'the Company' or 'Mukamalah Aviation' in this document refers to Mukamalah Aviation Company Ltd.

This Corporate Policy Manual is intended to ensure on-going effectiveness in achieving desired operational outcomes and ensure continuous improvement of processes and procedures. It also reflects management's commitment to quality, security, and safety as a fundamental guiding principle. The manual emphasizes the organization's commitment to a just culture, where human error is not punished, and communication channels are open to allow information to flow freely across the organization.

0.9.2 Publications Hierarchy

All Mukamalah Aviation manuals fall in the documentation hierarchy below:

1. Level 1: Corporate and governance level policy documents.
2. Level 2: Division/department level policy, process, and procedure documents.
3. Level 3: Instructions, checklists, and forms.

Manuals at the top of the hierarchy set parameters that lower-level manuals must comply with.

The following flowchart sets out the types of information, their level in the documentation hierarchy.

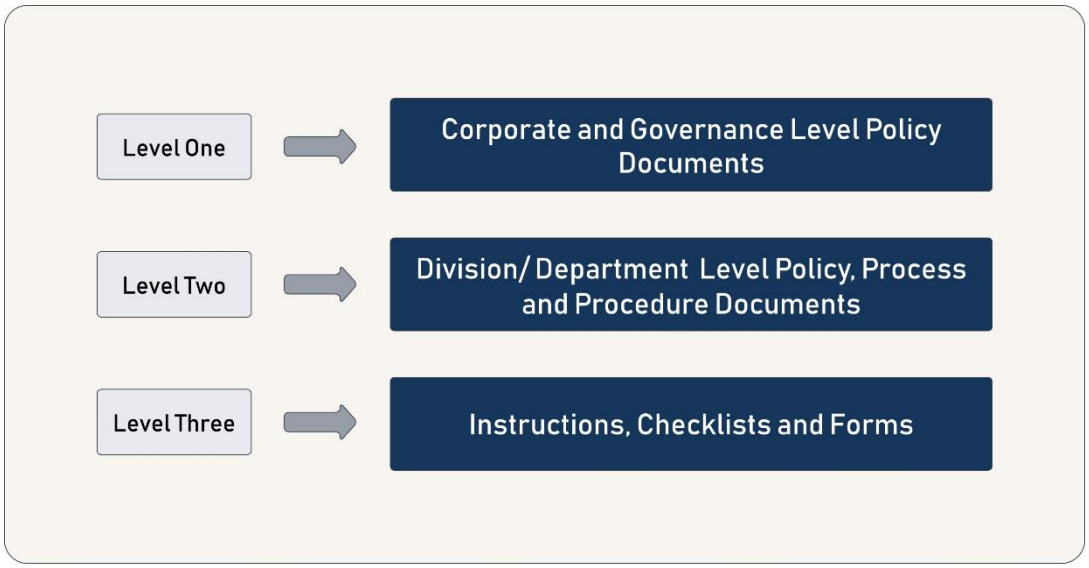

Figure 1 – MAC Publication Hierarchy

0.9.3 Manual Owner

Refer to CPM section 2.6.4.

0.9.4 Document Format and Style Guide

Refer to CPM section 2.6.2.

0.10 REVISION CONTROL

0.10.1 System of Amendment

Refer to CPM section 2.6.2.4.

0.11 ABBREVIATIONS, ACRONYMS & DEFINITIONS

A	
B	
C	

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0.11.1 Definitions

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0.12 USE OF PROCEDURAL WORDS

Refer to CPM section 2.3

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1. ORGANIZATION, PERSONNEL AND FACILITIES

1.1 POLICY

1. The General Maintenance Manual has been compiled for the use and guidance of all personnel responsible for performing maintenance on Mukamalah Aviation aircraft.
2. The purpose of this manual is to make information available to maintenance personnel concerning the proper procedures, rules, and requirements, that will be followed by personnel conducting maintenance and maintenance related duties.
3. It is the endeavor of the Chief Inspector to outline procedures in this manual in a manner that will be easily understood.
4. In accordance with GACAR 121, Mukamalah Aviation is primarily responsible for the airworthiness of its aircraft, including airframes, powerplants, appliances and / or parts thereof.
5. This manual will be used in conjunction with manufacturer manuals to ensure that maintenance performed on company aircraft complies with GACA regulations, including GACAR 121, 91 and company policies and procedures.
6. All maintenance organization personnel, whether employed by the company or its contract maintenance vendors, are required to comply with the policies and procedures contained in this manual.
7. This manual clarifies the additional airworthiness requirements that the Company must follow on top of what's already mandated in GACAR Part 91. These extra requirements have two main goals:
    a. To make sure certain existing airworthiness standards are applied to the Company’s operations, even if they weren't mandatory before.
    b. To introduce new airworthiness requirements that go beyond the existing standards, with the aim of making the Company’s flights even safer.
8. The Company adheres to the stipulations outlined in the appropriate maintenance programs. This may encompass, but is not limited to, revising established maintenance schedules, and incorporating design changes, along with revisions to instructions for continued airworthiness (ICA).

1.1.1 Use of the Manual

1. Where step-by-step procedures and processes are outlined, and deviation from the specified sequencing of the steps could present a danger or hazard, personnel will follow the instructions in the step-by-step sequential order presented.
2. This manual is the property of The Mukamalah Aviation Company Ltd.

1.1.2 Manual Revision

1. Changes to this manual will be handled through routine revision procedures by the Chief Inspector. Revisions will be issued as required. The Highlights of Revision sub-section will include the number of the revisions and information regarding the deletions, changes, and additions made in the revision.
2. All pages of any sub-section that is newly revised will show the latest revision date. Substantive changes will have change bars on the left margin opposite the revised page content. Non- substantive

administrative changes (such as general formatting changes) need not be marked with change bars, but they will be noted in the Highlights of Revision.

3. The List of Effective Sections will be updated with the date for revised sections in BOLD lettering.
4. The Director of Maintenance is then responsible for ensuring the revised manual will be submitted to GACA for approval by sending the revised pages and the Director of Maintenance signed List of Effective Sections to GACA Airworthiness.
5. If GACA has questions or concerns regarding the revision, the GACA contacts the DOM to address the concerns and have them corrected as necessary. If GACA approves the revision, GACA will stamp the List of Effective Sections and generate an acceptance letter (if necessary) and send the signed copies back to the Director of Maintenance.
6. Once the Director of Maintenance receives the GACA signed pages, he will send them to the Chief Inspector for insertion into the official copy of the GMM. He will then post the revised GMM on the Sharek intranet page and notify the organization of the change. If any training is required to address the revised policies and procedures, the Chief Inspector will coordinate with Supervisor, ATT&S.

1.1.3 Temporary Revisions

1. If the Director of Maintenance should identify that a Temporary Revision to the GMM is required to address an immediate policy, procedure, or other change that affects compliance with the GACAR's he will instruct Chief Inspector to generate this Temporary Revision into the GMM.
2. A Temporary Revision will be made such that the page background is YELLOW color so that it is easily identified in the manual.
3. The changed information will have a changed bar located on the left side of the page.
4. If GACA requests to approve/accept a temporary revision, the Director of Maintenance is then responsible for ensuring the temporary revision will be submitted to GACA for approval by sending the temporary revision to GACA Airworthiness.
5. If GACA has questions or concerns regarding the revision, the GACA contacts the DOM to address the concerns and have them corrected as necessary. If GACA approves/accepts the temporary revision, GACA will stamp the pages and generate an acceptance letter (if necessary) and send the signed copies back to the Director of Maintenance.
6. Once the Director of Maintenance receives the GACA signed pages (if applicable), he will send them to the Chief Inspector for insertion into the official copy of the GMM. He will then post the revised GMM on the WebManuals intranet page and notify the organization of the temporary revision change. If any training is required to address the revised policies and procedures, the Chief Inspector will coordinate with Supervisor, ATT&S.
7. Mukamalah Aviation Company then has 60 days from submittal of the Temporary Revision to GACA to make a full revision of the GMM to incorporate the changes affected by the Temporary Revision.

1.1.4 Distribution of the Manual

1. This manual must be made available to all the Company and vendor personnel.
2. After the Director of Maintenance receives GACA notification of revision approval, Chief Inspector will notify all aviation personnel of the issuance of revisions to this manual via sending an email with an

announcement of the approval of the newly revised manual. The announcement will include a link to the newly revised manual.

1.1.5 Manual Change Requests

1. Personnel are encouraged to submit suggestions and recommendations which will improve the utilization and technical quality of the manual.
2. Requests to change this manual may be submitted via email to the Director of Maintenance.

Upon approval of the proposed changes, the Chief Inspector will ensure the manual is revised to reflect the needed changes.

3. If the proposal is not approved, the original submitter will be notified by with the reason for denial.
4. Changes will be scheduled and incorporated in a manual revision.

1.2 MANAGEMENT ORGANIZATION CHART

GACAR 121.45 a

1.2.1 Technical Management Chart

1.3 MANAGEMENT PERSONNEL LIST

1.4 DUTIES, RESPONSIBILITIES AND QUALIFICATION OF THE MANAGEMENT PERSONNEL

1.4.1 Accountable Executive

1.4.2 Chief inspector

SUPERVISOR: Accountable Executive

QUALIFICATIONS:

1. Hold a mechanic certificate with both airframe and powerplant ratings, and have held these ratings for at least 3 years.
2. Have at least 3 years of maintenance experience on different types of large aircraft with 10 or more passenger seats with an air operator or certificated repair station, 1 year of which must have been as maintenance inspector; and
3. Have at least 1 year of experience in a supervisory capacity maintaining the same category and class of aircraft as the certificate holder uses.

DUTIES AND RESPONSIBILITIES

1. General

The Supervisor, Chief Inspector is responsible to the Accountable Executive for ensuring the aircraft are in an airworthy condition with respect to GACA regulations, GACA approved aircraft inspection programs, and in accordance with approved Mukamalah Aviation Company GMM.

2. Specific

a.

1.4.3 Director of Maintenance

SUPERVISOR: Accountable Executive

DIRECT SUPERVISION OF: Fleet Planners

Fleet Engineers

Mechanics

QUALIFICATIONS:

1. Must be GACAR Part 66 certificated with Airframe and Powerplant ratings
2. Have 1 year of experience in a position responsible for returning aircraft to service.
3. Have at least 1 year of experience in a supervisory capacity maintaining large aircraft with 10 or more passenger seats or repairing aircraft in a certificated airframe repair station rated to maintain aircraft in the same category and class of aircraft operated by Mukamalah Aviation Company.
4. Have 3 years' experience within the past 6 years in one or a combination of the following—
    a. Maintaining large aircraft with 10 or more passenger seats, including at the time of appointment as director of maintenance, experience in maintaining the same category and class of aircraft as the certificate holder uses; or
    b. Repairing aircraft in a certificated airframe repair station rated to maintain aircraft in the same category and class of aircraft as the certificate holder uses.

DUTIES AND RESPONSIBILITIES

1. General

The Director of Maintenance acts as administrative chief of maintenance. He is responsible for ensuring the overall performance of the mechanics and of the maintenance control system. He represents, manages, controls, coordinates, and ensures the execution of the administrative, financial, and budgetary plans, goals, and objectives of maintenance. Manages appropriate resources to meet the company, division, and sub-function goals, including full compliance with the applicable requirements of the Kingdom of Saudi Arabia and the GACA. Responsible for keeping higher management informed regarding aviation maintenance operations.

2. Specific
    a. Administrates, manages, and leads the maintenance, planning, and engineering functions.
    b. Ensures that the division is staffed and equipped to manage, control, and perform necessary maintenance and inspections on the company operated aircraft fleet and component parts.
    c. Ensures the preparation, certification, and performance of budgets, plans, and all associated operational, financial, and accounting reports and matters.
    d. In coordination with higher management, safety, and quality functions, selects administratively and technically competent senior leaders to be responsible for their main sections of the division: the fixed-wing sub-function, the rotor-wing sub-function, and their associated subordinate functions.
    e. Ensures that the mechanics meet all legal, competency, and company requirements, and are acceptable to the GACA for overall responsibility and control of all technical and regulatory aspects of their assigned areas, including organizing and resourcing their areas to meet government and company requirements.
    f. Ensures when necessary, or when more efficient or effective, that mechanics and engineers engage, manage, and control contracted vendors to provide maintenance services.

g. Ensures and holds personnel (engineers, planners, and mechanics) accountable for meeting applicable government and company requirements. These include GACA regulations, Mukamalah Aviation Company General Instructions (GIs), and Aviation Department policies and procedures.

h. Keeps management informed regarding activity levels, aircraft completions, safety management and performance, budgetary and financial requirements and performance, and resourcing of personnel, facilities, tools, equipment, materials, publications, data, drawings, and records for the division.

i. When changes and improvements are found to be needed, ensures the provision of action plans, monitors progress, and holds personnel responsible for progress.

j. Ensures interaction with Supervisor, QA/QC to ensure that work on aircraft and equipment is inspected when required, and properly certified as airworthy before release for operations.

k. Ensures that mechanics are correctly equipped, trained, and GACA certificated, as necessary.

l. Ensures and monitors the development and provision of formal and OJT initial training programs and recurrent refresher courses.

m. Ensures and monitors the development and provision of selection and training programs for external education and GACA A&P certification of apprentice recruits.

n. Ensures that each person performing required inspections must hold an appropriate airman certificate.

1.4.4 Engineering Manager

SUPERVISOR: Director of Maintenance

DUTIES AND RESPONSIBILITIES

1. General

Engineers are responsible to the Director of Maintenance for the effective management and use of personnel, equipment, and resources.

2. Specific

a. Ensure the timely addressing of all GACA, FAA, and State of Design Airworthiness Directives (ADs) and all manufacturers Service Bulletins (SBs), Service Letters (SL), and any other Bulletins as required.

b. Reviews and approves all work scopes for aircraft or engine heavy maintenance projects.

c. Authors all Fleet and Engine / APU Maintenance Technical Directives (MTDs).

d. Ensures all Company Policies and Procedures are complied with.

e. Oversee all liaisons between Mukamalah Aviation Company, manufacturers, and repair facilities.

f. Responsible for developing and obtaining GACA certification for modifications and incorporation of STC's.

g. Give status reports as per the Director of Maintenance.

h. Coordinates the arrangement of maintenance services by vendors.

1.4.5 Planning Manager

SUPERVISOR: Director of Maintenance

DUTIES AND RESPONSIBILITIES

1. General

Coordinates production planning and control functions for all phases of aircraft maintenance, including scheduled maintenance, incorporation of modifications, and mandatory manufacturer and/or GACA special inspection requirements to ensure that the Mukamalah Aviation Company fleet meets GACA regulatory and company standards.

2. Specific

a. Assists and advises Director of Maintenance for management of planning and scheduling requirements and setting priorities.

b. Identifies and monitors long term maintenance and inspection requirements.

c. Creates maintenance schedules, forecasts and reports that provide maintenance planning information to Director of Maintenance.

d. Ensures that inspection work packages are correctly established and issued on time.

e. Reviews completed routine and non-routine work forms for completeness and correct documentation.

f. Recommends changes to departmental procedures to ensure compliance with GACA regulations as they pertain to maintenance planning functions.

g. Reviews compliance of Airworthiness Directives, Service Bulletins and Modification status.

h. Reviews computer tracking systems and generated reports to ensure accuracy and completeness.

i. Monitors the maintenance record filing system and ensures that information is readily available to Aviation Department personnel. Enforces recordkeeping policies.

1.4.6 Mechanic

SUPERVISOR: Director of Maintenance

QUALIFICATIONS

1. Must be GACAR Part 66 certificated with Airframe and Powerplant ratings

DUTIES AND RESPONSIBILITIES

1. GENERAL

Performs line maintenance, repair, testing and troubleshooting on all aircraft and aircraft systems pertaining to the aircraft used by Mukamalah Aviation Company.

2. SPECIFIC

a. Performs Daily, Transit, and Pre-flight checks (as applicable) on aircraft operated by Mukamalah Aviation Company.

b. Performs corrective actions to address maintenance and pilot non-routine write-ups.

c. Performs maintenance activities away from home base when assigned with an aircraft that may go out of Kingdom.

d. Performs work assignments under the authority of the Director of Maintenance.

e. Acts as company representative for work being performed by a repair station during a maintenance visit.

f. Conducts on-the-job training of junior personnel, instructing them in approved procedures and proper handling of tools and equipment, stressing safe work practices and good housekeeping.

g. Keeps abreast of maintenance methods, standards, and specifications by reading bulletins, manuals, regulations, and aeronautical technical data.

h. Performs other duties as assigned by Director of Maintenance.

1.4.7 Training Manager

1.4.8 Supervisor of Records

1.4.9 Technical Auditor

1.4.10 Maintenance Control Center Manager

SUPERVISOR: Accountable Executive

QUALIFICATIONS:

DUTIES AND RESPONSIBILITIES

1. General

The Maintenance Control Manager plays a critical role in ensuring the smooth flow of maintenance activities.

2. Specific

a. Initiate, review, and approve work orders for aircraft maintenance.

b. Prioritize work orders based on urgency, safety considerations, and aircraft availability requirements.

c. Assign work orders to qualified maintenance personnel.

d. Maintain clear communication channels with maintenance personnel, dispatch (scheduled operations), and maintenance planning.

e. Provide updates on maintenance progress to relevant stakeholders.

f. Coordinate the availability of parts and resources for maintenance tasks.

g. Ensure accurate and complete documentation of all maintenance activities.

h. Maintain records of work orders, inspections, and aircraft maintenance history.

i. Ensure adherence to all regulatory requirements and company maintenance procedures.

j. Conduct audits and inspections to monitor the quality and safety of maintenance activities.

k. Investigate discrepancies and take corrective actions as needed.

1.5 MAINTENANCE DELEGATION

Within the framework of GACAR Part 121, Mukamalah Aviation is subject to specific requirements regarding the delegation of Maintenance and Management (GMM) responsibilities. These requirements emphasize the importance of maintaining clear lines of accountability while allowing for the effective distribution of tasks within the organization.

To ensure compliance with GACA regulations, the Company establishes and document a formal delegation of authority process for GMM activities:

1. Designation of Qualified Individuals.
2. Clear Documentation.
3. Accountability.
4. Maintenance Oversight.

1.6 FACILITIES AND CAPABILITIES

1.6.1 Facilities

Mukamalah Aviation Company serves as a private corporate aviation operator, functioning solely in support of the company, its employees, contractors and corporate guests.

Mukamalah Aviation ensures adequate facilities, competent personnel, and necessary equipment for all maintenance and inspection tasks.

BASES AND ADDRESSES

1. AVIATION DEPARTMENT HEADQUARTERS
    a. Mailing Address

        Mukamalah Aviation Company

        PO Box 80

        Dhahran 31311

        Saudi Arabia

    b. Physical Address

        Mukamalah Aviation Company

        King Fahad International Airport

        East Service Road Bldg. 3406

        Dammam 31311

        Saudi Arabia

2. FIXED-WING MAINTENANCE – DAMMAM

    a. Mailing Address

        Mukamalah Aviation Company

        Aircraft Maintenance Division

        PO Box 80

        Dhahran 31311

        Saudi Arabia

b. Physical Address

Mukamalah Aviation Company

Aircraft Maintenance Division

King Fahad International Airport

East Service Road Bldg. 3406

Dammam 31311

Saudi Arabia

1.6.2 Maintenance Capabilities

1. Mukamalah Aviation Company mechanics are available for dispatching with an aircraft for out of Kingdom aircraft deployments. The activities performed are limited to Daily Checks, Pre-flight Checks, Transit Checks, MEL deferrals, and non-routine findings that require simple tooling. All activities in excess of these require coordination of additional maintenance support through a GACA certificated repair station.
2. All line maintenance, hangar maintenance, shops, and other activities in-Kingdom are contracted with the GACA certificated Mukamalah Aviation Company Repair Station (Dammam). Refer to the Mukamalah Aviation Company Repair Station (Dammam) GACA accepted Repair Station Manual Section 5 for the repair station's facilities.
3. Refer to the Mukamalah Aviation Company Repair Station (Dammam) current GACA accepted Capability List for all the capabilities at this location.

1.7 PERSONNEL AUTHORIZATION

1.7.1 General

1. No person may supervise or certify maintenance on or approve for return to service any aircraft or aircraft equipment operated by Mukamalah Aviation Company unless he is one of the following:
    a. An employee of Mukamalah Aviation Company who holds a valid GACA Mechanic's certificate with rating (Airframe and/or Powerplant) appropriate to the work being certified and is on the list of Mukamalah Aviation Company authorized mechanics.
    b. An employee of the GACA Certificated Repair Station which has been engaged and authorized by Mukamalah Aviation Company to perform aircraft maintenance.
    c. Another person or organization listed in GACAR 43.3 as authorized to perform aircraft maintenance and has been engaged and authorized by Mukamalah Aviation Company to perform aircraft maintenance.

1.7.2 Mechanic Authorization

1. Chief Inspector maintains lists of Aviation Department personnel who are authorized to certify aircraft maintenance on and approve for return to service (i.e. are maintenance release authorized), aircraft and equipment operated by Mukamalah Aviation Company.
2. Mukamalah Aviation Company authorized mechanics lists are made available to all employees through the Sharek intranet site.
3. In compiling these lists, the Chief Inspector is responsible to ensure that all the following criteria are met for each mechanic on the list:
    a. He holds a valid GACA Part 66 Mechanic's certificate with Airframe and/or Powerplant rating.
    b. He has been actively involved in aircraft maintenance on the types of aircraft he will be certifying for at least six months of the last twenty-four months.
    c. For a mechanic who is a trainee, that they have met the required criteria listed in the Training Manual.

1.7.3 Interrelationship between MAC and Personnel

1.7.3.1 Policy

This policy establishes clear guidelines and expectations for the positive and productive interaction between Mukamalah Aviation and maintenance personnel.

1. Communication and Coordination:
    a. Clear Channels: Establish designated points of contact for MAC and maintenance personnel to facilitate clear communication and information exchange.
    b. Joint Briefings: Conduct joint pre-maintenance briefings to ensure a shared understanding of the tasks, potential risks, and communication protocols.
    c. Real-time Updates: Encourage real-time communication to update each other on progress, unexpected issues, and any changes to the maintenance plan.

d. Joint Problem-Solving: Foster a collaborative environment where both teams work together to address any challenges or technical issues that may arise during maintenance.

2. Roles and Responsibilities:

a. Develop and provide clear maintenance procedures and work instructions.

b. Ensure maintenance personnel possess the necessary qualifications and training for the assigned tasks.

c. Oversee the overall quality and safety of maintenance activities.

d. Provide guidance and support to maintenance personnel as needed.

e. Assign qualified personnel with relevant experience and training for specific tasks.

f. Ensure their personnel adhere to the Mukamalah Aviation's maintenance procedures and safety regulations.

g. Maintain clear documentation of completed work and identified discrepancies.

3. Safety Culture:

a. Shared Priority: Mukamalah Aviation cultivates a shared commitment to safety as the top priority.

b. Reporting Concerns: Establish a clear and open channel to report any safety concerns or potential hazards identified during maintenance activities.

c. Continuous Improvement: Encourage the sharing of best practices and promote a culture of continuous improvement in safety procedures and communication protocols.

4. Training and Qualification:

a. Mukamalah Aviation Provide training for maintenance personnel on effectively supervising and collaborating.

5. Performance Monitoring and Evaluation:

a. Regular Reviews: Conduct regular performance reviews to assess the effectiveness of the interrelationship.

b. Feedback Mechanisms: Establish clear feedback mechanisms to provide constructive feedback on communication, collaboration, and safety practices.

c. Corrective Actions: Implement corrective actions based on the evaluation results to continuously improve the effectiveness and safety of line station maintenance activities.

1.8 AIRCRAFT LISTING

1.8.1 Introduction

This document outlines the process for adding authorized aircraft to Mukamalah Aviation's OpSpecs, which is required by GACAR Part 121 for revenue flights. It also details the responsibilities of the Chief Inspector and the Director of Maintenance in this process.

1.8.2 Pre-requisites

Before adding a new aircraft, all requirements stipulated in GACAR Part 21 Subpart F and GACA eBook Volume 6 must be fulfilled.

1.8.3 Responsibilities

1. Chief Inspector Responsible for processing and submitting all necessary documentation to GACA as per GACA eBook Volume 6 guidelines. Additionally, they provide a copy of the updated OpSpecs to the Director of Maintenance upon GACA approval.
2. Director of Maintenance:
    a. Signs the OpSpecs to signify approval.
    b. Reviews and verifies the accuracy of the following information for the new aircraft:
        i. Manufacturer (Make)
        ii. Model designation
        iii. Variant or sub-model (Series)
        iv. National aviation authority registration
        v. Manufacturer-assigned serial number
    c. Ensures accuracy of information for all existing Mukamalah Aviation aircraft listed in the OpSpecs document (D85).
    d. Confirms the document revision number and date reflect the new aircraft addition.

1.8.4 Control Measures

1. The OpSpecs serve as the official record of all authorized aircraft for Mukamalah Aviation operations.
2. Director of Maintenance plays a crucial role in verifying the accuracy of information during the amendment process.

1.8.5 Process Audit

The Chief Inspector conducts audits to ensure:

- OpSpecs are current and contain all required information regarding aircraft.
- The required reporting procedures have been completed by the Director of Maintenance.

2. PLANNING AND ENGINEERING

2.1 GENERAL INFORMATION

1. The Planning and Engineering Unit provides the Aviation Department with accurate, timely, and cost-effective technical services to ensure a high level of operational safety and reliability across the Company.
2. The Planning and Engineering (P&E) manual is the authority for the two groups to provide services to the Aviation department. The Planning and Engineering manual provides procedures and policies for providing such services.
3. The function of the Engineering group is to provide engineering technical support to ensure safe, reliable, cost-effective, and on-time operation.
4. The duties of the Engineering group include providing in-house and outside technical support to Maintenance for airframe, engine, or components. Evaluate Manufacturer documents and take appropriate action. Developing work scope for components and aircraft heavy check. Prepare technical reports all in compliance with the original equipment manufacturer, Mukamalah Aviation procedures and the FAA/EASA/GACA.
5. The function of the Maintenance Planning Group (also known as Planning Group) is to support the scheduled and unscheduled maintenance events of the Aviation Department and to maintain aircraft records.
6. The Planning Group is responsible for maintaining and retaining the aircraft maintenance records.
7. Each employee and Outside Supplier Vendor (OSV) are required to observe and comply with Saudi Mukamalah Aviation GMM when performing maintenance.
8. The P&E manual will be revised on a needed basis. The Planning and Engineering manual revision release will occur on the first day of the month. Off-cycle releases can be made at any time during the month in support of the operation.
9. References listed in the “Regulatory / Other References” section are intended for reference only.
10. Text in purple color indicates corrective action in response to an overfly event or mandated action. Changes to those sections require approval by the supervisor of Planning & Engineering.

2.2 ENGINEERING

The Engineering Group provides technical support to the Director of Maintenance as required. They review incoming technical documents for possible action, develop work scopes, prepare technical reports, and provide cost analysis as required for management. They support out of Kingdom aircraft maintenance to include on-site visits during induction and initial work planning phase of vendor visit to ensure adherence to work scope and to address any problems that may be encountered. In addition, this group provides support to customers on an ad-hoc or contracted basis to address concerns when the respective customer's aircraft is in for service at the Mukamalah Aviation Company Repair Station.

2.2.1 Processes and Procedures

Refer to the latest revision of the Planning and Engineering manual Chapter 3.

2.3 PLANNING

The Planning Group provides logistical and planning support to the Director of Maintenance as required. They create and maintain maintenance plans, schedule maintenance visits into the hangar, and keep records of all maintenance and inspection activities. As overseers of manufacturer's inspection programs, they create and revise checklists. They maintain the computerized tracking systems to ensure life limited and overhaul parts are replaced and/or serviced at required intervals, that serialized parts are correctly updated in the system, and that aircraft and engine hours and cycles are being accurately updated.

2.3.1 Processes and Procedures

Refer to the latest revision of the Planning and Engineering manual Chapter 2

3. INSPECTIONS AND MAINTENANCE

3.1 GENERAL INFORMATION

This program outlines the framework for conducting aircraft inspections and maintenance at Mukamalah Aviation. Its primary objective is to guarantee the safe operation of all aircraft and components until their next scheduled inspection. This is achieved by ensuring meticulously detailed inspections that adhere to the standards established in Mukamalah Aviation's designated manuals (AIP, AMM, MEL…). Consequently, every aircraft released for service is demonstrably airworthy and meets MAC GMM and the GACAR requirements.

Mukamalah Aviation holds the responsibility for performing aircraft maintenance and inspections within the parameters of their official approval. This implies that they possess a qualified workforce and the necessary equipment to conduct specific maintenance and inspection tasks effectively.

For any maintenance or inspection activities falling outside the purview of their approved scope, MAC will engage the services of a duly qualified Maintenance Provider, but responsibility remains with MAC. This engagement will strictly adhere to the procedures outlined within the designated manual (AIP, AMM, MEL…).

MAC will perform or will arrange with the Maintenance Provider to perform the maintenance, preventive maintenance, and alterations as provided in the CAMP and this GMM.

MAC acquires adequate facilities and equipment to perform the work for maintenance staff.

This comprehensive approach ensures that Mukamalah Aviation maintains complete control over critical maintenance activities while simultaneously possessing a clearly defined process for outsourcing tasks exceeding the scope of their in-house expertise. This combined strategy serves to uphold the highest safety standards and guarantees unwavering compliance with all applicable regulations.

3.1.1 Responsibility

To modify the policies, procedures, instructions, and information in this section:

1. Director of Maintenance (for maintenance programs)
2. Chief Inspector (for inspection programs)

3.1.2 Aircraft Removal from Service

1. If any condition arises which makes an aircraft unairworthy, that aircraft is removed from service by making an entry on Mukamalah Aviation Company Aircraft Maintenance Logbook.
2. Entries in the maintenance logbook must detail what is causing (or about to cause) the aircraft to be unairworthy. This includes but is not limited to aircraft defect / malfunction, operational condition encountered (e.g. heavy landing, bird strike, lightning strike, etc.) scheduled maintenance due (or about to be due), Airworthiness Directive due (or about to be due), or required documentation (e.g. aircraft registration certificate, radio station license) expired.
3. An aircraft may be removed from service per paragraph 1. (above) by the following persons:
    a. The Director of Maintenance

b. The holder of a GACA Mechanic Certificate with Airframe and Powerplant ratings who is on the list of Mukamalah Aviation Company authorized mechanics.

c. A Mukamalah Aviation Company, GACA certificated pilot who is rated to act as pilot-in-command on the type of aircraft being removed from service.

d. A mechanic acting on behalf of a contract maintenance vendor which has been engaged and authorized by Mukamalah Aviation Company to perform aircraft maintenance.

e. A GACA Aviation Safety Inspector.

3.1.3 Aircraft Airworthiness Release or Maintenance Record Entry

3.1.3.1 General

1. After any maintenance, preventive maintenance, or alteration is performed on an aircraft, it must be approved data for return to service by a person authorized per GACAR 43 by the issuance of an airworthiness release or maintenance record entry completed per GACAR 121.
2. Airworthiness Release of aircraft after completion of scheduled inspection / check package (e.g. A check, C check, 300-hour, etc.) may be certified by the following persons:
    a. A Mukamalah Aviation Company GACA Mechanic's Certificate holder with rating (airframe and/or powerplant) appropriate to the work performed, who is on the Mukamalah Aviation Company list of authorized mechanics.
    b. An employee of a contract maintenance vendor which has been engaged and authorized by Mukamalah Aviation Company to perform maintenance on an aircraft and who has been designated by Mukamalah Aviation Company with return to service authorization.
3. Maintenance record entries for return to service of aircraft after unscheduled maintenance, component changes, daily, pre-flight and transit checks, and out-of phase inspections may be certified by the following persons:
    a. A Mukamalah Aviation Company GACA Mechanic's Certificate holder with rating (airframe and/or powerplant) appropriate to the work performed, who is on the Mukamalah Aviation Company list of authorized mechanics.
    b. An employee of a contract maintenance vendor which has been engaged and authorized by Mukamalah Aviation Company to perform maintenance on an aircraft and who has been designated by Mukamalah Aviation Company with return to service authorization.
4. In all cases, the person performing the airworthiness release or maintenance record entry that approves the aircraft for return to service must be GACAR Part 43 authorized. The individual must hold Mukamalah Aviation Company Part 121 Airworthiness Release authorization.

3.1.3.2 Certification Statement

1. An original or signed copy of the airworthiness release or maintenance release record entry must be carried onboard the aircraft.
2. The signature of an authorized person on the airworthiness release or maintenance release record entry constitutes certification that:

a. The work was performed in accordance with the requirements of the certificate holder's manual.

b. All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed.

c. No known condition exists that would make the aircraft unairworthy; and

d. Within the scope of work performed, the aircraft is safe to operate.

3. It isn't necessary for a person signing an airworthiness release or maintenance release record entry to restate each of the conditions listed above.

4. The Airworthiness Release statement documented in the aircraft logbook for scheduled aircraft inspections (such as A-checks, C-checks, Phase Checks, etc..), is to include the following entry to certify the airworthiness release as per GACAR 121 after the completion of the inspection package:

I certify this aircraft has been inspected in accordance with the Mukamalah Aviation Company (insert aircraft type) Aircraft Inspection Program Rev.___ and General Maintenance Manual Rev.___ and found to be in an airworthy condition and is approved for return to service.

5. In addition to the logbook entry for paragraph 4 above, the airworthiness release statement on the aircraft flight log is to be signed with the appropriate inspection entered.

6. For routine daily, pre-flight, post-flight, and transit checks, airworthiness release statements are made available on the pre-printed checklist form which includes the statement in paragraph 4 above. After completing the daily, pre-flight, post-flight, or transit check, a signature entry on the aircraft flight logbook with the type of check performed is to be entered.

7. If the flight log page is removed from the logbook by the flight crew during the normal flight day, the prior airworthiness release is still valid unless superseded by another airworthiness release. To continue its validity, the statement "continued from log page XXXXX" is to be entered in the block.

8. Maintenance release record entries for corrective actions taken on non-routine entries made in the aircraft maintenance logbook are to include the statement "aircraft approved for return to service in reference to work performed" if the actions taken returns the aircraft to an airworthy condition.

9. Mukamalah Aviation Company must keep a record of the airworthiness release or maintenance record entry for at least 60 days.

3.1.3.3 Required Instruments and Equipment

1. Per GACAR 91.303, there are certain required instruments and equipment that are to be operative for conducting certain flight operations.

2. Mechanics (or contracted repair facility) are responsible for ensuring that any required instruments and equipment items identified by flight crews as inoperative are addressed using the applicable instructions for continued airworthiness or maintenance manual procedures and are verified as operating to the required specifications or replaced as necessary.

3.1.4 Contracted Maintenance Providers

The following table lists the maintenance providers that Mukamalah Aviation Company has contracted to provide inspection services:

Contract Provider Name	Location
Mukamalah Aviation Company Repair Station (Dammam)	King Fahad International Airport Dammam, Saudi Arabia
Mukamalah Aviation Company Repair Station (Ras Tanura)	Ras Tanura Airstrip Ras Tanura, Saudi Arabia
Mukamalah Aviation Company Repair Station (Tanajib)	Tanajib Airstrip Tanajib, Saudi Arabia

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Mukamalah Aviation Company has a maintenance agreement with the Mukamalah Aviation Company Repair Station to perform required maintenance activities and the management and contracting of additional services to be performed by other entities. Refer to the current maintenance agreement for details.

3.1.5 Signature and Initials/Stamp Rules

3.1.5.1 Maintenance Logbook and Daily Work (Line Maintenance Activities)

1. Any unscheduled work (pilot and mechanic write-ups) that occurs outside of a scheduled hangar inspection requires only one signature by a mechanic who has airworthiness release authority. However, if the work to be performed qualifies as an RII as per the RII list in 3.3.2.1.4, that work must also be signed by an authorized RII inspector and therefore will have two signatures.
2. Line maintenance activities such as Daily, Pre-flight, and Transit checks only require one signature by a mechanic who has airworthiness release authority. Individual line-item tasks within the checklist may be initialed/stamped by a certificated mechanic who does not have airworthiness release authority. However, the final sign-off must be by a mechanic with airworthiness release authority.
3. If Planning sends an additional scheduled maintenance task to the mechanics, it follows the one signature rule unless the item qualifies as an RII.
4. Mechanic/technician helpers performing any tasks must be supervised and have their work signed and/or initialed/stamped by a certificated mechanic. Helpers are not permitted to initial, stamp, or sign for the performance of any task.
5. If a stamp is used on an aircraft maintenance logbook (routine/non-routine) entry, the stamp is to be in the signature block next to the ink signature and applied to each carbon copy page.

3.1.5.2 Scheduled Work (Hangar and Shop Activities)

1. Scheduled work includes the following:
    a. Hangar level base maintenance inspections (such as A-checks, C-Checks, 300-hour inspections, etc…)
    b. Modifications and Repairs that are scheduled by Planning to be performed.
    c. Accomplishment of MTD's that are scheduled by Planning.
    d. Scheduled shop work where components are removed from an aircraft and sent to a shop for further work. Examples are batteries, seats, wheel/tire assemblies, sheet metal shop work, and avionics shop work.
2. Except for items listed in step 3 below, scheduled work is to follow the 2-signature / 2-initials rule. Each block must be initialed/stamped by two separate persons: a mechanic/technician and an inspector or inspector designee.

NOTE: Since mechanic/technician helpers are not authorized to initial/stamp or sign for any task, the person supervising the work performed by a helper is to initial/stamp and/or sign as the mechanic. This task will still require a second initial/stamp and/or signature from an inspector or inspector designee.

3. Exceptions to the 2-signature / 2-initial rule are as follows:
    a. AW139 and H-145 AIP checklist items that are "grey-out" or not marked as requiring RII.
    b. Any task card or checklist that requires a step to be performed only by an inspector. In this case, if the task card has mechanic and inspector initial blocks, the inspector is to initial/stamp the inspector steps performed and mark the mechanic blocks with a single line "strike-through" for

those inspection steps. An example of this activity is a borescope inspection because it is only performed by the borescope inspector.

3.1.6 Work Turnover

3.1.6.1 Responsibilities

1. The Director of Maintenance is responsible for ensuring that work turnover procedures are being followed by Maintenance during shift turnover and work stoppages.
2. Mechanics are responsible for ensuring that written turnover reports are being made at the end of their shift or if a work stoppage occurs and the work will resume later.

3.1.6.2 Turnover Policy and Procedures

1. Mechanics working on an aircraft, engine or appliance are responsible for documenting any incomplete work existing at the end of shift.
2. At the end of their shift, mechanics are responsible to do the following:
    a. Coordinate with personnel in their work area to determine the status of work at the end of a shift and report incomplete items, which may include parts status and RII requirements, incomplete maintenance logbook entries, Work Cards, or other maintenance records, etc.
    b. Ensure that completed task card steps have been initialed/stamped and/or signed accordingly by the persons who performed or supervised the tasks.
    c. Brief appropriate turnover personnel regarding the following details:
        vi. Status of work completed and not completed and actions to be taken.
        vii. Workload planning and task assignments
        viii. Status of aircraft and aircraft assignments
        ix. Safety issues affecting work area.
    d. The Turnover Log (reference GMM 12.02.20 for form) for mechanics must include adequate descriptions of the following:
        i. Items from previous or present shift that were not completed during the shift.
        ii. A list of any out of service aircraft and a summary of the aircraft status
        iii. Any maintenance requirements assigned for inbound and outbound aircraft.
        iv. Any Required Inspection Items (RII) assigned.
    e. The mechanic accepting the turn-over and completing the task(s) on the next shift will ensure the sign off the remaining individual work steps of the original task card and, upon completing the job, make an entry in the Turn-over Book to signify that the task card has been completed.
    f. Completed Turnover Logs are to be retained for 30 days in the mechanic's office.

3.1.6.3 Turnover Log Procedures

Information will be entered in the Turnover Log as follows:

1. Aircraft registration number.
2. Turnover Date.
3. Name of Mechanic performing the turnover.
4. Logbook, Work order or Task number.
5. Item number from Work Order or Task.
6. Description of work items turned over as incomplete at the end of shift.
7. Signature of Mechanic giving the turnover and going off duty.
8. Signature of Mechanic accepting the turnover and going on duty.

3.1.7 One-Time Approvals

Mukamalah Aviation Company aircraft operated under GACAR 121 Operating Certificate are to be maintained by a GACA 145 Certificated Repair Station. The standard provider of GACA repair station services within the Kingdom of Saudi Arabia is the Mukamalah Aviation Company Repair Station. If the Mukamalah Aviation Company Repair Station is unable to perform a repair service or provide personnel, another GACA Repair Station with the capabilities for that aircraft type is to be used.

If a suitable GACA repair station is not available or if the work to be done can only be accomplished at a non-GACA repair station, the Director of Maintenance will initiate a request for a One-Time Approval from the non-GACA repair station as follows:

1. Verify the non-GACA repair station has an FAA or EASA repair station certificate. If not, contact GACA Repair Station Manager office to discuss the proposed repair facility for possible acceptance.
2. Obtain a digital copy of the following from the repair station:
    a. Repair Station Certificate
    b. Operations Specifications
    c. Repair Station Manual / Quality Control Manual
    d. Capability List
    e. Inspector Roster
3. Send a Letter of Intent and proposed work scope to the repair station.
4. The repair station will then contact GACA Repair Station Manager to coordinate the One-Time approval which will include fee payment for the service.

3.1.8 Airworthiness Release with Different MRO

When maintenance is performed by someone other than an Approved Maintenance Organization (AMO), stricter regulations apply to ensure safety and airworthiness. Here's a breakdown of the key procedures:

1. Approval Process:
    a. Develop a detailed maintenance plan outlining the specific tasks to be performed.

b. Obtain approval for the plan from the GACA based on the aircraft's manuals and manufacturer's recommendations.

2. Qualified Personnel:

   a. Only personnel with the necessary licenses, experience, and training specific to the aircraft type and maintenance tasks can perform the work. Documentation of their qualifications must be readily available.

3. Data and Documentation:

   a. Utilize approved data sources such as Aircraft Maintenance Manuals (AMM), Service Bulletins (SBs), and Airworthiness Directives (ADs) to guide the maintenance tasks.

   b. Maintain meticulous documentation throughout the process, including work performed, materials used, and reference to the approved data sources.

4. Quality Control:

   a. Implement a robust quality control system to ensure the work is completed accurately and in accordance with the approved plan and data sources.

   b. Maintaining a record-keeping system for all maintenance data, plans, approvals, and airworthiness releases is crucial for future reference and audits.

3.2 DEFERRALS AND MINIMUM EQUIPMENT LIST (MEL)

3.2.1 General

The following policies govern dispatch of aircraft with certain equipment in an inoperative condition. Approvals presented herein have been prepared to meet the requirements of current GACA Regulations. Mukamalah Aviation Company will not take off an aircraft with inoperative instruments or equipment installed unless a GACA approved Minimum Equipment List (MEL) exists for that aircraft or the President has issued an authorization to operate the aircraft under the approved MEL.

3.2.1.1 Responsibility of Decision

1. The captain will decide whether to accept an aircraft for flight when maintenance of inoperative items has been deferred, and will only do so if the deferral is correctly documented.
2. It will be the responsibility of the captain to check all placarded items against the GACA approved MEL, CDL, and NEF or other deferral document acceptable to GACA. If the documents do not allow for maintenance of the item to be deferred, or if in the captain's judgment, the aircraft is not safe to fly in the degraded condition in view of climatic conditions enroute, etc., the aircraft must not depart until repairs are made. In such cases, the captain will notify Flight Dispatch and Director of Maintenance regarding his decision.

3.2.1.2 Categories, Intervals, and Time Limits

1. Deferred items that have a time limit specified by GACA regulation (such as deferrals on certain ELT, CVR / FDR, and altitude reporting items) must be repaired or replaced within the time limits specified by the regulation.
2. MEL items categorized with an "A" repair interval must be repaired within the time limit specified for that item.
3. MEL items categorized with a "B", "C" or "D" repair interval are required to be repaired within the MEL stated time limitations.

3.2.1.3 Action Required for Inoperative Items

1. When the aircraft is to be operated with any instrument(s) or item(s) of equipment inoperative, all applicable procedures listed in the applicable deferral documents, such as those in the remarks column (column 4) of the MEL, must be accomplished prior to dispatch. The Captain must ensure that all (M) Maintenance and (O) Operational procedures are accomplished before dispatch.
2. Appropriate action must be taken to assure that no secondary hazard can be introduced by an inoperative component. Therefore, the cause of the trouble must be neutralized, if necessary, by disconnection, deactivation, or removal in order to eliminate any further failures in the system involved. Any action required by the flight crew will be listed in the remarks section of the MEL, CDL, and NEF or other document acceptable to GACA for deferrals.

3.2.1.4 Release of Aircraft with MEL Items Inoperative

1. When special procedures requiring (M) Maintenance action are indicated by the MEL, or other applicable document the aircraft cannot be dispatched from any station until the required (M) MAINTENANCE PROCEDURES have been complied with and recorded.
2. The required (M) item may be accomplished by a flight crew member with the proper training, if the correct tooling is available, and if the item is preventive maintenance under GACAR 1.1 and Part 43, Appendix A, Par. (c).

3.2.1.5 Classification of Flights

1. Ferry flights may be dispatched with less than the equipment herein specified, provided a special airworthiness certificate (Ferry Permit) is obtained from the GACA or GACA DAR. The Director of Maintenance is responsible for obtaining the special flight permit by applying through the GACA e-services portal.
2. Transfer flights must meet all requirements of the MEL, CDL, and NEF and other applicable deferral documents acceptable to GACA.

3.2.1.6 Instruments and Equipment that must not be included in an MEL.

1. Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the aircraft is type certificated and which are essential for safe operations under all operating conditions.
2. Instruments and equipment required by an airworthiness directive (AD) to be in operable condition unless the AD provides otherwise.
3. Instruments and equipment required for specific operations by this part (if available).

3.2.2 Minimum Equipment Lists and Configuration Deviation Lists

These documents are produced by a vendor with input from the Pilots and the Director of Maintenance. Copies of these documents for each aircraft are maintained by the Chief Pilot, the Fleet Captains, Chief Inspector, and Mechanics. An electronic copy is kept on the Company Intranet and distributed with the electronic flight bags maintained by the Fleet Captains.

When a Flight Log Report or Line Discrepancy cannot be cleared due to the lack of parts or time available, the aircraft may be dispatched if it meets the conditions specified in the MEL, CDL, and NEF or another deferral document acceptable to GACA. In such cases, (M) MAINTENANCE PROCEDURES may be required, (O) Operational procedures or limitations may be imposed, or appropriate placards may be required. In all cases, the Flight Crew must be made aware of the malfunctioning equipment or systems.

To ensure that all the necessary information is available to Mechanics and Flight Crews, discrepancies that are not cleared, but do not prevent dispatch of the aircraft under the applicable deferral document, must be recorded on the MEL Logbook Sticker Form 4016 (reference GMM 12.02.05). This form is not intended to replace the Deferred Item Form and procedure, but only to supplement it. If the aircraft is being released under the MEL, CDL, and NEF or other deferral document, a Deferred Item Form List must be completed, in addition to the Deferral Item Form, shown following. When completed, it will be placed on the outside of the front cover of the Flight

Logbook. When the discrepancy is cleared, the form will be removed from the Flight Logbook and destroyed. This form is to be used only for conditions specifically allowed by the deferral document.

Instructions for completing the form are listed in GMM 12.02.05.

3.2.3 Deferred Items

While it is generally Company policy to attempt to correct all mechanical discrepancies as soon as they become known, it is inevitable that some items that do not render the aircraft unairworthy will have to be deferred for correction. These items may be deferred due to a lack of parts, lack of time, or lack of manpower to complete before the scheduled flight time.

3.2.3.1 Procedures and Forms

1. The Director of Maintenance will be responsible for monitoring the implementation of deferral procedures.
2. Before each flight from a station with a mechanic on duty, all line discrepancies and Pilot reports must be cleared, either by correction or by being recorded on a Deferred Item Form. A pad of these forms will accompany the aircraft, attached to the Flight Logbook holder. The forms are intended to be filled out in triplicate. The items are numbered in sequence for use as reference.
3. Whether the discrepancy originates as a Pilot report or a Line squawk, if it is deferred rather than corrected, it must be transferred to the Deferred Items Log before flight. The responsibility for determining that this has been done rests with the individual signing the airworthiness release.
4. When an item is deferred, the reason for deferring will be noted. If an inspection of the unit or area was made, or a functional test performed, this will also be noted and will become part of the report to be recorded on the Deferred Items Form.
5. When an item is transferred to the Deferred item Form, the maintenance logbook will be cleared by stating the reason for deferring and listing the Deferred Item Form Number. The Inspector or Lead Mechanic will sign the maintenance logbook and they will be routed to Records along with the pink copy of the Deferred Item Log. When each of the deferred items is filled out as completely as possible, the first or upper copy (White) will be detached at the perforation and maintained on a designated clip board on the Line. The mechanic will review the deferred items as to action required. If parts are ordered after the aircraft departs, all pertinent information will be entered on the white copy and forwarded to Maintenance and Planning.
6. The Pilot in command originating a flight at a station without mechanics on duty must clear all open reports from the previous crew with a mechanic and so state on the Flight Log page.
7. Whenever an aircraft arrives at a station where personnel and facilities are available, the Deferred Items will be reviewed and corrected if possible. The length of time the aircraft is scheduled to be on the ground and parts availability will determine which items can be corrected.
8. Parts changes and a brief description of work performed will be entered along with the signature of the Mechanic who accepted the work performed.
9. A review of open deferred items in the (green) copy carried with the Flight Log, should be made as frequently as possible and always when the aircraft remains overnight at that station. Any information on parts ordered or additional trouble shooting that has been done should be brought up to date on that

(green) copy. It is important that any information relating to the discrepancy be added to the Deferred Item as soon as it becomes known.

10. In addition to the procedures described items on the Minimum Equipment List (MEL) that require notification of the Flight Crew will require placard on the front cover of the Flight Logbook Holder. The placard shall include the log number on which the item was deferred, the discrepancy, any action taken such as inspection or functional checking, any Flight restrictions, station, and name of the Mechanic deferring the item. When the item is corrected, the placard will be removed and destroyed by the individual signing off the deferred item. This placard does not affect the need to placard some switches or controls as noted in the Minimum Equipment List.
11. The procedure to process the Deferred Item Log is to fill out form in triplicate. The top (white) copy will be removed from the log and remain in the Line office on a dedicated clipboard. Middle (pink) copy is to be removed from the log and attached to the originating logbook entry and sent to Planning. The third (green copy) is to remain in the cockpit Deferred Item Log as an open item until the item is cleared. When the item is cleared, the green copy should be removed from the log and it will be filled out (in addition to the logbook entry for corrective action, including the Deferred Item Form number) and sent along with the white copy to Planning. Planning will file the white and the green copies and discard the pink copy after ensuring the item is complete.

3.2.3.2 Specific Form Instructions.

1. Specific instructions for completing the Deferred Item Form SA 8720 are in GMM 12.02.01.
2. When the deferred item is corrected, the following procedure must be followed:
    a. Clear the Deferred Item Form, green copy, carried with the Aircraft Logbook and the white with a description of the corrective action and sign off (in addition to a logbook entry for the corrective action). Also, remove any applicable placards that are no longer necessary after the corrective action.
    b. Send both the green and white copies to the Fleet Planner. Once the Planner has received all three copies of the item the item will be considered closed. The white and the green copies will replace the pink copy as a Historical Record. The pink copy may now be discarded.
    c. If one station clears an item for which another station holds the original white copy of the item, the Fleet Planner will locate the original white copy and attach it to the green copy for filing.

3.2.3.3 Mukamalah Aviation Company MEL, CDL, and NEF Manual Documents

1. The MEL is a Mukamalah Aviation Company operations document, created and revised by a contract authoring company, under the direction and oversight of the Mukamalah Aviation Company Fleet Captains. The MEL contains the company policies, procedures, as well as company specific maintenance and operations procedures for operating the aircraft with deferred items.

The GACA Approved 121 CDL document developed from the manufacturer's Configuration Deviation List (CDL).

1. The CDL is a Mukamalah Aviation Company operations document, created and revised by a contract authoring company, under the direction and oversight of the Mukamalah Aviation Company Fleet Captains. The CDL contains the company policies, procedures, as well as company specific maintenance and operations procedures for operating the aircraft with deferred configuration items.

NOTE: A CDL may not exist for all aircraft types.

2. CDL items do not have a repair interval and can be deferred indefinitely with the applicable performance penalty applied unless:
    a. The CDL item has a specified repair interval listed OR
    b. The CDL item is deferred as part of an MEL item. In this case, the MEL interval applies to the CDL.
1. The NEF (Non-essential Equipment & Furnishings) Deferral Program is a document that is included as an appendix the MEL which contains the policies and procedures for deferring items which fall under the item listed in each MEL as non-essential equipment and furnishings.

The Operations Specifications (Ops Specs) Paragraph D95 from the GACA which authorizes the use of a Minimum Equipment List (MEL).

3.2.4 MEL Repair Interval Extensions (RIE)

Mukamalah Aviation Company may request GACA approval of an MEL Repair Interval Extension (RIE) past the initial repair interval for category B and C items. Operation of the aircraft past the initial MEL repair interval without obtaining GACA approval of an extension is prohibited. No extensions of category A and D items are permitted, as specified in the approved MEL.

The Director of Maintenance is responsible for compliance with the RIE process for any extension request.

Prior to requesting approval for an extension to a category B or C MEL Item, the mechanic shall explore all available means to correct the item. Once a deferral extension is deemed necessary, a repair plan shall be developed to ensure the minimum extension time is authorized. The repair plan will include the following:

1. Parts necessary to repair the item.
2. Adequate ground time must be planned to provide for troubleshooting, system maintenance, and system operational checks/verification.
3. Necessary mechanics with appropriate qualifications/authorizations to accomplish repairs.
4. Adequate tooling, ground support and test equipment, facilities and materials are available to repair the deferred item.

3.2.4.1 Extension Approval Process

Planning shall determine the need for the extension and obtain approval from the Director of Maintenance or his designee in his absence by completing the MEL Extension Request Form (reference GMM 12.02.19 for form). The form will contain the following information:

1. Airplane type and registration number.
2. MEL item number and repair interval (B or C items only);
3. Date DMI originated.
4. Reason for extension.
5. Parts information (part name/number, date ordered, expected delivery date);

6. Supporting documentation related to the request.

Planning will forward the completed MEL Extension Request form to the Director of Maintenance. If there are no objections, the Director of Maintenance will approve the MEL extension.

The Director of Maintenance will then submit the MEL extension request to GACA PMI by using the MEL Extension E-Service on the GACA portal or by email (if requested by GACA). The notification request will include the documentation and proof of payment as listed on the E-Service.

Once the MEL extension is approved by GACA and received, the MEL may be extended for the authorized period. Documentation of the extension is to be made in the aircraft maintenance log by the mechanic and a copy of the extension approval is to be attached to the log page.

The Director of Maintenance shall retain a copy of all MEL extensions and GACA notifications for a period of one year.

3.2.5 Maintenance Control Center

3.2.5.1 Procedure

1. Upon receiving a request for maintenance (e.g., from pilots, pre-flight inspections, scheduled maintenance), Maintenance Control initiates a work order.
2. Work orders should clearly define the task(s) to be performed, aircraft involved, and any relevant reference materials (manuals, service bulletins).
3. The Maintenance Control Supervisor reviews each work order, ensuring completeness and accuracy.
4. Work orders are prioritized based on urgency (safety-critical issues prioritized), aircraft availability requirements, and scheduled departures.
5. Maintenance Control assigns work orders to qualified maintenance personnel based on their skillsets and task requirements.
6. The assignment process may involve consulting with maintenance planning for personnel availability and technical expertise.
7. Maintenance Control maintains open communication channels with:
    a. Maintenance personnel: Provide clear instructions, updates on task priorities, and address any questions or concerns.
    b. Maintenance planning: Coordinate resource allocation (personnel, tools, parts) and exchange feedback on work order execution.
    c. Quality control: Ensure involvement of quality control personnel for critical tasks as per procedures.
8. Dispatch (scheduled operations): Keep dispatch informed about maintenance progress, potential delays, and estimated completion times to minimize disruption to flight schedules.
9. External vendors (if applicable): Communicate parts requirements, delivery timelines, and any special handling instructions for parts or materials.

10. Maintenance Control ensures all maintenance activities are documented accurately and comprehensively. This includes:
    a. Work order completion records, including personnel involved, parts used, and task sign-offs.
    b. Inspection reports, findings, and corrective actions taken.
    c. Any deviations from planned procedures and justifications for such deviations.
11. Maintain a centralized system for storing and managing all maintenance records, including work orders, inspections, technical logs, and historical aircraft maintenance data.
12. Ensure records are readily accessible for future reference, audits, and technical investigations.
13. Maintenance Control is responsible for ensuring all maintenance activities comply with applicable regulations, industry standards, and company maintenance procedures.
14. This may involve reviewing relevant documentation, conducting audits of maintenance practices, and keeping current on regulatory updates.

3.2.5.2 Safety Oversight

1. Maintenance Control plays a crucial role in maintaining a safe operating environment. This includes:
    a. Monitoring maintenance quality through inspections and audits.
    b. Investigating discrepancies and taking corrective actions to address safety concerns.
    c. Promoting a culture of safety awareness among maintenance personnel.

3.2.5.3 Resource Management

1. Personnel Management:
    a. Track maintenance personnel availability, qualifications, and training certifications.
    b. Coordinate with maintenance planning to ensure sufficient personnel are available to complete work orders efficiently.
    c. Address potential personnel shortages through proactive scheduling or requesting additional resources.
2. Parts and Material Management:
    a. Work with maintenance planning and procurement departments to ensure timely availability of necessary parts and materials for scheduled and unscheduled maintenance.
    b. Maintain a system for tracking inventory levels and identifying potential shortages.
    c. Implement procedures for proper storage and handling of parts and materials to ensure quality and prevent damage.

3.2.5.4 Continuous Improvement

1. Data Analysis
    a. Regularly analyze maintenance data to identify trends, potential areas for improvement, and recurring issues.

2. Feedback Mechanisms:
    a. Establish mechanisms for receiving feedback from maintenance personnel, dispatch, and other stakeholders on the effectiveness of maintenance control procedures.
3. Process Review and Updates:
    a. Conduct periodic reviews of maintenance control procedures to identify areas for improvement.
    b. Update procedures based on data analysis, feedback received, and changes in regulations or industry best practices.

3.3 INSPECTIONS

3.3.1 General Information

Under the authority of the Mukamalah Aviation Company Director of Maintenance, the Chief Inspector has the final authority and responsibility for making decisions regarding the airworthiness of aircraft and their approval for release and return to service.

The captain makes the final decision regarding accepting the aircraft for its intended flight.

3.3.1.1 Inspection Policies

1. In addition to the items on the RII List, mechanics should also consider utilization of double-checks for items when there is reason to believe that working conditions and / or available skills are likely to result in error.
2. All torquing of safety critical bolts and fasteners will require applied torque seal after the item is torqued.
3. Non-RII operational and functional tests will be observed by a mechanic.
4. Defects found between inspections, or because of inspection, have been corrected in accordance with GACAR Part 43.

3.3.1.2 General Procedures for Performing Inspections

1. All inspections performed on Mukamalah Aviation Company aircraft are to be done per the policies and procedures set forth in this manual in addition to those of the respective fleet's aircraft inspection program (AIP).
2. The primary maintenance provider is the Mukamalah Aviation Company Repair Station (Dammam, Ras Tanura, Tanajib). Policies and procedures described in their GACA accepted Repair Station Manual and Quality Control Manuals meet or exceed those of this manual (refer to GMM 3.4) and are accepted through a maintenance agreement.

3.3.1.3 Aircraft Approval for Return to Service

1. Each aircraft issued an airworthiness release is airworthy and has been properly maintained for operation under part 121.679.
2. All inspection paperwork is to be accounted for and completed, including signature of approval for return to service, prior to the aircraft being released to service. Exceptions to this requirement are those inspection items which require the aircraft to be flown to verify proper operation or to be tested in flight only.
3. The Fleet Planner will update the computerized tracking system for activities performed. Due to the complexity of the updates to be performed, the tracking system does not need to be updated prior to the aircraft being flown after an inspection is completed or for a check flight.
4. In cases where an aircraft is to be flown to verify proper operation of a system, the aircraft may be approved for return to service but limited to a check flight. This entry is to be documented in the aircraft maintenance logbook as described in GMM 06-06-02 or 06-07-02 as applicable. An example of a limited check flight is dynamic track and balance. This can only be performed with the aircraft in flight.

5. After the check flight is complete and any discrepancies noted during the flight are repaired or properly documented as deferred, the aircraft can then be approved for return to (normal) service.
6. The Director of Maintenance will notify Dispatch / Aircraft Scheduling that the aircraft is released.

3.3.2 RII Inspections

Required Inspection Items, commonly known as RIIs, constitute a crucial element within the comprehensive aircraft maintenance and inspection program at Mukamalah Aviation. These items represent specific inspections designated as mandatory to ensure the continued safe operation of the aircraft until the next scheduled inspection cycle.

The inspection is conducted by a qualified and authorized personnel independent of the original task execution (RII Inspector).

The RII Inspector must not have been involved in the maintenance task to certify the RII of the maintenance tasks.

The specific RIIs applicable to each aircraft are determined by various factors, including the aircraft type, manufacturer's recommendations, and regulatory requirements. These mandatory inspections are clearly outlined in the designated technical manuals and procedures established by Mukamalah Aviation. The individual responsible for releasing the aircraft for service bears the critical responsibility of ensuring that all relevant RIIs have been thoroughly inspected and documented as compliant with established standards.

MAC achieves adequate facilities and equipment to perform required inspections for maintenance staff.

3.3.2.1 Required Inspection Item (RII) List

3.3.2.1.1 Airworthiness Directives (A.D)

1. Inspections and inspections of maintenance work that are required by an applicable Airworthiness Directive.
2. Completion of any records stating whole or partial compliance with an Airworthiness Directive, recurring with next inspection due, or terminated with no further action required.
3. Recording of AD's that are Not Applicable (N/A) are exempt from RII requirements.

3.3.2.1.2 Major Repairs and Major Alterations

1. Any repair or alteration that would appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness, or that is not done per accepted practices, or cannot be done by elementary operations.

CAUTION: INSPECTORS PERFORMING AND SIGNING FOR CONFORMITY INSPECTIONS OF MAJOR REPAIRS ON GACA 8320-1 MUST ALSO BE AUTHORIZED PERSONS.

3.3.2.1.3 Designated Inspection Checklist or Task Card Items

1. For Boeing 737-800 AIP: the RII designation will be on the first page of the task card. Therefore, all steps within that task card (regardless of action or severity) are to be considered as RII.

2. For all other fleet types: the RII designation will be on the particular line item of the checklist. Therefore, any actions (inspections, functional checks, etc…) to perform the required line item on that checklist are to be considered as RII.

3.3.2.1.4 ATA Chapters

Chapter 22 – Autopilot System

1. Autopilot actuators rigging, adjustment, replacement or re-installation.
2. Autopilot control cables rigging, adjustment, replacement or re-installation.
3. Autopilot pulleys, linkages, hinges, and rods rigging, adjustment, replacement or re-installation.
4. Autopilot servo rigging, adjustment, replacement or re-installation.

Chapter 25 – Furnishings & Equipment

1. Rescue hoist installation.

Chapter 26 – Fire Protection

1. Engine, APU and Cargo Fire bottles and squibs replacement or re-installation

Chapter 27 – Flight Controls

NOTE: Includes ailerons, elevators, rudders, trailing edge flaps, leading edge devices, spoilers, stabilizers, and tabs.

1. Installation, adjustment, rigging, or test of any flight control system, surface, or component.
2. Complete system rigging
3. Control cable - installation or rigging.
4. Control rod - installation or rigging.
5. Flight control actuators, dampers, or absorbers (hydraulic, electrical or mechanical) – installation, adjustment, rigging, or test.
6. Power control units, feel centering unit, feel computer - installation/rigging.

Chapter 28 – Fuel

1. Fuel line installation.
2. Boost pump installation.
3. Fuel cell installation or inspection.
4. Fuel shut off valve installation.
5. Fuel filter installation or inspection.

Chapter 29 – Hydraulics

1. Installation or test of air driven generator/ram air turbine
2. Hydraulic line and connectors installation
3. Hydraulic pump installation (engine or electrical pump)
4. Hydraulic filter installation or inspection

5. Hydraulic shut off valve installation.

Chapter 32 – Landing Gear

Installation, adjustment, or test of a landing gear assembly and activating components; including the following systems and components:

1. Control cable system.
2. Control lever assembly.
3. Selector Valve; or
4. Nose and main landing rear retract actuators, uplock and downlock actuators, doors and door actuators.
5. Whenever a retraction check is required following a maintenance task

Chapter 34 – Navigation

1. When any pitot or static systems is opened to an instrument or system
2. When any standby instrument system pitot or static system is opened

Chapter 36 – Pneumatic

1. Isolation valves replacement or re-installation

Chapter 49 – Auxiliary Power Unit

1. APU replacement or re-installation

Chapter 52 – Doors

1. Passenger, Cargo, or Emergency Exit door rigging, adjustment, repair, alteration, replacement, or re-installation

Chapter 56 – Windows

1. Windshield and flight deck windows replacement or re-installation
2. Passenger cabin windows replacement or re-installation
3. Passenger entry, service, or emergency exit door window replacement or re-installation

Chapter 71 – Powerplant

1. Any required power assurance runs.
2. Engine installation
3. Control cable / rod - installation or rigging.
4. On either power plant, module or major flange assembly after engine repair.
5. Individual fan blade or fan section installation and static or dynamic trim balance check.
6. Variable static vanes/variable bleed valve system installation or rigging.
7. Fuel control installation/rig or trim.
8. Transfer or accessory gear box installation.
9. Engine modules – installation, adjustment, rigging, test, and special inspection.

10. Engine component and accessories installation that could cause fuel or oil leaks if improperly installed.

Chapter 76 – Engine Controls

1. Engine control component installation, adjustment, rigging, or test.
2. Engine control rod installation, adjustment, rigging, or test.

Chapter 78 – Exhaust

1. Thrust Reverser rigging, adjustment, replacement or re-installation.

3.3.2.2 Controls

To ensure the effectiveness of the Required Inspection Item (RII) process, Mukamalah Aviation has established several key control mechanisms:

1. The Chief Inspector conducts a comprehensive audit and grants approval of the inspection system. This audit verifies the system's alignment with the RII requirements outlined in this section. Critical aspects assessed during the audit include:
    a. Separation of Duties.
    b. Inspection Continuity.
    c. Inspector Qualification.
2. RII inspectors are formally submitted to the Chief Inspector.
3. Documentation and Recordkeeping:
    a. Aircraft Technical Log Entries.
    b. Dedicated RII Record.
4. Planning ensures that RII requirements are embedded directly into the source maintenance task cards before they are issued.
5. Independent Inspections:
    a. Establish a separate Inspection Unit to conduct all required inspections.
    b. Maintenance personnel notify the Inspection Unit upon completing a work task.
    c. Independent Inspector Assignment.
    d. The inspector documents their findings.
    e. Address any discrepancies before finalizing the work.

3.3.2.3 Buy Back Procedures

Upon completion of an RII inspection:

1. Acceptable Condition:
    a. The authorized inspector signs off in the designated block on the work card or ATL (Aircraft Technical Log).
2. Unacceptable or rejected Condition:

a. The authorized inspector creates a new discrepancy for the deficient item.

b. They indicate the need for additional work adjacent to the original corrective action.

3. If the item is RII, the new discrepancy is also treated as an RII item.

3.3.3 Aircraft Inspection Programs (AIPs)

The Mukamalah Aviation Aircraft Inspection Program is designed to ensure the continued safe operation of all aircraft within the fleet. This objective is achieved by implementing a comprehensive program of detailed inspections that meticulously examines all critical aircraft components and systems. These inspections, conducted at prescribed intervals, guarantee that every aircraft released for service meets the rigorous airworthiness standards established in designated manuals.

Mukamalah Aviation assumes full responsibility for performing all aircraft maintenance and inspections within the parameters of their official approval. This implies that they possess a team of highly qualified and extensively trained personnel equipped with the necessary tools and specialized equipment to conduct these critical tasks effectively and efficiently.

All maintenance and inspection personnel within Mukamalah Aviation are required to meticulously follow the approved Aircraft Maintenance Programs (AMPs) specifically designated for each aircraft within the fleet. These AMPs are clearly outlined within the organization's Operations Specifications (OpSpecs), ensuring consistency and adherence to established safety protocols.

The GACA approved inspection program contains the applicable inspections, procedures, and limitations for fuel tank system inspections.

the GACA approved inspection program for the Boeing 737-800 must contain the equipment and inspection requirements for Ignition Mitigation Means (IMM) or Flammability Reduction Means (FRM) that meet the requirements of GACAR 26.33 and 121.381.

3.3.3.1 Responsibilities of Maintenance Planning

The Maintenance Planning department shoulders significant responsibility within this program. Their key functions include:

1. Issuing work packages
2. Supplementing work scopes
3. Providing additional documentation

3.3.4 Aircraft Weighing

Aircraft maintained under a GACA AIP are to be re-weighed using the aircraft maintenance manual, aircraft mass and balance manual, airplane flight manual, type certificate data sheet and/or other guidance acceptable to GACA as appropriate. After re-weighing, Chief Inspector is required to check the results for correctness and consistency and calculate the new BEW (basic empty weight) and CG (center of gravity).

After completion of BEW calculation (either after re-weigh or after re-calculation for weight changes associated with repairs or alterations) Chief Inspector will revise the BEW and CG per the following process:

1. Chief Inspector performs re-calculation of the Basic Empty Weight on the Mass and Balance Computation using the Excel form. The Excel document is converted to pdf format after completion.
2. Chief Inspector will email a pdf of the Mass and Balance Computation Sheet to the following persons/groups:
    a. Fleet Captain
    b. Chief Pilot
    c. i-Pad Administration Group
    d. Dispatch
3. I-Pad Administration Group is responsible for ensuring that the revised Mass and Balance Computation Sheet is uploaded to all the fleet pilot's i-Pads. Refer to the Mukamalah Aviation Company Flight Operations Manual (FOM) 3.4.6 for Company Issued iPads policy.

For aircraft operated under a GACA approved Aircraft Inspection Program (AIP), an aircraft weighing interval included in the AIP may not be waivered (beyond the time extension allowed by the short-term escalation tolerances within the program) unless the Accountable Executive authorizes company representatives to request a waiver from GACA and GACA subsequently approves the waiver. A copy of the waiver approval document must be placed in the aircraft records.

3.3.5 GACAR Required Inspections

3.3.5.1 Empty Mass and Balance

1. All Mukamalah Aviation Company aircraft operated per GACAR 121 must be weighed every 36 months per GACAR 91.11 by using an actual weighing method detailed in the aircraft manufacturer's procedures on scales which have a valid calibration within the past 12 months and with an accuracy of 0.1%.
2. Mukamalah Aviation Company does not use the option of average fleet weights. All aircraft must have an actual weighing performed.
3. If an aircraft has been issued an original airworthiness certificate in the preceding 36 months, a weighing is not required if a valid weighing has been recorded.

3.3.5.2 VOR Check

1. All Mukamalah Aviation Company aircraft must have a VOR check performed every 30 days. This is performed by the flight crew using the signals and procedures described in GACAR 91.187 (b) or (c) as applicable and recorded in the aircraft flight log.
2. VOR equipment installed in aircraft is to be maintained in accordance with the aircraft manufacturer's maintenance manual instructions and inspection programs.

3.3.5.3 Altimeter System and Altitude Reporting Test and Inspection

1. All aircraft must have a test and inspection of each static pressure system, altimeter instrument, and each automatic pressure altitude reporting system altitude performed every 24 months per GACAR 91.451 and 43 Appendix D and E.

2. Except for system drain and alternate static pressure valves, if any opening or closing of the static pressure system occurs, the tests specified in GACAR 43 Appendix D must be performed.
3. Following installation or maintenance on the automatic pressure altitude reporting system of the ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with paragraph (c) of GACAR Part 43 Appendix D.
4. Tests and inspections must be conducted by a person that meets the requirements of GACAR 91.451(b).
5. Altimeter and altitude reporting equipment approved under TSOs are considered to be tested and inspected as of the date of their manufacture.
6. No person may operate an airplane in controlled airspace under IFR at an altitude above the maximum altitude at which all altimeters and the automatic altitude reporting system of that airplane have been tested.

3.3.5.4 Flight Recorder and Cockpit Voice Recorders

1. The flight recorders will be inspected annually to ensure that the recorder operates correctly for the nominal duration of the recording per GACAR 91.452 (a). The Flight recorder systems will be considered unserviceable if there is a significant period of poor quality data, unintelligible signals, or if one or more of the mandatory parameters is not recorded correctly. A report of the annual inspection will be maintained in the aircraft records.
2. The flight data recorder system will be recalibrated at least every 5 years (or in accordance with sensor manufacturer recommendations) for sensors only dedicated to the FDR and not checked by other means or at least every 2 years (or in accordance with sensor manufacturer recommendations) when the parameters of altitude and airspeed are provided by sensors that are dedicated to the FDR system.

3.3.5.5 ATC Transponder Tests and Inspections

1. All aircraft must have a test and inspection of each ATC Transponder performed every 24 months.
2. The tests and inspections required by GACAR Part 43 Appendix D must be performed following any installation or maintenance on an ATC transponder where data correspondence error could be introduced.
3. Tests and inspections must be conducted by a person that meets the requirements of GACAR 91.453(c).

3.3.5.6 Emergency Locator Transmitter (ELT) Tests and Inspections

1. Each ELT installed on aircraft must operate on 406 MHz and 121.500 MHz simultaneously and must meet FAA TSO-C126 (406 MHz) and FAA TSO C91a (121.500 MHz)
2. Each ELT (including those installed in life raft assemblies) must be registered with GACA prior to installing it on the aircraft using the GACA Form F260, latest revision.
3. ELT batteries must be replaced (or recharged if rechargeable style):
    a. When transmitter has been in use for more than 1 cumulative hour
    b. When 50 percent of useful life (or 50percent of recharge life) has expired.
4. The new expiration date for replacing the battery must be legibly marked on the outside of the transmitter and entered in the aircraft maintenance records.
5. ELT's must be inspected every 12 months for:
    a. proper installation,
    b. battery corrosion,
    c. operation of the controls and crash sensor, and
    d. presence of sufficient signal from the antenna.

3.3.6 Emergency Equipment Expiration Markings

All emergency equipment in the passenger compartment or flight compartment must have a placard, sticker, or legible marking on it such that the expiration date of the item is easily readable and identifiable to flight crew and mechanics. Items which require a sticker to be applied are.

Refer to GMM 12.02.21 for a standard Expiration Sticker to be affixed to the following items along with the required information.

1. Life vests (crew and passenger)
2. First Aid Kits
3. AED's
4. Fire Extinguishers
5. Portable oxygen cylinders

3.4 CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM

3.4.1 Introduction

Mukamalah Aviation prioritizes the safety and airworthiness of its entire fleet by utilizing a robust Continuous Airworthiness Maintenance Program (CAMP) system. This comprehensive program encompasses the meticulous management of both recommended and mandatory maintenance for all aircraft, engines, and individual components. Furthermore, Mukamalah Aviation adheres to a rigorously vetted Aircraft Inspection Program (AIP) Manual.

Each inspection program must contain all the scheduled and event-based inspection requirements for the airframe, engines, appliances, survival and emergency equipment, and parts thereof, including airworthiness limitations and life limits.

Applicable FAA Airworthiness Directives (ADs) and AD's issued by state of design must be accomplished in accordance with the AD instructions or an FAA approved Alternate Method of Compliance (AMOC).

Service Bulletins, Service Letters, and other similar service documents will be reviewed by Engineering. If the work is needed or desirable, Engineering will issue a Maintenance Technical Directive (MTD) to mandate compliance.

Mukamalah Aviation compliance with the relevant directives set forth in the appropriate maintenance programs. This includes, but is not exhaustive of, updating maintenance schedules and integrating any design modifications or revisions to the Instructions for Continued Airworthiness (ICA).

3.4.2 Inspections and Maintenance Monitoring and Scheduling

3.4.2.1 Scheduled Inspections

1. Planners will monitor aircraft and equipment for upcoming scheduled inspections, time changes, service changes, special work projects, and other scheduled items and will schedule the aircraft or equipment to be removed from service before the due time is exceeded.
2. Upon completion of the inspections and maintenance, the mechanic on duty will notify the Planner that the aircraft is ready for return to service.

3.4.2.2 Unscheduled Inspections

1. Mechanics will monitor aircraft and equipment for unscheduled events that come due during the time the aircraft or equipment is in service.
2. These unscheduled events include inspections and other maintenance items for which no regular interval is established, but are instead due upon the occurrence of an unscheduled event such as a pilot reported discrepancy (PIREP), maintenance reported discrepancy (MAREP), or special events such as lightning strikes, hard landings, salt-water immersion, mercury spillage, altitude keeping errors, etc., and other such events listed in this GMM, other Mukamalah Aviation Company manuals, the manufacturers' data and documents, and in GACA regulations and guidance.

3. Upon occurrence of an unscheduled event, maintenance must be accomplished and the maintenance records completed prior to the next flight. Eligible items may be deferred if properly documented in the maintenance record.
4. Upon detecting the occurrence of an event that causes the aircraft or equipment to need maintenance or inspection, the mechanic will remove the aircraft or equipment from service by ensuring the necessary record entries are made in the logbooks.
5. If possible, a mechanic will arrange for immediate completion of the unscheduled task and approval for return to service. Otherwise, the mechanic will check eligibility of the item for deferral, and if eligible, will ensure that it is appropriately deferred and recorded as such.
6. Mechanics will notify Planning if the item cannot be immediately completed. As soon as practicable, Engineering will arrange for the necessary facilities, personnel, technical data, parts and materials, and tools and equipment to be brought together to perform the needed work. They will jointly work together to take the actions necessary to ensure the appropriate inspections, maintenance, and records are accomplished prior to approval of the aircraft or equipment for return to service.

3.4.3 Scheduled Inspection Intervals

1. For aircraft and equipment covered by a GACA approved Aircraft Inspection Program (AIP), scheduled inspections will be carried out at an interval that is approved by the GACA.
2. If the company finds it necessary to perform a manufacturer recommended scheduled inspection at an interval more frequently than recommended, Engineering will issue an MTD to direct that the shorter interval be used. The inspection program will then be revised and must be approved by GACA for the new interval to take effect.

3.4.4 Short Term Escalations

1. The use of short term escalations (STEs), commonly referred to as maintenance extensions or tolerances, occasionally becomes necessary and can be permitted in certain circumstances.
    a. STEs may be used when unanticipated situations emerge, such as vendor maintenance re-scheduling issues, unscheduled maintenance issues on other aircraft, operations impacted by short term weather conditions, delays in parts deliveries, etc.
    b. STEs may not be used to compensate for sudden flight scheduling requirements, poor maintenance practices, aircraft inspection program (AIP) deficiencies or poor AIP management. An STE cannot be authorized after item / task has already exceeded the standard AIP limitation.
2. STEs may be used only as described in the applicable AIPs. STEs which fall outside of the extension / tolerance limitations listed in the AIPs may only be used if, In the case of a GACA approved AIP, STE is approved in writing by GACA
3. The following tasks / intervals may not be escalated beyond the stated time limits without specific written approval from GACA:

    a. Intervals specified by FAA Airworthiness Directives or AD's from the state of design;

b. Life limits / airworthiness limitations specified by the applicable FAA or EASA Type Certificate Data Sheet;

c. Maintenance / inspection tasks / intervals specified by a GACAR (e.g. 91.451, 91.452, 91.453, 91 Appendix C-V etc.);

d. MMEL repair intervals specified by the GACA approved MEL;

e. Structural sampling periods imposed by Maintenance Review Boards;

f. Certification Maintenance Requirements (CMRs), unless specifically allowed and designated by the CMR document; and

g. Fuel system airworthiness limitations (FSLs) and critical design configuration control limitations (CDCCLs).

If an STE is to be applied to a check package (e.g. A check, C check) which contains any of the above listed item, and application of the STE would result in exceeding the stated time limit for that task, the task must be completed prior to use of the STE. The task must then be repeated during completion of the check package.

4. No STEs are to be used without the concurrence of the Director of Maintenance and the authorization of Chief Inspector. The procedure to be followed for each occasion when an STE is to be used is as follows:

   a. Planning identifies the need and justification for use of an STE, identifies in the applicable AIP the amount of tolerance which can be used, recovers records for the last two subject maintenance / inspection events on the applicable aircraft / equipment and initiates a Mukamalah Aviation Company Short Term Escalation Authorization form with the supporting data and records attached. The relevant Senior Planner signs the form and routes it with supporting data to the Director of Maintenance.

   b. The Director of Maintenance signs the Short Term Escalation Authorization form to record his concurrence with use of the STE and routes it to Chief Inspector.

   c. Chief Inspector re-checks the request to ensure it is within the permissible limits of the applicable AIP and the applicable GACARs. Chief Inspector then signs the Short Term Escalation Authorization form to authorize use of the STE and returns it to the Fleet Planner.

   d. The Fleet Planner then arranges the completion of any tasks which must be performed before the STE can be used, if completion of any such tasks is indicated on the Short Term Escalation Authorization form.

   e. After completion of the tasks identified in the step above, the Fleet Planner may then update the computerized maintenance tracking system to reflect the escalated due dates / times of the relevant checks or tasks.

   f. After the escalated checks / tasks have been completed, the Fleet Planner must adjust the next due dates / times in the computerized maintenance tracking system to deduct any escalation used from the next interval. He records completion of the tracking adjustment by signing the Short Term Escalation Authorization form and files the completed form in the permanent aircraft records.

3.4.5 Inspection Program Task Cards, Checklist Forms, and Packages

1. When available, pre-written Aircraft Inspection Program (AIP) task cards or inspection checklist forms will be used to comply with the requirements of the inspection programs.
2. Each card or form must state the task name or description, and the complete scope and detail of the inspection (or a reference to the technical data to be used to perform the inspection).
3. These forms may be prepared by Mukamalah Aviation Company, provided by the manufacturer, or supplied by other outside vendors.
4. Any removal of tasks, or permanent additions of tasks, or revisions of task intervals made to the GACAR Part 121 Inspection Programs must be approved by the GACA. Chief Inspector will obtain the necessary approval from the GACA.
5. Planning will issue an inspection package for every scheduled inspection that will consist of the following:
    a. A list of maintenance inspections due and additional opportunity tasks within the project work scope (the list may take the form of a tally sheet or other controlling document);
    b. Task cards or inspection checklist forms.
    c. Aircraft Maintenance Logbook (or system generated version); and
    d. MTD compliance forms with associated documentation.
6. Planning will deliver an inspection package to the mechanics for their review and assessment of manpower and material requirements.
7. During a scheduled inspection, it will be the responsibility of the mechanics to keep track of all task cards, inspection checklist forms, and other paperwork while the inspection is in progress.
8. As cards are completed, they are delivered to Planning. These cards will be arranged so that time-controlled items may be updated.
9. When the inspection is completed and all data called for on the form is properly filled in by the mechanic and inspector, the form must be returned to the Planning, for further processing.
10. Inspections, i.e. "A", "B", "C", "D", "E" Checks, 100-hour Checks, must be signed off by both maintenance and inspection prior to returning the aircraft to service.

    Exceptions are line maintenance checks such as Daily, Pre-Flight, and Transit checks. These checks may be signed by a mechanic alone. They do not require an inspector to also sign.
11. Upon completion of an inspection, a person authorized per GACAR 43.3 (ie: holder of an GACAR A&P, GACAR Certified Repair Station, etc.) will sign the inspection off in the maintenance logbook and on the back of the current aircraft flight log page using a stamped or previously printed statement that says the inspection was accomplished according to GACAR requirements.
12. Chief Inspector (or designee) will review the completed inspection package for accuracy and completeness, including accountability of all issued and system generated maintenance logbook entries and other forms before it goes to Planning for final processing.

13. A signed and dated listing of any defects not corrected during the inspection shall be provided to the Planning Unit. These items must be properly deferred before the aircraft can be released. The original copy shall be maintained on file as a permanent record.
14. Mechanics will route the completed inspection package to Planning.
15. Once all updating is complete, the completed inspection package is filed with the aircraft's maintenance records.
16. All orders will be verified closed and maintenance plans updated (if required) in the applicable computerized maintenance tracking systems. Once all orders are verified completed, the Fleet Planner will close the project in the system.
17. Retention and disposition of inspection program cards and forms, and other maintenance records will be the responsibility of the Director of Maintenance and will be monitored by Chief Inspector.

3.4.6 Human Factors Principles

1. Mukamalah Aviation prioritizes safety by ensuring all employees understand their individual responsibility. The company fosters an environment where employees feel empowered to voice concerns and take necessary actions to address any unsafe conditions they encounter.
2. To promote transparency and facilitate timely corrective actions, Mukamalah Aviation actively encourages employees to report any maintenance errors they make or witness.
3. Recognizing the critical role of a robust safety culture, Mukamalah Aviation has established a comprehensive framework to continuously elevate and maintain exceptional aviation safety standards.

3.5 CHECK FLIGHTS

3.5.1 Policy

1. The purpose of a check test is to confirm the airworthiness of an aircraft, aircraft engine, or aircraft component on which maintenance was performed that may have changed its flight characteristics.
2. A "Check Flight" is required when a repair or alteration has been accomplished that may have appreciably affected the flight characteristics or when proper operation of a system cannot be determined on the ground. In maintenance, this determination will be up to the Director of Maintenance or Chief Inspector.
3. Check flights will normally be conducted as required by each airframe or engine manufacturer in accordance with the relevant technical and operational manuals.
4. Before a check flight is conducted, the aircraft must be airworthy, maintenance documentation completed, and approved for return to service. For those inspection or maintenance items which cannot be completed until a check flight is performed (example: King Air autopilot altitude hold check), an entry in the aircraft logbook is to state: "Aircraft is approved for return to service limited to a check flight, no passenger service permitted."
5. Check flights that require a mechanic to be present will include a person qualified (normally an aircraft inspector) to verify the proper function of the aircraft and its components.
6. All check flights conducted will be planned and performed in such a manner so as to complete the flight in the shortest period of time to conserve fuel, wear and tear, etc.
7. The check flight profile must be within normal flight criteria or an approved Acceptance Flight Profile.
8. All discrepancies found on a check flight will be corrected before the next flight unless it is determined by the mechanic that the discrepancy does not adversely affect the airworthiness of the aircraft and/or can be deferred (see MEL policies).
9. After successful completion of check flight, the aircraft can be placed into normal service.

3.5.2 Check Flight Logbook Entries

1. Mechanic will make a single aircraft maintenance logbook entry in the "Discrepancy" block stating that a check flight is required and the specific purpose of the check flight.
2. After the check flight is performed, the pilot will document the following in the "Corrective Action" portion of the aircraft logbook:
    a. Check flight performance results (satisfactory or unsatisfactory). If unsatisfactory, provide detailed description of discrepancies observed.
    b. The pilot's signature and pilot certificate number
3. The Pilot will enter the Aircraft total time and cycles in the applicable blocks.
4. If the check flight is satisfactory, the mechanic will document "Information Noted and Recorded. Aircraft approved for return to service" below the pilot's entry in the "Corrective Action" portion of the aircraft logbook. He will then sign the "Mechanic" block and record his certificate number and date.

5. If the check flight is unsatisfactory, reference is to be made to the next aircraft maintenance logbook entry for the discrepancies to be corrected. If the further discrepancies require an additional check flight, steps 1 to 3 above are to be repeated.

3.6 PREVENTIVE MAINTENANCE

3.6.1 General

Preventive Maintenance: Simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.

Refer to the latest amendment of GACAR 43 Appendix A "Major Alterations, Major Repairs, and Preventive Maintenance" for the list of items that the GACA considers to be preventive maintenance.

3.6.2 Policy and Procedures

Mukamalah Aviation Company Mechanics certificated per GACAR Part 66

1. All GACA certificated mechanics and inspectors are permitted to perform preventive maintenance as part of their normal duties.

Mukamalah Aviation Company Pilots certificated per GACAR Part 61

1. It is Mukamalah Aviation Company policy to have all maintenance and preventive maintenance performed by certificated mechanics and/or GACA 145 Certificated Repair Stations.
2. Pilots are to communicate all maintenance requests to the mechanics on duty.

Technical Data and Documentation

1. When performing preventive maintenance, the applicable manufacturer's technical data shall be used.
2. In the absence of manufacturer's technical data, other data acceptable to the GACA President per GACAR 43 may be used provided the following steps have been taken:
    a. Chief Inspector has been consulted to determine if the use of the data is appropriate.
    b. An approval has been obtained from the manufacturer if the actions to be taken are deemed by Chief Inspector to require manufacturer's technical opinion.
    c. Documentation of preventive maintenance shall follow the requirements of GACAR 43.9 and GMM 09-01-03.

3.7 TECHNICAL DISPATCH

3.7.1 Overview

Mukamalah Aviation Company ensures that its aircraft are operated in an airworthy condition and are appropriately configured by coordinating its efforts across the various divisions as shown in the Organization Chart

3.7.2 Policy

No Mukamalah Aviation Company aircraft shall be released from maintenance for return to service unless it is in an airworthy condition.

In all cases where there is a necessity to resolve an airworthiness issue or make an airworthiness determination, the Director of Maintenance shall make the final decision after consulting with Chief Inspector.

After the airworthiness decision by maintenance, the PIC is responsible for determining whether that aircraft is in condition for safe flight. The PIC must discontinue the flight when unairworthy mechanical, electrical, or structural conditions occur.

Flight crews and maintenance/inspection personnel are to follow the “one squawk, one entry” rule. If multiple defects are observed, one entry is to be made in the maintenance logbook for each defect.

3.7.3 Criteria and Responsibilities

The following chart illustrates the airworthiness criteria necessary for an aircraft to satisfy the requirements for technical dispatch and the area responsible for each individual criteria.

Criteria	Responsible Area
Compliant with Maintenance Control System	Director of Maintenance
In an airworthy condition for intended use	Maintenance
Appropriately equipped, configured and serviced (as directed by Dispatch and communicated by Planning to Maintenance)	Maintenance
Maintained in accordance with the inspection program	Director of Maintenance
Required records are complete per GACA and Mukamalah Aviation Company requirements	Planning
MEL procedures are followed and documented	Maintenance
Requirements of State of Registry are met	Chief Inspector
Maintenance Release is signed and complete	Maintenance

3.7.4 Procedures

3.7.4.1 Flight Schedule Communication

1. Planning receives the flight schedule from dispatch for each aircraft's activities for the coming week.
2. Planning reviews the schedule to determine if there are conflicts related to scheduled maintenance. Conflicts are resolved through additional communication between Planning and Dispatch.
3. Planning communicates any special configuration requests to mechanics so the aircraft can be configured.
4. Based on the flight schedule, Planning makes any final adjustments to scheduled maintenance down-time.

3.7.4.2 Airworthiness

1. Planning reviews the maintenance tracking system and runs a daily due list to get a snapshot of items that are coming due.
2. Chief Inspector monitors the maintenance tracking system for compliance with regulatory requirements and inspection programs compliance. Potential findings are raised to Planning for resolution.
3. Planning produces a Daily Report which shows aircraft out of service, MEL items, and the status of parts on order. This report is sent to management so they can make scheduling changes, if necessary. The Director of Maintenance ensures manpower or allocation of resources to ensure the appropriate actions are taking place.

4. Mechanics perform scheduled and unscheduled maintenance on the aircraft to ensure the aircraft is maintained in accordance with its inspection program and that pilot / maintenance write-ups are resolved through troubleshooting, parts replacement, or placing an item on MEL.
5. Mechanics sign the airworthiness release on the flight log to certify that the aircraft is ready for dispatch.
6. Dispatch is advised by the mechanic that the aircraft is available for service.

3.7.5 Procedures for Defect Reporting by Flight Crews

3.7.5.1 Unscheduled maintenance required to rectify defects identified and recorded by flight crews (at home base – KFIA, RT, TAN)

1. AAD and HAD flight crews are required to record all unusual operational events they encounter as well as failure or inoperability of aircraft systems. Recording is to be performed immediately upon being identified unless the aircraft is being operated. If this is the case, the recording is to be performed when the aircraft has come to a complete stop, the engines are shut down, and the aircraft is safe for entry.
    a. Unusual operational events may include but are not limited to high turbulence, heavy or hard landing, rejected takeoff, bird strike, lightning strike, hail strike, and operational exceedance.
    b. Failure or inoperability events may include but are not limited to:toult lights, caution and warning messages/lights, systems disengagement or malfunction, passenger cabin and galley item defects.
2. The flight crew is responsible to call Mukamalah Aviation Company Maintenance at the respective base via radio to advise them of the discrepancy. If the discrepancy is prior to departure, the flight crew will notify dispatch if passenger boarding is to be delayed or halted pending maintenance action.
3. The Director of Maintenance is responsible for ensuring a mechanic is promptly dispatched to the aircraft to review the write-up in the aircraft maintenance logbook and obtain any additional information from the flight crew related to the discrepancy. If an inspection is required, he will coordinate the performance of any necessary inspection (which is determined by consulting the applicable AIP and/or the applicable manufacturer's ICA and/or by obtaining relevant inspection data from the manufacturer) and rectifying all defects found during the course of the inspection.
4. The mechanic is responsible for evaluating the discrepancy and notifying the Director of Maintenance (or designee) of the actions needed to approve the aircraft for return to service.
5. After the discrepancy has been evaluated, the mechanic will take the following actions:
    a. Notify the flight crew and dispatch if the discrepancy requires the aircraft to be taken out of service for repair or if the anticipated repair will result in a departure delay.
    b. Notify the flight crew and dispatch as soon as the discrepancy is corrected or if deferred per the MEL.
6. If an item is placed on MEL and results in an operational restriction such as "Operations are not Conducted at Night", "RVSM Operations are not conducted" or "APU Inoperative" the flight crew will notify dispatch so that flight plans and ground crew at the arrival destination can be prepared for operational impacts.
7. After completion of all required inspection or maintenance actions, the mechanic is required to check that the work performed has been properly documented in the maintenance logbook with reference to

GACA acceptable data (or per the AIP and manufacturer's ICA) before the aircraft is approved for return to service.

8. Completed work forms are then routed to Planning for input of relevant information into the CMTS and filing with the aircraft records.

3.7.5.2 Unscheduled maintenance required to rectify defects identified and recorded by flight crews (In-Kingdom and away from home base)

1. AAD and HAD flight crews are required to record any and all unusual operational events they encounter as well as failure or inoperability of aircraft systems. Recording is to be performed immediately upon being identified unless the aircraft is being operated. If this is the case, the recording is to be performed when the aircraft has come to a complete stop, the engines are shut down, and the aircraft is safe for entry.
    a. Unusual operational events may include but not limited to: high turbulence, heavy or hard landing, rejected takeoff, bird strike, lightning strike, hail strike, and operational exceedance.
    b. Failure or inoperability events may include but are not limited to: fault lights, caution and warning messages/lights, systems disengagement or malfunction, passenger cabin and galley item defects.
2. The flight crew is responsible to call Mukamalah Aviation Company Maintenance at the respective base via radio or mobile phone to advise them of the discrepancy. If the discrepancy is prior to departure, the flight crew will notify dispatch if passenger boarding is to be delayed or halted pending maintenance action.
3. The mechanic is responsible to perform the following:
    a. a. Determine if the discrepancy can be deferred per MEL with no Maintenance (M) action. If this is the case
    b. If the discrepancy cannot be deferred per MEL, contact dispatch to arrange for transportation of Mukamalah Aviation Company technicians to the aircraft's location.
    c. Coordinate the number of mechanics required to correct the discrepancy or defer per MEL.
    d. Coordinate all materials requirements.
    e. Ensure the rescue team has all required tooling, equipment, materials, and references (manuals) required to perform the job.
4. Once arriving at the aircraft's location, the technician shall stay in contact with the Maintenance base to advise him of work progress.
5. The Mechanic is responsible for evaluating the discrepancy and notifying the Director of Maintenance (or designee) of the actions needed to approve the aircraft for return to service.
6. If an item is placed on MEL and results in an operational restriction such as "Operations are not Conducted at Night", "RVSM Operations are not conducted" or "APU Inoperative" the flight crew will notify dispatch so that flight plans and ground crew at the arrival destination can be prepared for operational impacts.

7. After completion of all required inspection or maintenance actions, the mechanic is required to check that the work performed has been properly documented in the maintenance logbook with reference to GACA acceptable data (or per the AIP and manufacturer's ICA) before the aircraft is approved for return to service.
8. The mechanic will return to his home base with the completed work forms which are then routed to Planning for input of relevant information into the CMTS and filing with the aircraft records.

3.7.5.3 Unscheduled maintenance required to rectify defects identified and recorded by flight crews (Out-of-Kingdom)

1. Flight crews are required to record any and all unusual operational events they encounter as well as failure or inoperability of aircraft systems. Recording is to be performed immediately upon being identified unless the aircraft is being operated. If this is the case, the recording is to be performed when the aircraft has come to a complete stop, the engines are shut down, and the aircraft is safe for entry.
    a. Unusual operational events may include but not limited to: high turbulence, heavy or hard landing, rejected takeoff, bird strike, lightning strike, hail strike, and operational exceedance.
    b. Failure or inoperability events may include but are not limited to: fault lights, caution and warning messages/lights, systems disengagement or malfunction, passenger cabin and galley item defects.

2. If the aircraft is Out of Kingdom and has a Mukamalah Aviation Company mechanic on board, the mechanic and flight crew shall do the following:
    a. Take the appropriate actions to either correct the discrepancy or place the item on MEL
    b. If the item cannot be corrected or placed on MEL, the technician will coordinate with Engineering to find a duly rated repair station with the capabilities to work on the respective fleet type.
    c. Mechanic will maintain communication with Engineering and flight crew and advise when the discrepancy has been corrected. He will review the paperwork associated with all work performed and submit it to Planning upon return to home base.
    d. The flight crew is responsible to contact dispatch and advise them of any delay associated with the maintenance discrepancy along with expected ready time.
3. If the aircraft is Out of Kingdom and does not have a Mukamalah Aviation Company mechanic on board, the flight crew is responsible to call Mukamalah Aviation Company Maintenance at their respective home base via mobile phone to advise them of the discrepancy. If the discrepancy is prior to departure, the flight crew will determine if boarding is to be delayed or halted pending maintenance action.
    a. A mechanic will determine if the discrepancy can be deferred per MEL with no Maintenance (M) action. If this is the case, provide necessary guidance to the flight crew to defer the item per the MEL procedures in GMM 06-02-01.
    b. If the discrepancy cannot be placed on MEL without maintenance involvement, the Director of Maintenance will contact Engineering to coordinate the necessary actions to take place at a suitable repair station with the capabilities to work on the respective fleet type. If a repair station performs the work, all signoffs are to be reviewed by maintenance prior to aircraft dispatch.

c. If Engineering determines that a suitable repair station is not available, the Director of Maintenance (or designee) will arrange the transportation a Mukamalah Aviation Company mechanic to the aircraft location.

d. The Director of Maintenance will coordinate the number of mechanics required to correct the discrepancy or defer per MEL. He shall also coordinate all necessary materials, tooling, equipment, and references requirements to perform the job.

   i. Once arriving at the aircraft's location, the mechanic shall stay in contact with the Director of Maintenance to advise of work progress.

   ii. The Mechanic is responsible for evaluating the discrepancy and notifying the Director of Maintenance of the actions needed to approve the aircraft for return to service.

   iii. If an item is placed on MEL and results in an operational restriction such as "Operations are not Conducted at Night", "RVSM Operations are not conducted" or "APU Inoperative" the flight crew will notify dispatch so that flight plans and ground crew at the arrival destination can be prepared for operational impacts.

   iv. After completion of all required inspection or maintenance actions, the Mechanic is required to check that the work performed has been properly documented in the maintenance logbook with reference to GACA acceptable data (or per the AIP and manufacturer's ICA) before the aircraft is approved for return to service.

e. The mechanic will return to his home base with the completed work forms which are then routed to Planning for input of relevant information into the CMTS and filing with the aircraft records.

3.7.6 Aircraft Configuration Management

Certain Mukamalah Aviation Company aircraft fleet types have the capability of being placed in various configurations. These configurations may include:

1. VIP passenger seating arrangements.
2. Cargo transportation configurations
3. Medical transport configurations including stretchers and/or life support equipment.
4. Hoisting operations

Eligible configurations are listed in the weight and balance computation sheets for each specific aircraft registration number based on the aircraft's capabilities. These also include a Layout of Passenger Arrangements (LOPA) or specific drawings that detail the location of seats, medical equipment, and any other required equipment. A configuration can only be applied to an aircraft if it has been approved for installation by the Aircraft Flight Manual, an STC, LOPA, or other approved data for its installation.

The Pilot in Command (PIC) is responsible for ensuring the aircraft is configured for the operation to take place and that the aircraft is operated in compliance with the weight and balance limitations as listed in the Aircraft Flight Manual (AFM), as applicable, appropriate AFM/RFM supplements and appendices, and the weight and balance configurations provided.

Changes to aircraft configurations are made as follows:

1. Flight operations communicates to the mechanics the configuration requirements for the specific aircraft by registration number. Flight operations must first check to verify that the requested configuration is available for that specific aircraft by checking the weight and balance computation sheet for the specific aircraft registration number.
2. Mechanics will verify that the aircraft is eligible for the requested configuration by checking the weight and balance computation or verifying with Planning that the configuration can be installed. If there is any question, the mechanic will consult Chief Inspector for verification.
3. Mechanics will install the requested configuration on the aircraft. All configuration changes will be documented on the aircraft maintenance logbook. The entry will describe the previous configuration that was removed and the new configuration that was installed.
4. Once the configuration is complete, the mechanic will notify flight operations that the aircraft is returned to service and available for the flight.
5. The PIC will confirm the configuration change is properly recorded on the aircraft maintenance logbook prior to engaging in flight operations.

3.8 AIRCRAFT ACCEPTANCE AND CONFORMITY INSPECTIONS

3.8.1 Description

Mukamalah Aviation Company adds aircraft to its fleet as management determines that a new or replacement fleet is appropriate to its operational demands. To ensure that the aircraft is equipped as ordered and conforms to the GACA requirements and any applicable local authority requirements, the aircraft acceptance and conformity inspection process is established.

A basic definition of conformity is that an aircraft conforms to its Type Certificate and type design. Conformity to type certificate and type design is considered attained when the aircraft configuration and the components installed are consistent with the drawings, specifications, and other data that are part of the Type Certificate Data Sheet (TCDS) and would include any Supplemental Type Certificate (STC) and field approved alterations incorporated into the aircraft. Conformity inspections also determine that the specific aircraft is in an airworthy condition.

Mukamalah Aviation Company will complete a conformity inspection utilizing a checklist tailored to the aircraft type being accepted or conformed.

Conformity requirements are directly related to the Aircraft Inspection Program and GACAR 121 equipment and operational requirements for the intended operations. An Aircraft Acceptance and Conformity Checklist (refer to GMM 12.02.18) will be used as a method to file the documented results of the conformity inspections. Conformity records will be made available to the GACA upon request for the specific aircraft make, model, serial number, and current registration number. The records for the conformity inspection will reflect the completed inspections, ensuring compliance at the time the aircraft is ready to be added to the Fleet.

GACA Airworthiness Certificates that are issued to Mukamalah Aviation Company operated aircraft are valid for one year expiration and are to be renewed prior to its expiration. Due to the time required to perform conformity inspections for the annual renewal, sufficient time should be allocated for a GACA Airworthiness Inspector or DAR to come and inspect the aircraft.

3.8.2 Policy

Mukamalah Aviation Company will ensure that any aircraft added to its GACA OpsSpecs meets conformity, found to be in compliance with all applicable Part 121 equipment requirements, and an inspection program has been selected per GACAR 121. This overall policy meets the requirements of IS-BAO protocol 14.1.1.

The Chief Inspector will manage the checklists used in performance of acceptance and conformity inspections by ensuring that aircraft type specific information is included to address the unique requirements of the aircraft's configuration and type of operation.

Mukamalah Aviation Company will fully cooperate with the GACA or other national airworthiness authorities with jurisdiction over the operation of Mukamalah Aviation Company aircraft by providing records to support the safe and compliant operation of its aircraft.

Mukamalah Aviation Company will ensure that aircraft will be in compliance with any additional equipment requirements specified by the State and/or airspace where operations are conducted. This policy meets IS-BAO protocol 14.1.2.

Once the aircraft has been conformed and accepted by Mukamalah Aviation Company and added to the Fleet List, the conformity and acceptance records will be retained in the aircraft's historical file for the entire service duration with Mukamalah Aviation Company and transferred to the new owner when the aircraft is sold.

Mukamalah Aviation Company is to obtain written permission from the holder of a Supplemental Type Certificate (STC) and the approval from GACA prior to incorporating the STC. GACA approval requires submission of all pertinent STC data requested by GACA for evaluation.

3.8.3 Responsibilities

The Director of Maintenance is responsible for maintenance support during the acceptance and conformity process by ensuring the following:

1. Coordination of the technical aspects of acceptance and conformity activities
2. Communication with the Chief Pilot, Training Department, and Chief Inspector in the aircraft acceptance/conformity process.
3. Evaluating new training and tooling requirements
4. Correcting discrepancies, allocating resources, and verifying any necessary bridging requirements for the inspection program.

The Chief Inspector is responsible for the following:

1. Oversight of the Aircraft Conformity Inspection process
2. Ensuring coordination with the GACA in and adding aircraft to the GACA Ops Specs by completing the conformity process and providing any necessary records.
3. Ensuring all required inspections and documentation is complete and meets conformity requirements.
4. Reviewing the completed conformity records package contents for completeness.

5. Providing guidance and leadership to the personnel performing the acceptance/conformity.
6. Ensuring completion of the conformity process and for coordinating with maintenance for the correction of discrepancies noted during the process.

3.8.4 Aircraft Acceptance Pre-Planning

The Director of Maintenance will accomplish the following tasks:

1. Coordinate with the Chief Pilot to determine the projected date the aircraft will be placed in service and coordinate the development of an MEL, CDL, and NEF, as required.
2. Coordinate with the Supervisor, ATT&S to ensure that any additions to the Maintenance Training Program are developed and implemented as required.
3. Ensure parts and special tools are identified and stocked as necessary at the Mukamalah Aviation Company Repair Station.
4. Coordinate with the Mukamalah Aviation Company Repair Station Accountable Manager any additions to their capability list or ratings in order to service a new fleet type.
5. Coordinate with Chief Insoector on the development of an AIP.
6. Select the required number of mechanics to perform the acceptance inspection. Personnel should be chosen based on experience and advanced knowledge of the required process to be followed.
7. Establish a date for the acceptance inspection at the agreed location. In the case of a new aircraft, this will typically be at the manufacturer's delivery center. For used aircraft, this will be at a mutually agreed location per the sales agreement.
8. Provide a timeline to the Chief Pilot for the date the aircraft acceptance is to be accomplished and the anticipated date the aircraft is to be added to the LOA.
9. Coordinate with the Planning department to establish an aircraft logbook for the aircraft, using current aircraft status (aircraft total time, engine(s) total time, propeller(s) total time, component times (overhaul life limits, etc.)
10. Ensure the aircraft is added to the computerized maintenance tracking system

The Chief Inspector will provide a timeline for the estimated completion of the aircraft conformity by performing the following:

1. Ensure there is sufficient staff to complete the inspection.
2. Development of a customized Aircraft Acceptance and Conformity Checklist to address the unique aspects of the new aircraft and ensuring all regulatory and equipage requirements are met.
3. Provide thorough briefing of the acceptance process and the expected documentation requirements.
4. Assign personnel to attend the acceptance inspection.

3.8.5 Records to Support Conformity

The following records are part of the conformity records and will be maintained as part of the aircraft permanent record history.

1. Aircraft Registration
2. Airworthiness Certificate
3. Radio Station License
4. AFM Supplements
5. Mass and Balance records
6. Equipment List or Aircraft Readiness Log
7. Flight Crew Checklists
8. Passenger Briefing Cards
9. Aircraft Logbook Entry for Inspection Program selection
10. GACA Form 8320 for STC's, Major Repairs, and Major Alterations
11. Lease Agreement(s)
12. Layout of Passenger Arrangements (LOPA)
13. Flammability test certificates for aircraft interior materials
14. Placard diagrams for interior and exterior or reference to the applicable AMM or AFM
15. Flight Attendant Manual
16. Documents that describe DFDR parameters
17. Engine Life Limited Parts
18. Type Certificate Data Sheets for the aircraft and engines
19. Engine records
20. Airworthiness Directives compliance list and supporting records
21. Aircraft insurance certificate
22. Airframe and engine Service Bulletins

3.8.6 Acceptance Procedure

Engineers and technical staff assigned to inspect the aircraft during the acceptance procedure will perform a physical inspection of the aircraft using the Aircraft Acceptance and Conformity Checklist. The assigned persons will verify the following:

1. All required interior and exterior placards in accordance with AMM Chapter 11, aircraft/engine Type Certificates, STCs, GACA 8320-1, ICA, ADs and AFMs.
2. Each aircraft has, in addition to the English signs, markings, and placards required by the aircraft type certification requirements, all of the following signs, markings, and placards in the Arabic language:
    a. All emergency exit signs.
    b. All passenger safety information signs, markings and placards as required by GACAR § 121.529.

3. Aircraft and engine data plates are installed, legible, and match the make, model and serial number shown in the aircraft maintenance records.
4. All equipment required by GACAR 121 is verified as being installed and documented on the Acceptance and Conformity Checklist. Review the current GACARs prior to inspecting the aircraft.
5. Passenger briefing card (if applicable) must match aircraft layout for configuration and emergency equipment location.
6. The current equipment list matches installed equipment on aircraft.
7. All required tests and inspections that are to be performed prior to flight have been performed and a record is present.
8. All required records are present, legible, complete, and accurate.
9. Seat cushions. Except those on flight crew member seats, in each compartment occupied by crew or passengers, seat cushions on all airplanes complies with the requirements pertaining to seat cushions flammability in GACAR § 25.853(c) in effect on 26 November 1984.

The assigned persons will complete the Acceptance and Conformity Checklist, note the discrepancies on the checklist and inform the Director of Maintenance for corrective action.

1. When the conformity checklist is complete, insert it into the conformity records package.
2. When the conformity records package is complete, Chief Inspector will perform a final review of the package. Once complete he will make it available to the GACA upon request.
3. Before the aircraft is operated for the first time by Mukamalah Aviation Company, an inspection program selection must be made in the aircraft logbook. The logbook entry must clearly state the GACAR 121 program selection that is being made.
4. If the GACA is to validate the conformity inspection, the conformity records package and aircraft records shall be presented in a formal manner (i.e., assembled on a table in a logical order) by Chief Inspector.
5. When the GACA completes their inspection and approves the aircraft for addition to the Ops Specs, Chief Inspector shall ensure the records are forwarded to Planning personnel for processing.

3.8.7 Self-Conformity

While the aircraft is in service, the aircraft will be maintained and inspected according to the selected inspection program. The purpose of the inspection program is to maintain airworthiness and to also ensure the aircraft continues to comply with GACAR 121 and maintains conformity. However, at certain times there may be changes to either GACAR 121 or local regulatory requirements that necessitate the need to perform a self-conformity. An example of this is during the annual GACA airworthiness certificate renewal.

The Director of Maintenance or Chief Inspector may determine that a self-conformity check may be required to verify the aircraft's continuing compliance with GACAR 121 or any other applicable regulatory requirement that mandates the aircraft meet certain equipage or airworthiness standards.

1. Chief Inspector and Engineering will monitor GACA regulations for changes in aircraft equipage standards. Recent mandated equipment requirements such as ADS-B out are examples of additional aircraft equipment modifications that must be installed to maintain compliance with GACA regulations.
2. When these equipment changes are identified, Engineering will develop an MTD as per Planning & Engineering Manual 03-01-01 to address the necessary modifications.
3. Modifications may also require a revision to the Ops Specs. If this is the case, Chief Inspector and Flight Operations will coordinate efforts to ensure that the appropriate approvals are obtained.

When Mukamalah Aviation Company is performing a self-conformity, Chief Inspector will ensure the following procedures are followed:

1. In the discrepancy block, enter the following discrepancy:

   "Aircraft requires self-conformity to verify conformance with (enter requirement)"
2. Perform a self-conformity by utilizing the Conformity Checklist
3. All findings must be recorded in the maintenance logbook.
4. Upon satisfactory completion of the self-conformity, sign off the discrepancy as follows:

   "Aircraft self-conformity completed and the aircraft is determined to meet the requirements of (enter requirement)"
5. Forward the completed self-conformity documents, including findings and corrective actions to Planning for filing. These records will be retained for the historical files and transferred with the aircraft when sold.

3.8.8 GACA Aircraft Registration and Airworthiness Criteria

3.8.8.1 GACA Portal

1. All required certificates and authorizations are applied for through the GACA E-Services portal at: https://gaca.gov.sa/web/en-gb/page/e-services-catalogue-by-department
2. The GACA portal shall be researched for the current policies and procedures regarding documentation needed to be submitted for the services needed to keep the aircraft operated by Mukamalah Aviation Company current and within the regulatory requirements.

3.8.8.2 Aircraft Registration Certificates

1. For "HZ" registered aircraft are applied for and issued one time. There is currently no expiration of GACA Aircraft Registration.
2. For "N" registered aircraft, the Aircraft Registration expires every 3 years and is renewed by the aircraft owner through the FAA Aircraft Registration Branch.
3. Since Mukamalah Aviation Company has aircraft leases with various entities, it is important for Mukamalah Aviation Company to maintain a list of the contact personnel so that the required GACA forms can be signed by the authorized persons.

3.8.8.3 Airworthiness Certificate

1. All Mukamalah Aviation Company operated aircraft are issued a GACA Airworthiness Certificate as per the ICAO Article 83 bis agreement. The Airworthiness Certificate can be renewed for a term up to 3 years.
2. At each airworthiness certificate renewal, a conformity inspection by a GACA Inspector or a DAR must be made for issuance of the renewal.

3.8.8.4 Aircraft Radio License

1. For "HZ" registered aircraft, the radio license is applied for and issued one time. There is currently no expiration of GACA Aircraft Radio License.
2. For "N" registered aircraft, the radio license is typically in the form of a "Fleet License" issued by the Federal Communications Commission (FCC). The FCC Radio Station License is for a certain number of aircraft in the fleet and is valid for a period up to 10 years. The operator is responsible for renewing this certificate.

3.8.8.5 24-bit Mode S Transponder Code

1. All Mukamalah Aviation Company operated aircraft must apply for a 24-bit Mode-S Transponder code that is used for programming the Emergency Locator Transmitter (ELT) and the aircraft Mode-S Transponder. This code is assigned to the aircraft while it is operated by Mukamalah Aviation Company.

3.8.8.6 ELT Registrations

1. All ELT's installed on Mukamalah Aviation Company aircraft and emergency equipment (such as life raft ELT's) are to be registered with GACA. If an ELT is replaced or relocated to another aircraft, the ELT registration is to be updated on the proper GACA forms and sent to GACA.

3.9 HOT AND COLD WEATHER MAINTENANCE

3.9.1 General

1. Pre-Maintenance Planning: Prior to commencing any maintenance activity in extreme weather conditions (hot or cold), conduct a thorough risk assessment. Consider potential weather impacts on personnel, materials, and aircraft systems.
2. Personnel Safety:
    a. Hot Weather.
    b. Cold Weather.
3. Communication: Maintain clear communication channels between maintenance personnel and flight crew regarding any weather-related concerns.
4. Documentation: Document all pre-maintenance planning considerations, risk assessments, and any weather-specific adjustments made to procedures.

3.9.2 Hot Weather

1. Tire Pressure: Monitor and adjust tire pressure more frequently to account for thermal expansion.
2. Engine Operations: Be mindful of potential for reduced engine performance due to higher ambient temperatures. Follow manufacturer's recommendations for hot weather engine starts and ground operations.
3. Fuel System: Follow approved procedures for Refueling manual.
4. Electrical Systems: Monitor electrical loads on the aircraft to avoid overheating.
5. Fluid Levels: Check fluid levels more frequently due to potential for increased evaporation.

3.9.3 Cold Weather

1. Battery Performance: Be aware of reduced battery life in cold weather. Consider pre-heating batteries or using external power for starting.
2. Hydraulic Systems: Ensure hydraulic fluids are appropriate for cold weather operation to prevent thickening or gelling.
3. Pneumatic Systems: Monitor moisture buildup in pneumatic systems that could lead to freezing.
4. Pitot Tubes: Protect pitot tubes from ice accumulation to ensure accurate airspeed readings.
5. De-icing and Anti-icing Procedures: Follow approved procedures for De-icing and Anti-icing manual.

4. MATERIALS, TOOLS, AND EQUIPMENT

4.1 AIRCRAFT PARTS AND TOOLING

4.1.1 Aircraft Parts Receiving

This section describes the receiving process from the time that parts and materials arrive to the Receiving Area up to the time they are released to the Storehouse for storage. The main purpose of this process is to ensure the airworthiness of components, accessories, appliances, and hardware that will be installed on aircraft conform to specific requirements, are free from damage and are properly documented.

4.1.1.1 Responsibilities

1. The Chief Inspector is responsible and has authority for the receiving inspection and acceptance process. He has authority to change receiving inspection policies and procedures.
2. The Chief Inspector, is responsible for ensuring that incoming materials, hardware, parts, components, equipment, and other products, intended for installation on aircraft, are subject to receiving inspection.
3. The Chief Inspector may delegate this inspection function to an authorized Receiving Inspector.
4. The Chief Inspector must ensure personnel who perform these inspections are adequately trained.
5. Receiving Inspectors must follow the guidelines of this section.

4.1.1.2 Policy

1. All materials receiving personnel and receiving inspectors will be trained in parts and materials receiving techniques, hazardous materials handling, and suspected unapproved parts as outlined in FAA Advisory Circular, AC 21-29.
2. An appropriately trained, qualified, and authorized receiving inspector will inspect each item and verify that it conforms to specified requirements, was not damaged during shipment, and is accompanied by the proper documentation.
3. All incoming parts, accessories, and equipment are subject to a receiving inspection. The Receiving Inspector will verify that parts received are associated with a material purchase or parts repair order (such as a Purchase Order, Work Order, Invoice, or similar document).
4. Repair order parts and receiving documentation will be verified against the repair order instructions to ensure the correct processes were accomplished.
5. New parts that have an airworthiness release certificate issued in a country that has a Bilateral Agreement with the FAA are acceptable for use.
6. EXCEPT FOR ENGINES AND PROPELLERS: Parts that are not new must have either an FAA Form 8130-3, an EASA Form One, or be sourced from a country that has a bilateral agreement with the FAA (refer to GACA AC 021-02).
7. ENGINES AND PROPELLERS: Complete engine and propeller assemblies that are not new must have a GACA Form 8130-3 per GACA AC 021-02.

8. All calibrated tools, equipment, and measuring equipment returned from a calibration vendor will be reviewed for proper certification and documentation.
9. Before, during and after receiving inspection suitable trays, racks, stands, and protective coverings (as required) are utilized to ensure maximum protection of all parts during storage and transit.
10. Raw stock materials such as sheet metal, tubing, and other raw stock will be handled in the same method as bulk parts. If during the receiving inspection the part is suspected as being an unapproved part, the part will be tagged with an Unserviceable Red tag and placed in Quarantine.

4.1.1.3 Receiving Procedures

Materials Clerks in the Receiving Area will accomplish the following tasks to prepare parts and materials for receiving inspection:

1. When parts arrive from delivery, they will be placed in the sorting area and evaluated for further separation/segregation.
2. After sorting is completed, do the following:
    a. Check all boxes, crates, or any other shipment containers for obvious signs of damage. If damage is observed, inform the receiving lead and receiving inspector so that additional precautions will be taken to ensure that there is no damage to the part or materials inside the container.
    b. Don't open shelf-life controlled preservation packaging or hygienically sealed packaging. Examples: O-rings, Gearboxes, bearings, potable water filters, oxygen masks/regulators and hoses.
    c. For bulky items too large to place on a bench, notify Receiving Lead and the Receiving Inspector. Find a suitable area and handle accordingly.
    d. Prepare the equipment, parts, and materials for receiving inspection as follows:
        i. Place any static sensitive materials in the dedicated ESD area.
        ii. Open the container, remove the part or material, and place the empty box in a safe location, such as towards the back of the inspection bench, under it, or otherwise out of the way.
        iii. Place material in the inspection area. Rolling items should be left in the box or otherwise made safe.
        iv. If several parts are in the same shipment, spread them out without bunching them together.
        v. For each inspection lot, place documentation stack in an appropriate place in the inspection area (such as stacked in front of the material, etc.).
        vi. Equipment, parts, materials, and documentation will be prepared in good order in the receiving area for inspection and paperwork arranged as follows:
    e. MANDATORY: Parts or materials traceability certification document (GACA or FAA Form 8130, EASA Form One, Certificate of Conformity (C of C), etc.)
    f. For Kits, a kit contents list (or equivalent). Kits are collections of parts packaged together under a single overall kit part number. A kit contents list describes the Kit PN, the contained PNs, and quantities for each PN in the kit.

g. Work Reports, such as shop reports are needed if work performed isn't sufficiently described on the Airworthiness Release document, or if the Airworthiness Release document states there is an attached report.

h. Test Reports, such as cylinder reports, interior flammability test reports, etc., are needed when the traceability document doesn't contain sufficient details.

i. Delivery receipts (packing lists, packing sheets and slips, or equivalent). Although items in Storehouse inventory prior to introduction of this procedure should have any available delivery receipts retained, lack of a delivery receipt isn't cause for rejection or quarantine of prior stored inventory. Any additional documentation (if included).

j. If necessary, make enough copies of the certification traceability document to have enough copies to split and cover separate groups of:

    i. Partial receipts of multiple part number

    ii. Partial receipts of lot or serial numbers

    iii. Receipt of multiple shelf-life expiration groups

k. If necessary, make a larger photocopy of miniaturized traceability documents or parts tags to provide any additional space needed for marking, noting, and stamping. Attach the original to the photocopy.

l. Read the part number, lot or serial number, shelf-life data, and quantity on the material and the paperwork to ensure they match. If shelf life isn't marked as an expiration date, calculate it from the shelf-life data. If the item has a shelf life or expiration date, verify that the item has not expired.

m. Check the part number and/or serial number, batch/lot number, and shelf life (if applicable) shown on the documentation matches the actual part or material.

n. For Kits, verify the kit contents is complete by performing an inventory of the parts contained in the kit against the kit contents list. Verify the kit top end part number. Verify for each kit item the applicable part number, lot or serial number, shelf life, and quantity of each part against the kit list paperwork to ensure they match.

o. If multiple copies and/or partial receipt is observed, then circle and / or note these numbers in black or blue ink pen to note the actually received line items, part number, lot or serial numbers, shelf life, and quantities to clarify/differentiate what was actually received.

p. If a range of Serial Numbers is specified, make sure the actually received SN(s) are covered by the range. If a partial receipt, then note the actually received SN(s). For example, if the range covers "SN 1001 to 1009," write "SN 1005," or (SN 1005 to 1007), or similar, to note the Serial Number(s) actually being received.

q. If there are multiple pages of the certification traceability document, ensure all pages are present. Multi-page certificates should be prepared for stamping on Page 1 with receiving file number, and any needed notes and markings for partial receipts. Other pages should also be noted and marked for partial receipts (such as by noting or circling Serial Numbers, Lots, Quantity, etc., actually received).

r. On the parts certificate, write the file number as the PO Number and Line-Item number. Example: 4501234567-01. When no PO, use an alternate file number such as Work Order number, Invoice Number, etc.

s. If the part or material fails any of the steps above, notify the Receiving Inspector so the item may be placed in the Quarantine cage.

t. If no discrepancies are observed, inform the Receiving Inspector that the part or material is ready for inspection.

3. Receiving Inspectors will accomplish the receiving inspection on each part or material as follows:

a. Handle instruments and electronics with extreme care. Observe warning label on the outside of packages and adhere to ESD procedures.

b. Conduct a visual inspection of the parts, equipment, or materials to check for shipping damage, identification, preservation, and shelf life. No special test equipment will be required to perform the receiving inspection. Inspectors shall verify the documentation provided and refer to additional manufacturer's technical data as necessary.

c. Verify that the part number, serial number and/or batch/lot number on the item matches what is shown on the attached documentation.

d. Ensure that the documentation provided meets or exceeds the acceptable documentation requirements of GACA AC 021-02.

e. If the part has an identification plate, make sure it has not been improperly changed or tampered with. If tampering is suspected, treat the part as a Suspected Unapproved Part (SUP).

f. Check the overall condition and appearance of the items.

i. Check for damage or contamination, chipped paint, cracks, and dents.

ii. Check for protective covering, seals, caps, and/or plugs.

iii. Ensure that the protective packaging is sealed and free of tears.

iv. Visual inspection of the item for defects or abnormalities such as altered or unusual surfaces, absence of required plating, and evidence of prior use attempted, exterior repair, pitting or corrosion.

v. Suspicious features, abnormalities, or potentially fraudulent documentation which may warrant further investigation under the Suspected Unapproved Parts (SUP) procedure.

g. For new parts, ensure that the vendor has provided documentation which will establish traceability of the new part.

h. If the part is not new, ensure that the vendor has provided a "Maintenance Release" tag, copy of the work order or 8130-3 which contains a description of the work performed. If the Maintenance Release tag, copy of the work order or 8130-3 is missing, quarantine the part and take corrective action.

i. For all shelf items, ensure that the item's shelf life has not expired.

j. For lot/batch items, ensure that the lot or batch is traceable to the documentation provided by the supplier.

k. For parts documentation with Life Limited information (such as flight hour or flight cycles), if there is a life limited status marked on the material certification document, check to make sure that the required life limited information is legible and clear of obvious signs of errors and omissions.

l. For parts documentation with Airworthiness Directive information, check to make sure that the AD information is legible and clear of obvious signs of errors and omissions.

m. For a "corrected" traceability document that doesn't cover conformity, ensure the uncorrected document is attached. When stamping, make a note above or near the stamp (such as "Previous 8130-3 attached" or similar).

n. Once the part passes the receiving inspection process, the Receiving Inspector will stamp on the front of the part's material certification document with the "INSPECTED" stamp and fill in the following:

   i. If the Quantity received is less than shown on the certificate, use black or blue ink pen to note actually received Qty above or near the stamp (such as "Qty-10ea" or similar, when for example the delivery was for 10, but the certificate was for 1,000).

   ii. Shelf Life Expiry Date: Write the shelf life expiration date. If there is no shelf life, strike-through or "N/A" this space.

   iii. Inspector: Write the receiving inspector's initials

   iv. Date: Write the date the item is accepted

o. Any item found during the receiving inspection process to be damaged, unsuitable for use, or lacking the appropriate documentation must be identified and tagged with an Unserviceable Red Tag. The discrepancy must be listed on the Unserviceable Red Tag and the item placed in quarantine. Parts without proper paperwork or of questionable history or origin shall not be installed on the aircraft or released to the Materials Storehouse for storage.

p. Once the part or material has been stamped as "Received" by the receiving inspector, the receiving personnel will perform the final processing and prepare it for storage or use as follows:

   i. Enter the part in the computerized inventory and ensure that the shelf life expiration date has been entered.

   ii. Make a backup digital scan of the parts traceability documentation that came with the part. The digital scan will be filed on the computer server system.

   iii. The original documentation will be returned to the box with the part or material and prepared for storage or transit. Parts and materials will be packaged and secured in suitable boxes, crates, or containers (as applicable) to protect it from environmental or in-transit hazards.

4.1.1.4 Discrepancies and Quarantine

1. It is the responsibility of the Receiving Area Materials Clerks and Receiving Inspectors to utilize the quarantine process for segregating parts and materials not meeting the receiving process and inspection standards in this section.

2. Once a part or material is determined to be quarantined, the Receiving Inspector will ensure that an Unserviceable Tag is completed and attached.

3. Quarantine cages and areas are to be locked when not in use. Access is only authorized to receiving inspection personnel or designees.
4. Quarantine cages are to be red in color and able to be secured by a standard lock or have a lockable knob.
5. Once a part or material is placed in quarantine, it is to remain there until any discrepancies noted during the receiving inspection process have been resolved.
6. If discrepancies cannot be resolved, the part/material shall be returned to the vendor or scrapped.
7. If the part/material is determined to be a possible SUP, it will be moved to a dedicated SUP cage.
8. If there are any questions regarding the procedures above, contact Chief Inspector.
9. Mukamalah Aviation Company conducts oversight of contract vendor's compliance with aircraft parts receiving and quarantine policies and procedures through the audit program as detailed in GMM Chapter 09.

4.1.2 Shelf Life and Environmental Storage

4.1.2.1 Responsibilities

1. Materials Support is responsible for ensuring that parts and materials in the Storehouses are monitored for shelf life and expiration.
2. The Chief Inspector is responsible for ensuring that audits of the materials storage areas occur on no less than an annual basis to verify the shelf-life procedures are being followed.

4.1.2.2 Policy

1. All materials Storehouse personnel will be trained in Storehouse storage procedures.
2. Flammable items and Hazardous Materials items will be stored in a segregated area that protects it from fire and exposure hazards.
3. All batch/lot items will be controlled to prevent mixing of separate batches.
4. Shelf-life materials will be accompanied by documentation.
5. The Supervisor, Storehouse (or designer) will ensure the part or product with the shortest life remaining (per shelf-life limit information on documentation, packaging, label, or stamp) should be used first to reduce the loss of product.
6. The Supervisor, Storehouse (or designer) will track the expiration date of shelf-life items. Shelf life and expiration date reports will be done monthly to control items and remove all expired items from stock.
7. The Lead Planner (or designee) will track the expiration date of ratable maintenance preservation items (such as gearboxes, pressurized cylinders, etc.). A notification will be sent to the Supervisor, Storehouse (or designee) at least 30 days prior to needing to route the item for re-preservation.
8. The Chief Inspector (or designee) will ensure that audits are conducted on the tracking systems for shelf-life items and maintenance preservation items.
9. The Chief Inspector (or designee) will ensure that audits are conducted on stored physical stock to ensure that expired items are being removed for recertification or disposal as necessary, in a timely manner.

10. The Chief Inspector (or designee) will ensure that audits are conducted on work area stored shelf-life items quarterly, or as requested by the Director of Maintenance, and the results will be brought to their attention and to the attention of the Foreman of the area being audited.
11. A record of audits will be maintained by the Chief Inspector, for a period of two years.

4.1.2.3 Procedures

1. Consumable materials such as liquids, greases, sealants, and adhesives must be checked on a monthly basis by the Materials Clerk (if stored in the Storehouse) or the Foreman (if stored in the Hangar or Shop Areas) to ensure they are inventoried and maintained in a serviceable condition.
2. All Flammable Cabinets, Freezers, or Refrigerators which contain consumable items must have a Chemicals Inventory Form in the pouch located on the door. The form is to be updated each month.
3. Review and revise the Chemicals Inventory Form as follows:
    a. Verify the quantity of all consumable material items stored in each flammable cabinet, freezer or refrigerator. Revise the actual quantity available for each item on the Chemicals Inventory Form. If the item is already listed on the Chemicals Inventory Form and not currently stocked, revise the quantity available to "0".
    b. If a new item was added (handwritten) to the Chemicals Inventory Form since the last monthly check, revise the Chemicals Inventory Form electronic file with all of the required data.
    c. Verify all items stored have correct documentation in the binder. Remove all documents as soon as item has been depleted.
    d. Verify all items stored have CHB/SDS posted according to the units' HAZCOM procedures.
    e. Verify all items are properly stored per the original manufacturer's environmental requirements.
4. Verify all consumable material items Shelf-Life expiration date for currency including Open Life requirements.
    a. If the item's Shelf-Life expiration is before the next monthly check, notify the Foreman or Lead for ordering and restocking if needed.
5. Remove all expired items and dispose safely according to the material's disposal criteria.
6. Verify HAZCOM labels are applied to or attached to material container and are legible, if applicable.
7. Verify all grease guns are identified correctly and legible. This includes both the pump and cartridge. Correct if discrepancy is noted.
8. Verify all temporary service containers are stored empty.
9. Verify there are no open oil cans, containers or tubes of grease. Tubes of grease must have lids on them. All open containers must be place in a sealable plastic bag if the original lid is not available. NO cans, containers or tubes are allowed to be stored open.
10. Verify service pumps/reservoirs Preventive Maintenance (PM) is current. Notify Foreman if PM is coming due before next monthly check. Clean exterior as needed.
11. Verify the exterior and interior of the flammable cabinet is clean. Wipe up residual oil/grease that may have leaked. Replace paper as needed.

12. Verify the exterior and interior of the freezer or refrigerator is clean. Notify the Foreman if defrosting is required.
13. Verify PPE is located at the flammable cabinet, freezer or refrigerator. If not, ensure the instructions are posted with location information. Check PPE supply levels, if low replenish or notify the Foreman or Lead.
14. When the monthly check is complete, print the revised Chemicals Inventory Form, sign and post to the specific flammable cabinet, freezer or refrigerator pouch. D. Mukamalah Aviation Company conducts oversight of contract vendor's compliance with shelf life of parts and materials through the audit program as detailed in GMM Chapter 09.

4.1.3 Cannibalized Parts Procedures

4.1.3.1 From Aircraft to Aircraft

NOTE 1: All parts cannibalization must be approved by Director of Maintenance.

NOTE 2: FAA "N" registered aircraft operated by Mukamalah Aviation Company are subject to ICAO Article 83 bis and issued a GACA Airworthiness Certificate. Therefore, cannibalized parts may be installed on either "HZ" or "N" aircraft provided both aircraft have a valid GACA Airworthiness Certificate.

1. When a part is removed from one aircraft to be used on another aircraft the following must be accomplished:
    a. Written approval to cannibalize a part must first be received by the Director of Maintenance. This may be in the form of an email.
    b. Complete a Mukamalah Aviation Company Serviceable Parts Tag Form 7390 and attach it to the part being removed. In the Work Performed block, be sure to write "Removed serviceable from aircraft NXXXX- or HZ-XXXX". A repair station's approved serviceable parts tag may be used by the repair station in lieu of the Form 7390.
    c. In the maintenance logbook for the cannibalized aircraft, enter the part name, part number, serial number, location, aircraft part is going to be use on, and reason robbed.
    d. In the maintenance logbook for the aircraft on which the part is being installed, enter the corrective action and include what aircraft the part was removed from with P/N, S/N, etc.
    e. Director of Maintenance (or designee) will coordinate with the mechanic (or repair facility) to have the replacement part(s) installed on the cannibalized assembly.

4.1.3.2 From Spare Accessory to Aircraft

1. When a part is removed from a spare accessory (spare engine, spare APU, etc.) to be used on an aircraft or engine the following must be accomplished:
    a. Written approval to cannibalize a part must first be received by the Director of Maintenance. This may be in the form of an email.
    b. Complete a Mukamalah Aviation Company Serviceable Parts Tag Form 7390 (see GMM 12.01.05) and attach it to the part being removed. In the Work Performed block, be sure to write "Removed serviceable from …..".

c. Include the serial number from the data plate of the accessory that the part is being removed from. A repair station's approved serviceable parts tag may be used by the repair station in lieu of the Form 7390.

d. In the maintenance logbook assigned to the accessory, enter the part name, part number, serial number, location, aircraft part is going to be use on, and reason cannibalized.

e. In the maintenance logbook for the aircraft on which the part is being installed, enter the corrective action and include where the part was removed from with P/N, S/N, etc.

f. Director of Maintenance will coordinate with the mechanic (or repair facility) to have the replacement part(s) installed on the cannibalized assembly.

4.1.3.3 Responsibility

1. It will be the responsibility of the Director of Maintenance (or designee) to maintain tracking of all cannibalized parts to include replacement order status and when the item has been cleared. He will maintain a status report for tracking purposes.
2. Parts removed from a MAC aircraft with a MAC serviceable tag attached are strictly for use in moving parts from one MAC aircraft to another.
3. No MAC part may be loaned or sold to any outside vendor/company with a MAC generated tag attached for purposes of installation on a non-Mukamalah operated aircraft.

4.1.4 Parts Swapping

4.1.4.1 Parts Swapping

From time to time, it will be necessary to swap parts for troubleshooting. This practice should be held to a minimum. It must be used only after all other troubleshooting options have been exhausted.

NOTE 1: All parts swapping must be approved by Director of Maintenance.

NOTE 2: FAA "N" registered aircraft operated by Mukamalah Aviation Company are subject to ICAO Article 83 bis and issued a GACA Airworthiness Certificate. Therefore, cannibalized parts may be installed on either "HZ" or "N" aircraft provided both aircraft have a valid GACA Airworthiness Certificate.

NOTE 3: MAC serviceable tags are strictly for use in moving parts from one MAC aircraft to another.

4.1.4.2 From Aircraft to Aircraft or Part for Part on the Same Aircraft.

1. Upon swapping the part per the AMM, the technician must:
    a. Inspect the parts being swapped for serviceable condition.
    b. Ensure there is a logbook entry for each aircraft involved with the swap listing:
        i. The reason for the swap.
        ii. Where each part was removed from and installed to.
        iii. All P/Ns and S/Ns involved.
        iv. All other pertinent information.

v. Upon completion of the swap, ensure the logbook entry is routed to Planning for time/cycle tracking of the part.

c. Complete a Mukamalah Aviation Company Serviceable Parts Tag and attach it to the respective logbook entry when parts are being moved from aircraft to aircraft. In the Work Performed block, be sure to write "Removed serviceable from …..". A repair station's approved serviceable parts tag may be used by the repair station in lieu of the serviceable tag.

2. Mechanics must:

a. Inspect the parts being swapped for serviceable condition.

b. Ensure both parts are properly installed per manufacturers spec, GACA regulations and the AMM and sign off the logbook or other issued forms accordingly.

3. The Fleet Planner for the aircraft involved in the swap must:

a. Transfer the swapped parts to the correct aircraft in the electronic tracking system and the aircraft files.

b. In the CAMP/CMP, and/or SAP, review the records for the parts being swapped. The inspection/service/lubrication time for the swapped parts will not match the program times for the aircraft onto which they have been installed, so the fleet planner may need to schedule immediate service to those parts (using the required task cards) to ensure the service/inspection/lubrication doesn't become overdue and the parts match the maintenance requirement of the aircraft the parts are installed on.

4.1.4.3 From Stock to Aircraft

1. This process will be the same as a swap from aircraft to aircraft except:

a. The serviceability of the part from stock will be determined by the part's incoming documentation and its physical condition.

b. Taking a part from stock for troubleshooting is subject to the Repair Station's materials handling procedures.

c. The part removed from the aircraft will be held in quarantine with the Parts Removal Tag attached until the disposition of the replacement part is determined.

i. After five flight days, if the replacement part corrected the problem, then the part should be removed from quarantine and sent out for repair.

ii. If, on the other hand, the problem still exists, the repair station is to be notified so that the part may be returned to stock per their procedures (as applicable).

4.1.5 Serviceable / Unserviceable Parts

4.1.5.1 Serviceable Parts

This section describes the storage of parts and materials in the Storehouse and secondary areas.

1. Responsibilities

a. Materials Support has the responsibility and authority for the storage of all parts and materials in the Storehouse and secondary storage areas.

b. Materials Support is responsible for ensuring that materials personnel follow the storage procedures.

c. Materials Support is responsible for ensuring that parts and materials in the Storehouses are monitored for shelf life and expiration.

d. The Chief Inspector is responsible for ensuring that audits of the materials storage areas occur on no less than an annual basis to verify the storage procedures are being followed.

2. Policy

a. All materials Storehouse personnel will be trained in Storehouse storage procedures.

b. All materials Storehouse personnel will follow the procedures in this section to properly store and provide environmental protection to all parts and materials in the Storehouse facilities.

c. Flammable items and Hazardous Materials items will be stored in a segregated area that protects it from fire and exposure hazards.

d. Parts and materials that arrive in the Storehouse are under the control of the Materials personnel.

e. All batch/lot items will be controlled to prevent mixing of separate batches.

f. All small hardware, seals, and O-rings will be kept in original packing or in a sealed bag if batches are broken down.

g. All parts and materials will be accompanied by documentation.

h. The Supervisor, Storehouse (or designee) will ensure the part or product with the shortest life remaining (per shelf-life limit information on documentation, packaging, label, or stamp) should be used first to reduce the loss of product.

i. The Supervisor, Storehouse (or designee) will track the expiration date of shelf-life items. Shelf life and expiration date reports will be done monthly to control items and remove all expired items from stock.

j. The Lead Planner (or designee) will track the expiration date of ratable maintenance preservation items (such as gearboxes, pressurized cylinders, etc.). A notification will be sent to the Supervisor, Storehouse (or designee) at least 30 days prior to needing to route the item for re-preservation.

k. The Chief Inspector (or designee) will ensure that audits are conducted on the tracking systems for shelf-life items and maintenance preservation items.

l. The Chief Inspector (or designee) will ensure that audits are conducted on stored physical stock to ensure that expired items are being removed for recertification or disposal as necessary, in a timely manner.

m. The Chief Inspector (or designee) will ensure that audits are conducted on work area stored shelf-life items quarterly, or as requested by the Director of Maintenance, and the results will be brought to their attention and to the attention of the Foreman of the area being audited.

n. A record of audits will be maintained by Chief Inspector for a period of two years.

3. Procedures for Parts and Materials in the Storehouses

a. When parts and materials arrive to the Storehouse, the initial inventory processing will be performed by the Materials Clerk as follows:

   i. Inspect the packaging for signs of obvious damage. If damage is observed, further investigation may be required.

   ii. Open the packaging and obtain the parts documentation.

   iii. Enter the item as being received to inventory in the computerized tracking system ensuring that shelf life and expiration items have been entered for periodic checking.

   iv. Scan the document and assign the file name. Save the document on the server for record keeping purposes.

   v. Return the documentation to the packaging with the part.

b. If the material is not required to be separated into smaller batches, the Materials Clerk will perform the following:

   i. Ensure that the item's packaging is closed and secured with tape or if it is stored in a container that the container latches are closed.

   ii. Store the item in the assigned location in the Storehouse.

c. If the part is a batch item that will be separated into smaller batches, the Materials Clerk will perform the following:

   i. Separate the items into smaller batches being careful not to mix lot/batch numbers.

   ii. Make a copy of the parts documentation and include it with each smaller batch.

   iii. Seal the bags for storage.

d. For materials that require special storage conditions, the Materials Clerk will perform the following:

   i. Flammable and hazardous materials are to be stored the designated flammable or hazardous material area.

   ii. Material requiring temperature control are to be stored in the designated refrigerator or freezer.

   iii. Parts requiring humidity control are to be stored indoors in the Storehouse in sealed packaging with humidity indicators clearly visible for periodic inspections.

   iv. During the period when items are in the Storehouse, the Supervisor, Material Control (or designee) will monitor and control shelf life and expiration items.

4. Procedures for Storing and Maintaining Consumable Materials in Flammable Cabinets, Freezers, and Refrigerators.

   a. If the consumable material was previously inventoried and stocked:

      i. Verify the item is listed on the Chemical Inventory Form for the flammable cabinet, freezer or refrigerator.

      ii. Properly file the item documentation in the binder assigned to the flammable cabinet, freezer or refrigerator.

   b. If the consumable material is a new inventory item:

i. Ensure the material is properly stored per the original manufacturer's environmental requirements by ensuring the correct flammable cabinet, freezer or refrigerator is selected.

ii. Add the item to the Chemicals Inventory Form that is posted on the exterior of the flammable cabinet, freezer or refrigerator.

iii. Ensure the CHB/SDS is updated in accordance with the units HAZCOM procedure.

iv. Ensure a HAZCOM label or CHB/SDS is applied to or attached to item container if required.

c. Notify the Foreman or delegated person of all consumable material items added to the Chemicals Inventory Form or when restocking.

5. Mukamalah Aviation Company conducts oversight of contract vendor's compliance with serviceable / unserviceable parts policies and procedures through the audit program as detailed in GMM Chapter 09.

4.1.5.2 Aircraft Parts Refurbishment Cycle

When aircraft engines, propellers, and repairable (rotable) components/parts are due for maintenance or sent for repair, the following steps are taken:

1. For engines, propellers, and APU's:

   a. When the article is removed from the aircraft, it is preserved and/or prepared for shipment as per the maintenance manual instructions. The article is placed in the appropriate shipping container or fixture and protected against damage. Any existing damage or defects observed prior to shipment are recorded and become part of the work scope.

   b. A work scope is prepared by Engineering to describe the work to be done on the article. Particular attention is given to items such as AD's, SB's, inspection program requirements, and requested modifications.

   c. For engines and propellers, Engineering is to ensure the article is sent to a vendor that has a GACA repair station certificate as these articles require the issuance of a GACA 8130-3. Engineering is to verify that the vendor is listed on our contract maintenance provider list in GMM 06-01-04 and on the Ops Specs D77.

   d. Planning will assemble and issue any required inspection program task cards or checklists that are to be part of the work scope and issue them with the work scope package.

   e. Article is shipped by Materials to the vendor.

   f. Engineering will perform routine follow-up with the vendor to ensure work scope is being completed and estimated completion dates.

   g. When the article is shipped back to Mukamalah, it will go through a receiving inspection as described in GMM 04-01-01.

2. For all other rotable parts:

   a. When the article is removed from the aircraft, it is preserved and/or prepared for shipment as per the maintenance manual instructions. The article is placed in the appropriate shipping container

or fixture and protected against damage. Any existing damage or defects observed prior to shipment are recorded and become part of the work scope.

b. A work scope is prepared by Engineering to describe the work to be done on the article. Particular attention is given to items such as AD's, SB's, inspection program requirements, required regulatory inspections (such as 91.451, 91.453), and requested modifications.

c. Engineering is to ensure the article is sent to a vendor that has the capability to issue at least one of the following airworthiness release certificates:

   i. FAA 8130-3

   ii. EASA Form One with an FAA dual release

   iii. GACA Form 8130-3

d. Planning will assemble and issue any required inspection program task cards or checklists that are to be part of the work scope and issue them with the work scope package.

e. Article is shipped by Materials to the vendor.

f. When the article is shipped back to MAC, it will go through a receiving inspection as described in GMM 04-01-01.

3. Mukamalah Aviation Company conducts oversight of contract vendor's compliance with parts refurbishment policies and procedures through the audit program as detailed in GMM Chapter 09.

4.1.5.3 Unserviceable Parts Procedures

When maintenance has unserviceable parts or consumable materials, the following steps are to be taken to return the part to Storehouse personnel.

1. The Foreman (or designee) is responsible that the following actions take place prior to returning unserviceable parts to the Storehouse:

   a. Parts that contained hazardous materials such as fuel, oil, or hydraulic fluid must be completely drained prior to placing them in the container. Ensure that all fluid lines and fittings are secured using caps, plugs, and bags (as applicable).

   b. An Unserviceable Tag or Repairable Tag must be completed and attached to the part.

   c. Parts are to be placed in a suitable container. Preferably it should be the container that the replacement part arrived in. If not, they are to be placed in a suitable container, box, or crate (as applicable).

   d. The container is to be securely closed or taped to protect the part in transit to the Storehouse.

   e. Unserviceable non-liquid consumable materials (screws, nuts, O-rings, etc…) are to be discarded in trash bins.

   f. Unserviceable consumables liquids, greases, and chemicals that have an expired shelf life or are otherwise determined to be unserviceable are to be marked unserviceable by taping an Unserviceable Parts Tag to the container and placing it in the Quarantine cage.

      i. When these unserviceable consumables are placed in Quarantine, Chief Inspector (or designee) is to be informed to determine that the item is to be discarded.

ii. The Chief Inspector (or designee) will notify Materials Control that items are to be discarded.

iii. Materials Control will then ensure the consumable item is disposed using proper hazardous materials handling procedures.

g. The Foreman (or designee) informs the Storehouse that the parts are ready for return.

2. The Storehouse Materials Clerks are responsible for performing the following:

a. Prior to picking up the parts from maintenance, verify that parts that used to contain fuel, oil, or hydraulic fluid have been drained and all lines and fittings secured.

b. Pick up the parts from maintenance and transport them to the shipping area.

c. Verify that the Unserviceable or Repairable Parts Tag is included with the part and that the information on the tag matches the part received.

d. Process the part for shipping in the computerized parts tracking system.

3. Mukamalah Aviation Company conducts oversight of contract vendor's compliance with unserviceable parts tagging policies and procedures through the audit program as detailed in GMM Chapter 09.

4.1.6 Precision Tools and Test Equipment Calibration

4.1.6.1 Tools and Test Equipment Program

This section describes the policies and procedures to ensure all required tools and test equipment are properly calibrated, handled and equivalency determination.

1. Responsibilities

a. The Director of Maintenance is responsible and has the authority to change policies and procedures to the calibrated tool and test equipment program, ensuring that all tools and test equipment are properly stored, controlled, tracked, calibrated, labeled, and entered into the calibration program. This authority may be delegated.

b. Engineering is responsible for determining tools and testing equipment equivalency. This authority may be delegated.

c. The Chief Inspector is responsible for performing periodic inspections of all precision tools in the tool room and the maintenance of calibration records.

2. Policy

a. Precision tools and test equipment used are subject to periodic checks and calibration.

b. All precision tools, measuring devices and test equipment will be properly stored in a controlled environment and must be handled and transported in accordance with the manufacturer's specifications.

c. Equivalent test equipment other than those which are recommended by the manufacturer of the article may be used if Engineering determines that it meets the recommended equipment specifications. Before using test equipment, maintenance is responsible for checking that the tool or test equipment used has a current calibration label attached.

d. Any piece of precision tools, measuring devices and test equipment found without a current calibration label, broken inspection or calibration seal must be properly tagged, removed from service, and placed in the designated tools and test equipment quarantine area until such time it is sent out for recalibration or calibration certificate has been verified.

e. At no time will any person be permitted to perform work on aircraft or components using precision tools, measuring devices and test equipment that is out of calibration. The test equipment labels will be checked at random to assure that equipment in use is in calibration.

f. If at any time a piece of test equipment inadvertently exceeds its calibration due date, it will be tagged, immediately removed from service, and placed in the tools and test equipment quarantine bin until such time it is sent out for recalibration.

g. For any precision tools, measuring devices and test equipment that require maintenance, suspected malfunctioning, unreadable or no longer performs as designed it will be tagged, immediately removed from service, and placed in the tools and test equipment quarantine bin until such time it is sent out for repair and recalibration.

h. Any tools and test equipment that require calibration shall be calibrated and certified with standards traceable to the National Institute of Standards and Technology (NIST) or other acceptable national standards.

i. Under no circumstances shall anyone use any personal calibrated tooling or test equipment.

3. Documentation

a. For each tool or test equipment calibrated, a Certificate of Calibration shall be kept on record.

b. The receiving inspector will ensure the tool has a valid calibration certificate.

c. When a tool is sent to the toolroom, the toolroom attendant will ensure that a calibration certificate is provided, a tool record number is created, and entered into the tooling database. The certificate shall remain on file for two years.

4. Calibration Records

a. An electronic database is maintained to keep a log and tracking of all precision tools, measuring devices and test equipment required to have a periodic calibration.

b. The computerized log and tracking will have the following information (as applicable):

i. Brief description or type of tool or test equipment

ii. Brand or Manufacture

iii. Model number.

iv. Part Number

v. Serial number

vi. Date of calibration

vii. Date the next calibration is due.

viii. A record number uniquely used to identify each piece of test equipment or tool Location.

ix. Standard used to perform calibration.

x. Method used to perform calibration.

xi. Results of calibration

xii. Company and or person that performed the calibration.

c. Calibration certificates will be stored and kept in a binder type filing (or equivalent) system marked as (Test Equipment Calibration Certification Documents).

d. Each tool or piece of test equipment that requires periodic calibration will have a calibration sticker attached indicating calibration date and calibration due date.

5. Out of Calibration Tools and Test Equipment

a. When a calibrated tool or test equipment is found to be out-of-calibration either by review of the calibration database or new purchase prior to use, the tool or test equipment will immediately be quarantined.

b. The tool or test equipment will then be placed in proper storage in a designated Quarantine area until such time the test equipment can be calibrated.

4.1.6.2 Calibration Labeling

This section describes the policies and procedures to ensure all required tools and test equipment are properly labelled.

1. Responsibilities

a. The Chief Inspector is responsible and has the authority for the tool and test equipment program and ensuring that all tools and test equipment are properly labeled. This authority may be delegated.

2. Policy

a. All precision tools, measuring devices and test equipment that require calibration shall be properly labeled with the following:

i. Record Number: This is a unique number used to identify each piece of tool and test equipment.

ii. Calibration Expiration date.

3. Procedures

a. New Calibrated Tool or Test Equipment: In the event new precision tools, measuring devices and test equipment is received the following must be done:

i. Once the tool or test equipment has passed the receiving inspection the tool and all documentation will then be routed to the toolroom attendant.

ii. The toolroom attendant will then verify all documentation, assign a “Record Number”, enter all required information of the tool into the computerized tool tracking and monitoring program, and place a label with the assigned number on the tool or test equipment.

iii. He must then file the calibration certificate in a binder (or equivalent) marked as Test Equipment Calibration Certified Documents.

b. Calibrated Tool or Test Equipment Received from a Vendor: When receiving precision tools, measuring device and test equipment back from a calibration vendor the following must be done:

i. Once the tool or test equipment has passed the receiving inspection, the tool and all documentation will then be routed to the toolroom.

ii. The toolroom attendant will then update the tool record with the new calibration due date and file the calibration record.

iii. He must also verify that the tool or test equipment has a calibration label attached to it, with its next calibration due date as stated in the calibration certificate.

4.1.6.3 Calibration Intervals

This section describes the policies and procedures that establish the calibration intervals.

1. Responsibilities

a. The Chief Inspector is responsible for the tool and test equipment program and ensuring that all tools and test equipment calibration intervals are followed. This authority may be delegated.

2. Policy

a. All calibrated tools and test equipment must follow the calibration intervals as stated by the tool and test equipment manufacturer.

b. When a new tool and test equipment is put into service, the calibration interval is set to the manufacturer's recommended value or one year whichever is smaller.

c. Calibrations expire on the calibration expiration date at midnight.

4.1.6.4 Equivalent Tools and Test Equipment

This section describes the process for determining equivalency of tooling and test equipment.

1. Responsibilities

a. Engineering is responsible for determining if alternate tools and test equipment are equivalent to those recommended by the manufacturer.

2. Policy

a. Maintenance may use precision tools, measuring devices and test equipment equivalent to that recommended by the manufacturer for the purpose of making measurements or performing tests to determine airworthiness.

b. Engineering will determine equivalency by evaluating data such as technical data, drawings, specifications, instructions, photographs, certificates, and reports on the tool or test equipment to determine if it can perform all necessary tests and checking all required parameters of the articles upon which it is used.

c. Engineering will utilize manufacturers' specifications to compare and determine equivalency.

d. Specifications of proposed equivalent test equipment or tools must be equal to specifications of test recommended by the manufacturer of the equipment under test before the proposed equivalent test equipment may be used.

3. Procedures

    a. To establish equivalency on precision tools, measuring devices and test equipment Engineering must verify the following:

        i. Can the test equipment measure all the parameters required for the specific function being tested/verified to determine the article meets the specification being tested for approval for return to service?

        ii. Can the tool accomplish all the required functions?

        iii. Does the test equipment or tool have a range and accuracy equivalent to the original equipment manufacturer (OEM) equipment for the intended use?

        iv. Can any required records of measurements be made as well as for the OEM recommended equipment or tool?

        v. Is the conclusion of equivalency based on actual testing, as well as analysis?

    b. The engineering analysis must be documented. Each analysis and report must have Record Number of the tool or test equipment that links it to the subject equipment. The report must be signed by the engineer.

    c. All equivalent tools or test equipment must be entered into the tool and test equipment tracking program.

    d. All equivalent tools or test equipment must be labeled.

    e. Engineering may develop appropriate instructions for using the tool or test equipment and provide inspection or calibration intervals as needed. These tools must be calibrated in accordance with this section.

    f. All tools and test equipment reports, and technical data will then be filed into the "Equivalent Test Equipment Binder" in the engineering office will contain the source data used for the manufacture of each test fixture.

4.1.6.5 Tool and Test Equipment Found Out of Calibration Tolerance

This section describes the policies and procedures if a piece of calibrated tooling or test equipment is found to be outside of calibration tolerance.

1. Responsibilities

    a. The Chief Inspector is responsible for ensuring that the Director of Maintenance is kept informed when a piece of calibrated tooling or test equipment is found to be outside of calibration tolerance.

    b. The Director of Maintenance is responsible for determining what work was performed using the out-of-tolerance equipment and the need for re-inspection.

2. Policy

    a. When tooling and test equipment is sent for recurrent calibration, a “receiving report” (or similar) will be obtained indicating whether the unit is found to be within calibration tolerances before any adjustments are made.

b. If a piece of tooling or equipment is found to be out of tolerance, tool records and work orders will be reviewed to determine what aircraft/component maintenance was performed using the out-of-tolerance tooling, dating back to the last calibration event for that tool.

3. Procedures

a. When tooling and test equipment is routed for calibration, the tool room attendant is required to request a report from the person or organization performing the calibration stating whether the tool is found to be inside or outside of calibration tolerance prior to making any adjustments.

b. The receiving inspector will review all reports received from calibration vendors.

c. Immediately upon receiving a report that a tool or piece of equipment has been identified as being out of calibration tolerance, the receiving inspector will inform Chief Inspector and Director of Maintenance.

d. Planning personnel retrieve the Tool and Test Equipment Logs dating back to the last calibration event for the tool or test equipment in question and determine which aircraft/component(s) were worked on and on which date(s).

e. Planning personnel then retrieve the work packages corresponding to the dates and tail numbers (or serial numbers) listed where the tooling in question has been used.

f. Planning personnel and Chief Inspector review the work order(s) and determine as to what exact work was performed using the out-of-tolerance equipment. They inform the Director of Maintenance of their findings.

g. Planning personnel and Chief Inspector may also review later work orders for the affected aircraft/components to determine if the work performed using the out-of-tolerance equipment has been repeated at a later date using a different calibrated tool or piece of test equipment, in which case there is no requirement to re-inspect the work.

4.1.6.6 Control of Tool and Test Equipment Updateable Software

This section describes the policies and procedures to ensure tooling and test equipment which operates on updatable software has the software levels maintained in accordance with equipment manufacturer's requirements.

1. Responsibilities

a. The Chief Inspector is responsible for ensuring that tooling and test equipment which operates on updatable software has the software levels maintained as required.

b. Foremen are responsible for identifying tooling and equipment used in their work areas and for passing details of affected tooling and equipment including make, model, serial number, and software level to the technical librarian.

c. The Technical Librarian is responsible for checking the currency of tooling and equipment software levels and for communicating with tooling and equipment manufacturers to obtain their current software levels and update requirements.

2. Policy

a. Checks of tooling and equipment software level currency will be performed at intervals of 12 calendar months, or at shorter intervals if required by the affected tooling and equipment manufacturer.

b. When a piece of tooling or equipment is found to have software out of currency, the affected equipment will have its software updated no later than the next calibration due date, or sooner if required by the equipment manufacturer.

3. Procedures

a. Maintenance identifies all calibrated tooling and equipment used in their work area and operating on updateable software. Examples of such equipment are helicopter blade track & balancing kits and aircraft weighing kits.

b. Foremen send details of the affected equipment to the Technical Librarian, including:

i. Equipment manufacturer

ii. Model number or equipment type.

iii. Serial number

iv. Current installed software level

v. Year / Month software level was checked.

vi. Next calibration due date.

c. The Technical Librarian maintains the above information in electronic format and checks the information monthly to ensure no affected equipment remains in use for more than 12 calendar months (or sooner, if manufacturer requires) without having its software checked for currency.

d. During the calendar month in which each piece of affected equipment is due for software level check, the Technical Librarian either checks the manufacturer's website or communicates with the manufacturer to determine current available software level and requirements for software update.

e. If equipment software is found out of currency, the Technical Librarian communicates the information to the tool room attendant to arrange for software update to coincide with next due calibration.

f. Should the manufacturer require the software to be updated sooner, the Technical Librarian informs the tool room attendant of the requirement and instructs them to arrange for the software update before the date required by the manufacture.

4.1.7 Non-Calibrated Tools

4.1.7.1 Introduction

1. Non-calibrated tools are tools which do not require a periodic calibration check.

2. These include manufacturer special tools and locally made tools, which are both kept in the toolroom, and the toolboxes that are signed out by mechanics.

3. The mechanic's tools and toolboxes are all Company-owned but are the responsibility of the technician or mechanic to whom they are issued. No personally owned tools will be allowed on Mukamalah Aviation premises.

4.1.7.2 Responsibility

1. Mechanic
    a. Each mechanic is responsible for safeguarding toolboxes and all the tools inside. Every toolbox used by a mechanic must be “shadowed” in a manner which makes it easy to recognize when a tool is missing. No tool is to be kept in a toolbox if it is not “shadowed.”
    b. Each mechanic must perform a visual inventory of his toolbox at time of toolbox sign-out/sign-in, the end of each shift, and at the time of “push out” of an aircraft he is working on or has worked on during that maintenance visit. He must report all lost or damaged tools immediately to his lead.
    c. Tool Attendants are responsible for ensuring that all the tools in each box are engraved with an identification number assigned to that toolbox.
    d. If a mechanic receives a new tool or discovers a tool that has not been engraved, he must inform the tool attendant so it can be properly engraved.
    e. The more tools that are taken to an aircraft, the higher the chances are that one could be left behind. Therefore, the mechanic must take only the tools necessary to perform the task at hand.
    f. When possible, the mechanic should not leave tools on the aircraft in especially hard-to-see dark areas and cavities where the tool can be mistakenly lost.
    g. After completion of every task, the mechanic will inspect the work area for rags, tools, and debris.
    h. If the mechanic needs to affix a tool to an aircraft and leave it there until maintenance is completed (e.g., rigging pins, rigging fixtures, spoiler locks), he must place a non-routine entry in the maintenance logbook. Before he affixes this tool to the aircraft, he must ensure that the toolroom attendant has made it highly visible by attaching a long orange streamer to it, by applying red or orange reflective tape to it, or by painting it fluorescent orange or red.

Note: In rare cases, when a streamer or painting is impractical, only a non-routine is required.

2. Tool Room Attendant
    a. The Tool Room Attendant is responsible for ensuring tools are identified and marked for each toolbox and other special tools are marked to identify their assigned tool number.
    b. Toolboxes will also have a detailed list of contents for identifying the items in each box. He shall maintain an accurate list of all tool records and numbers assigned.

4.1.7.3 Lost or Damaged Tools

This section describes the policies and procedures to be followed to respond to Lost or Damaged Tools.

1. Responsibilities
    a. The Chief Inspector is responsible and has the authority for Lost or Damaged Tool reports. This authority may be delegated.
    b. All Maintenance personnel are responsible for following the policies and procedures of this section.
2. Policy

a. All mechanics are required to be accountable for their tools; furthermore, they are also required to report any tool that is lost or damaged to their respective Lead.

3. Procedures

a. If at any time during the performance of a task or inventorying a Crew Toolbox a tool is discovered to be lost, the mechanic is required to report the lost tool to his Lead.

b. The Lead will determine the action to be taken to locate the lost tool and record the actions in the Lost/Damaged Tool Report. The actions at minimum shall include:

i. The aircraft will be thoroughly searched for the lost tool.

ii. All relevant panels and fairings will be removed during the search.

iii. Toolboxes and surrounding area will be checked.

c. The determined actions shall be initiated immediately by the Lead.

d. If the tool is located, the Lead completes the relevant sections of the Lost/Damaged Tool Report and files in the Tool Control binder.

e. If the tool is not located, the Lead will contact Chief Inspector or designee who will then:

i. Review the actions taken as recorded on the Lost/Damaged Tool Report and determine if additional steps will be required to release the aircraft.

ii. If additional steps are required, he will notify the Lead involved for further action.

iii. If the Chief Inspector is satisfied with the initial actions taken or after completion of the additional steps, the Chief Inspector will determine if the aircraft can be released.

iv. When the aircraft can be determined, Chief Inspector, Lead and Mechanic involved will complete and sign the Lost/Damaged Tool Report and the completed report will be filed in the Tool Control binder for 2 years. Reports will be maintained in the tool room by the tool room attendant.

f. Upon release of the aircraft and the lost tool is not located, Chief Inspector or delegated person will:

i. Notify the Lead of the lost tool information.

ii. The Lead or Tool Room Attendant will ensure the Tools and Test Equipment Database or Crew Toolbox inventory is annotated “Lost”.

4.1.7.4 Damaged and Unserviceable Tools

This section describes the policies and procedures for processing damaged, unserviceable, rejected, and scrap tools and test equipment.

1. Responsibilities

a. The Chief Inspector is responsible for the tool and testing equipment program and ensuring that all damaged, unserviceable, rejected, and scrap tools policy is followed. This authority may be delegated.

2. Policy

a. All personnel are responsible and accountable for all tools under their control and use. This includes but is not limited to, all tools in Crew Toolboxes, calibrated tools, special tools and equipment checked out from the tool room or other tools assigned to their respective unit.

b. All personnel are required to follow the damaged, unserviceable, rejected and scrap tools policy.

3. Procedures

a. If a tool is identified during inventory of a Crew Toolbox, tool room audit or while performing a task as unserviceable, damaged, incomplete kit, inability to be calibrated, or other reason by the mechanic, tool room attendant or inspector the following must be performed:

i. The mechanic or tool room attendant must advise the shift to lead immediately about his finding.

ii. The Lead will determine if the tool is damaged or unserviceable.

b. Once the determination has been made by the Lead that the tool is damaged or unserviceable the following must be performed:

i. The Lead, Mechanic and Tool room attendant must complete relevant sections of the Lost/Damaged Tool Report.

ii. The completed Lost/Damaged Tool Report will then be given to the tool room attendant.

iii. Notify the Lead of the damaged or unserviceable tool.

c. The Tool Room Attendant must perform the following:

i. Tag the damaged or unserviceable tool.

ii. Place the unserviceable tool in the tool quarantine area.

iii. Update the unserviceable tool on the inventory database as “Out of Service” (OOS)

iv. Notify the materials department for tool disposal.

v. File the Lost/Damaged Tool Report in a binder for 2 years).

4.2 HAZARDOUS MATERIALS HANDLING

4.2.1 General

This section describes the handling of Hazardous Materials and Dangerous Goods.

1. Responsibilities
    a. The Director of Maintenance has the responsibility and authority for ensuring that all shipping and receiving personnel that handle hazardous material and dangerous goods are properly trained. This authority may be delegated.
2. Policy
    a. All exposed parts are to be suitably protected during storage and transit to avoid possible damage or mutilation of surfaces. All hazardous materials being shipped are packaged, preserved, and marked as per International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284).
    b. Mukamalah Aviation Company personnel will adhere to the manufacturers recommended environmental storage requirements.
    c. Personnel handling hazardous material must be properly trained to the requirements of ICAO Document 9284 and the GACA approved Dangerous Goods Manual and Training Program.
    d. Transportation of Dangerous Goods on board the aircraft is to be done in accordance with the policies and procedures contained in the GACA approved Dangerous Goods Manual and Training Program.
3. Procedures
    a. Technicians must follow HAZMAT procedures when handling components that contain any of the following:
        i. Fuel
        ii. Oil
        iii. Hydraulic Fluid
        iv. Waste system fluid.
        v. Greases or lubricants
        vi. Batteries
    b. Mechanics must drain all hazardous fluids from a component and clean external surface of any residual fluid or greases. Exceptions are as follows:
        i. Components that contain internal batteries that are not line replaceable are to remain intact.
        ii. Components that have factory sealed fluids that are not serviceable by normal AMM procedures.
        iii. Components that have greases or fluids inside are only serviceable by zerk fittings. External surfaces are to be cleaned and zerk fittings covered and sealed to prevent leaks.

c. Mechanics must ensure that open component lines and fittings are properly capped, plugged, bagged, or sealed.

d. Mechanics are to mark “HAZMAT” on the Unserviceable Tag.

e. The Foreman must confirm with the Mechanic that hazardous fluids have been removed from the component and the Unserviceable Tag has been properly completed prior to sending it to Materials for shipping or scrap.

f. Materials is to confirm with the Foreman that the component has been drained of all hazardous fluids prior to shipment.

g. All drained fluids or discarded liquid consumable items are to be properly discarded by placing them in the dedicated waste drums.

h. All other discarded consumable items that are still inside of their original containers are to be placed in the dedicated reclamation area for disposal.

4. Mukamalah Aviation Company conducts oversight of contract vendor’s compliance with hazardous materials handling policies and procedures through the audit program as detailed in GMM Chapter 09.

5. CONTINUOUS ANALYSIS AND SURVEILLANCE SYSTEM (CASS)

GACAR 121.691, 121. app g II N

5.1 GENERAL

A CASS program is a system used by MAC to continuously monitor and evaluate the effectiveness of aircraft maintenance programs. It employs a closed-loop cycle that involves:

1. Surveillance: This includes activities like audits and investigations of operational events to ensure compliance with regulations and the maintenance program.
2. Data Collection and Analysis: This involves gathering and analyzing operational data.
3. Corrective Action: Based on the findings from surveillance and analysis.
4. Follow-up: monitors the effectiveness of the implemented corrective actions.

The purpose of this evaluation is to ensure that the CASS program:

1. Complies with the requirements of GACAR Part 121.
2. Effectively monitors and evaluates the maintenance program.
3. Provides sufficient data to identify and address potential safety concerns.
4. Is implemented clearly, concise, and easy to understand.

MAC will achieve the CASS into two manuals which covered all GACA requirements:

1. Quality Management Manual (QMM)
2. Reliability Control Program (RCP)

6. RVSM MAINTENANCE PROGRAM

6.1 RVSM MAINTENANCE PROGRAM OVERVIEW

6.1.1 Repairs and Modifications

1. This manual will be used by Mukamalah Aviation to ensure that the aircraft approved for Reduced Vertical Separation Minimums (RVSM) will be maintained within current GACA regulations and to the operations specifications required for RVSM operations.
2. The current maintenance and inspection programs for Mukamalah Aviation's RVSM aircraft contain all the elements identified in Ebook Volume 4, Chapter 18, Section 2 and are sufficient to maintain the aircraft systems and equipment in accordance with RVSM requirements.
3. The maintenance and inspection requirements for the aircraft are tracked using a computerized maintenance tracking system.
4. The Company has completed monitoring flights to ensure the accuracy and height keeping performance of the altimetry systems on all aircraft covered in this manual.
5. For any RVSM capable aircraft added to the Company's fleet in future, GACA requires the performance of monitoring flights within six months of issuance of the RVSM Letter of Authorization. Additionally, recurrent height monitoring will be performed.
6. The Company will maintain an operating history of incidents related to poor height keeping performance, which indicates weakness in training, procedures or maintenance.
7. Responsibility for compliance with the requirements of this RVSM Maintenance lies with the Company.
8. The RVSM Representatives can be contacted at +966-13 877-4937, -4934, and -4938 respectively. In the event an RVSM Representative is unable to personally ensure that the compliance with the requirements of this RVSM maintenance program is being accomplished, a qualified aircrew member and/or aircraft maintenance representative employed by MAC may act as a delegate.
9. To ensure continued compliance with RVSM maintenance and inspection requirements, the Company utilizes sufficient maintenance facilities for its RVSM Fleet aircraft. Mukamalah Aviation's primary base is located at Dammam, Saudi Arabia (KFIA).
10. The Company will use other appropriately approved maintenance facilities to ensure continued compliance with RVSM requirements on an as-needed basis.
11. The RVSM Representative or his designee will ensure additional maintenance support is obtained through other GACA approved repair stations based on the aircraft location.
12. Maintenance Facility: Phone: +966 13 877-4941
13. Maintenance Facility Address :

    Mukamalah Aviation Company

    King Fahd International Airport

    East Service Road

    Dammam 31311

Saudi Arabia

6.2 RVSM MAINTENANCE REQUIREMENTS

This maintenance program identifies all aircraft equipment required for RVSM, together with scheduled maintenance requirements for that equipment.

1. To retain RVSM approval for these aircraft, the Company will accomplish the following inspections:
    a. A repetitive Pitot Static Inspection: Pitot/static system functional leak test meets the requirements for recertification of the Air Data Modules and pitot/static system for RVSM. This inspection is scheduled at 24-month intervals.
    b. An RVSM skin waviness inspection: This inspection ensures that the fuselage skin smoothness in the vicinity of the static ports is acceptable for RVSM. This inspection is scheduled at 24-month intervals or as required to maintain RVSM certification thru the respective maintenance programs.
    c. A functional test of the Digital Air Data Computing System: This functional check checks the Air Data Modules, digital altitude signal to the altimeter system, both pilot's and co-pilot's altimeter displays, the altitude alert system and the autopilot altitude hold function. This inspection is scheduled at 24-month intervals as required by GACAR 91.451.
    d. An inspection of the ATC/Mode S transponders: This adjustment/test certifies the altitude reporting function of the transponder in accordance with GACAR 43, Appendix E, and as required by GACAR 91.453 at 24-month intervals.
2. Any item of work on RVSM critical items noted below, that could result in a failure, malfunction, or defect that could endanger the safe operation of the aircraft if not performed properly, or if improper materials are used:
    a. Alterations, installations, adjustment, or testing of RVSM critical components; or
    b. Alterations or repairs of RVSM critical structure.

6.3 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

For continued airworthiness the RVSM Representative is responsible for ensuring the following practices are accomplished:

1. Avionics components of identical part numbers may be interchanged freely during the service lifetime of this airframe. If alternate equipment part numbers are to be installed, the units must be analyzed on a system level to determine if the new components are acceptable for RVSM.

   NOTE: The Type Certificate or Supplemental Type Certificate holder will make this determination.

2. Pre-Flight Checklist requires the pilot to inspect the pitot/static areas. It is imperative that prior to all flights in RVSM airspace, the pilot visually inspects the RVSM Critical Area for obvious damage or deformation, such as paint chips or dents, to the skin surface.
3. Airframe and static systems shall be maintained in accordance with the airframe manufacturer's inspection standards and procedures, and instructions for continued airworthiness, if applicable.
4. Any modification, repair, or design change which in any way alters the initial RVSM approval will require a design review by the aircraft manufacturer and GACA engineering.
5. Any maintenance practices which may affect the continuing RVSM approval integrity (e.g. the alignment of pitot/static probes, dents, or deformation around static plates) will be referred to the approving authority or persons delegated by the authority.
6. A system leak check inspection will be accomplished any time a quick disconnect static line is broken.

6.4 RVSM PARTS AND COMPONENTS CONTROL

1. The RVSM Representative or designee will ensure that all persons responsible for obtaining or replacing RVSM system components are knowledgeable of the aircraft's RVSM status and requirements.
2. Parts and components required for RVSM operations will be procured from the manufacturer of that equipment or from an authorized vendor. The following procedures shall be utilized:
    a. The RVSM Representative or designee and Maintenance personnel will ensure that all RVSM related parts and components to be used on the aircraft are the part numbers that are described in the appropriate RVSM Service Bulletin and/or the Manufacturer's Parts Manual, which also identifies RVSM critical equipment.
    b. Any deviations to part or model numbers of RVSM related equipment requires Manufacturer and GACA engineering approval.
    c. Maintenance logs and computerized maintenance tracking programs will be used to track RVSM related components and maintenance.

6.5 RVSM SERVICE PROCEDURES

1. When critical equipment malfunctions occur that affect the aircraft's ability to operate in RVSM airspace, the Minimum Equipment List (MEL) will be referred to for determining specific allowable flight operations.
2. At such time a RVSM related malfunction occurs, the aircraft will become RVSM non-compliant and the following procedures will be adhered to:
    a. Adding flight plan remarks to prevent aircraft operation in RVSM airspace until corrective action is accomplished. The aircraft is not to be operated in RVSM airspace.
    b. Adding an entry to the aircraft flight log to indicate that the aircraft is not compliant with RVSM requirements until the discrepancy(s) is corrected.
    c. If the aircraft is RVSM restricted due to MEL'ed equipment then the non-compliance statement should be added as part of the discrepancy and also noted on the MEL log book cover placard in the "list flight restrictions" column.
    d. If the aircraft RVSM systems meet the requirements of the AMM but due to the tighter limits for operating in RVSM airspace the aircraft is considered RVSM non-compliant then the log book entry should be made by maintenance.
    e. A placard placed on the aircraft instrument panel and/or pilot's control yoke stating "AIRCRAFT IS RVSM NON-COMPLIANT".
    f. If required, MAC's RVSM Representative will report any altitude-keeping performance error to the GACA within 72 hours, along with initial analysis of causal factors and measures to prevent further events. The "RVSM Non-Compliance and/or Malfunction Report" found in GMM 12.2.11 may be used to submit to GACA.
    g. The top "Non-Compliance/Malfunction" portion should be filled out and sent through the Quality Control Inspection Programs Unit to GACA. The reporting criteria will be per GACAR Part 91, Appendix D, Section V as follows:
        iv. Total Vertical error of 300 feet or more.
        v. Altimetry system error of 245 feet or more. OR
        vi. Assigned altitude deviation of 300 feet or more.
3. For the aircraft to return to RVSM compliant status, the failure and/or malfunction of the affected component must be confirmed and isolated by maintenance action.
4. Following any corrective action procedure, a determination must be made by the RVSM Representative or his designee that the affected equipment is operational and conforms to the MEL and/or the AMM prior to RVSM
5. After accomplishment of corrective maintenance and testing, the RVSM Representative or his designee will ensure that the placard is removed from the aircraft instrument panel and that an entry is made in the aircraft maintenance record which will return the aircraft to RVSM authorized status in accordance with GACAR 43.9.
6. The maintenance entry will state the aircraft is "RVSM Compliant" and may be added as part of the MEL corrective action. If required, the lower "Malfunction Correction Report" portion of the "RVSM Non-

Compliance and/or Malfunction Report" should be filled and sent through the Inspection Programs Unit to the GACA.

6.6 RVSM MAINTENANCE TRAINING

1. Although factory RVSM training is preferred, MAC provides in-house training for maintenance personnel as long as the Training Instructor is qualified and he has received the factory RVSM training. MAC will ensure that all maintenance personnel that work on critical RVSM systems will be properly trained.
2. It is the responsibility of the RVSM Representative or designee for MAC to inquire with the management of GACA Part 145 maintenance facilities to ensure that all personnel performing maintenance on the RVSM systems are properly trained, qualified, and knowledgeable to perform maintenance on RVSM systems.
3. The RVSM Representative or designee can review records of all RVSM related maintenance performed to ensure compliance with the requirements of this program and to ensure continued height-keeping ability of covered aircraft.
4. The RVSM Representative of designee will record the information and complete the RVSM Service Facility Compliance
5. Form found in GMM 12.02.10. The completed form shall be reviewed and filed under “RVSM” in the applicable records with the MAC Planning Unit. Any discrepancies noted shall be resolved prior to using the maintenance facilities.

6.7 RVSM TEST EQUIPMENT

1. MAC does not own or control test equipment specific to the maintenance or calibration of RVSM equipment. Therefore, MAC will use only GACA authorized facilities, operating as GACA certified repair stations under GACAR Part 145 who, by virtue of their approval from the aircraft manufacturer or the GACA, are qualified and responsible for the utilization, calibration, and operation or test equipment.
2. MAC will utilize these facilities on an as-needed basis for maintenance and/or calibration of RVSM equipment. The RVSM Representative or designee is responsible for ensuring that the following requirements are met, by communicating these requirements to the GACA authorized facility:
    a. Calibration of RVSM test equipment does not exceed 12 calendar months.
    b. Traceability of calibrated test equipment to standards of the National Institute of Standards and Technology or equivalent National Certifying Agency.
    c. Appropriate list of repair station personnel trained in the use of specialized RVSM test equipment.
    d. Adherence to acceptable shop and line maintenance practices.
    e. Specific test equipment, as identified in the airframe or component maintenance manuals, or equivalent is utilized during RVSM maintenance/inspection procedures.
3. The results of the review will be recorded by the RVSM Representative or his designee on the "RVSM Service Facility Compliance Form".

NOTE: Built-in Test Equipment (BITE) testing is not an acceptable basis for use in calibrations unless it is shown to be acceptable by the component manufacturer with approval from the pertinent authorities.

6.8 RVSM CRITICAL EQUIPMENT & CRITICAL AREAS

1. Within six months of a newly acquired aircraft gaining RVSM approval, a monitoring flight will be satisfactory completed.
2. When maintenance is performed on RVSM Critical Equipment an operational check of that equipment will be performed before entering RVSM airspace.
3. At any time, pitot-static probes, static ports or static system lines are replaced, or major skin damage in the RVSM critical area is repaired, the relevant TC/STC holder's technical data will be reviewed for possible check flight requirements in addition to ground operational tests. A check flight will be performed if that data requires it.
4. To meet the requirements of GACAR Part 91 Appendix D, Section V, recurrent height monitoring using AGHME, GMU or HMU will be performed every at least once every two years or within intervals of 1,000 flight hours per airplane, whichever period is longer.
5. Should recurrent monitoring not be performed by the required date or time (e.g. due to GMU non-availability, etc.) the RVSM Representative will advise GACA prior to monitoring expiration date / aircraft hours and advise revised schedule for height monitoring to be performed not more than three months after the due date / aircraft hours. No aircraft which is overdue for height monitoring will continue in RVSM service without written agreement from GACA.
6. With regards to recurrent height monitoring intervals, note the following:
    f. A minimum of two aircraft must be monitored.
    g. Should any aircraft utilization increase beyond 1000 hours in a two-year period, the two-year limitation will apply.
7. Planning & Engineering will monitoring results via the MIDRMA website (KSA :: MIDRMA - Middle East Regional Monitoring Agency) to verify that the aircraft have been successfully monitored and are current with ICAO fleet monitoring requirements.

List of RVSM Critical Equipment			
Qty	Type	Manufacturer	Part Number
2	Air Data Inertial Reference Unit (ADIRU)	Honeywell	HG2050BC02 HG2050BC04 (N807XA)
2	Mode S Transponder	Honeywell	822-1338-205
2	Air Data Modules	Thales	C17001CA01 Or C17001BA01
3	Pitot Probes	Goodrich	0851HT1
6	Static Ports	JD Ott	69-15853-3
2	CDS Display Unit	Honeywell	4091900-942

2	CDS EFIS Control Panel	Honeywell	4082730-911
2	AOA Vane	Goodrich	086FL1
2	Flight Control Computer	Rockwell Collins	822-1604-102
1	Mode Control Panel	Rockwell Collins	822-1567-104
2	Flight Management Computer	GE Aviation	176200-01-01

Description of RVSM Critical Areas
4 Primary Static Ports: 30 inch fore/aft and 2 stringers above/below the static port locations

Additional Equipment			
Qty	Type	Manufacturer	Part Number
1	TCAS	Rockwell Collins Honeywell	822-2911-002 940-0351-001 (N807XA)
2	Multimode Receiver ILS/GPS	Rockwell Collins Honeywell	822-1821-332 066-50029-1201 (N807XA)

8. Boeing 737-800 RVSM Critical Equipment Areas References

   a. Structural Repair Manual - Skin waviness inspection for RSVM - Aerodynamic smoothness requirements for RVSM (51-10-03)

   b. Boeing Service Letter 737-SL-02-017-H or later revisions.

   c. MAC Boeing 737-800 Aircraft Inspection Program latest GACA approved revision.

6.9 CONTINUED AIRWORTHINESS REQUIREMENTS

B737-800 RVSM Continued Airworthiness Requirements

REQUIREMENTS	TASK	TASK NUMBER	INTERVAL	NOTES
Altimetry/Air Data System	Pitot Probe & Static Heat Test Pitot Static System Drain & Leak Check Air Data Reference System Test	34-RAS-04-01 34-RAS-05-01 34-RAS-06-01 34-RAS-07-01 34-RAS-03-01	24 Months 24 Months 24 Months	GACAR 91.451, 43 Appendix D GACAR 91.451, 43 Appendix D GACAR 91.451, 43 Appendix D
Automatic Altitude Hold Control System	No scheduled task (Autopilot has automated self-testing / fault monitoring)	N/A	N/A	N/A
Altitude Alert System	No scheduled task	N/A	N/A	N/A
Air Traffic Control Transponder	ATC System Functional Check	34-110-01-03 34-110-01-04	24 Months 24 Months	GACAR 91.453, 43 Appendix E

AIRFRAME REQUIREMENTS	TASK	TASK NUMBER	INTERVAL	NOTES
External Inspections	External Inspection Static Ports	05-RAS-10-01 05-RAS-30-01 34-RAS-06-01	Preflight Daily 24 Months	Detailed Walk-around and Area Inspections of Static Plates Static Plates and Skin Waviness

6.10 RESPONSIBLE INDIVIDUAL

MAC's Director of Maintenance will be responsible for ensuring the aircraft are maintained in accordance with this approved program.

6.11 TRAINING

1. The Director of Maintenance or designee will ensure that all personnel, including outside contractors are properly trained to perform RVSM critical work. The training will be provided though the Flight Safety E-Learning Portal (Maintenance RVSM).
2. Contract maintenance personnel will be trained in the Mukamalah Aviation RVSM policies and procedures as part of the GMM training prior to commencing work.

6.12 CREW NOTIFICATION

If any component failures or other maintenance requirement interferes with the ability of the aircraft to enter RVSM airspace and the aircraft is otherwise airworthy, the Company maintenance personnel will enter it in the maintenance logbook and transfer the item to the deferred maintenance log per procedures in the Company's General Maintenance Manual.

6.13 RVSM MAINTENANCE INSPECTORS

1. Reduced Vertical Separation Minimum (RVSM) Inspectors are specially qualified (trained, experienced, and certificated) inspection personnel employed by MAC, as well as other qualified inspection personnel working under contract maintenance agencies, who perform inspections of RVSM safety critical aircraft equipment (such as the altimetry systems equipment, etc.) and inspections of RVSM safety critical aircraft structures (such as the skin in the areas surrounding the static ports, etc.).
2. The RVSM safety critical equipment and structures are listed and described in the RVSM Maintenance Program Manual.
3. Work conformity inspections (inspections of work performed), visual condition inspections (such as an initial visual inspections, preliminary visual inspections, detailed visual inspections, or special visual inspections, etc.), NDT inspections, and similar inspections of the RVSM safety critical equipment or structure are generally classified as RVSM inspections. RVSM inspections must be performed per the RVSM inspection procedures in the GMM.
4. If employed by the Company, RVSM Inspectors must be issued specific written MAC authorization to perform those duties on the company's aircraft and equipment.
5. If working under a contract maintenance agency performing work during an aircraft visit, the contract agency's RVSM Inspectors must be issued specific written authorization to perform those duties including RVSM safety critical components maintained, inspected, altered, and installed during the visit.
6. Company's RVSM Inspector authorization is not required for inspection personnel working under a contract maintenance agency during component repair order visits.
7. For these items, Company's RVSM inspection procedures are superseded by Company's contract maintenance agency evaluation process as well as the contract agency's inspection procedures that are acceptable to GACA.

6.14 RVSM CRITICAL PARTS CONTROL

The Director of Maintenance or designee will be responsible for critical parts control. This control procedure is based on RVSM Manual Section 8. Only parts noted will be acceptable for installation. Parts will be physically verified by Part Number upon receipt and prior to installation on the airframe.

6.15 RETURN TO SERVICE

1. Mukamalah Aviation technicians and outside vendors will follow the procedures in Chapter 6 “Inspections and Maintenance” of the General Maintenance Manual.
2. These procedures will ensure that the aircraft is properly returned for service after any maintenance is performed. In the event the aircraft is found to be non-compliant for RVSM airspace, due to something other than a component change, (structural) then the aircraft will require a GPS monitoring unit or Height monitoring unit flight to return the aircraft to service.
3. Aircraft will be upgraded/downgraded as per MEL requirements.

6.16 CONTINUED AIRWORTHINESS

1. Pursuant to the aircraft manufacturer's instructions for continued airworthiness or subsequent revisions outlined in Chapter 3, all the various inspections that are required to ensure that the aircraft remains RVSM compliant.
2. This section lists the visual inspections, system tests and chapters from the Structural Repair Manual should repairs in the vicinity of the static ports be needed.
3. All these inspections have been incorporated into the applicable fleet's Aircraft Inspection Program as approved by GACA.

6.17 COMPONENT OR MODIFICATION INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

There are presently no ICA's that exist for any RVSM component nor have any modifications been performed to the aircraft affecting RVSM compliance. If any ICA's are developed the Director of Maintenance will revise this document accordingly and obtain GACA approval for the revision.

6.18 OTHER MAINTENANCE REQUIREMENTS

There are presently no other maintenance requirements that have been identified. If any other maintenance requirements are developed, the Director of Maintenance will revise this document accordingly and obtain GACA approval for the revision.

7. TRAINING

7.1 GENERAL

GACAR 121.695 121.1565 ,121. app g II (h), (R)

1. Mukamalah Aviation's training arm, ATT&S, keeps aircraft mechanics up to date on procedures, techniques, and new equipment to ensure they can reliably assess repair work. They also make sure all mechanics have the right certifications, update training programs when aircraft inspection procedures change, and keep detailed records of each mechanic's training.
2. ATT&S relies on its supervisor to equip mechanics and inspectors with the skills and knowledge they need. This leader ensures everyone receives training on relevant procedures, techniques, and equipment, preparing them to excel in their duties.
3. Working with maintenance management, the Supervisor determines which courses are offered and when. They handle Out-of-Kingdom training requests from management, overseeing assignments and placements.
4. Additionally, they supervise training coordinators and review all taught curricula for quality and effectiveness. Finally, the Supervisor ensures the accuracy of training records by overseeing their upkeep and maintenance.
5. Training is responsible for developing, maintaining, and updating the course curriculum, ensuring only the most current data is provided to their students.
6. In addition, the coordinators will ensure that course objectives reflect current procedures, techniques, and standards of the overall aircraft inspection program. The coordinators will also be responsible for the accuracy of the technician training records.
7. Scheduling and types of courses will also be determined by the supervisor, with input from maintenance management.
8. The Training supervisor will oversee the assignment and placement of all Out-of-Kingdom training as requested by management.
9. Training is responsible for developing, maintaining, and updating the course curriculum, ensuring only the most current data is provided to their students.
10. The Chief Inspector will maintain a list of internal and contract maintenance personnel with their respective qualifications and a letter will be issued which details the authorizations granted. The letter will be on a company letterhead and controlled through a unique letter number.

7.2 TYPES OF TRAINING

7.2.1 General Maintenance Manual (GMM) Training

1. New employees must receive initial General Maintenance Manual training that covers the policies, procedures, and processes relevant to the duties and responsibilities that they will be assigned to perform.
2. Employees are expected to maintain current knowledge of the GMM, and the policies and procedures contained within by frequently consulting the manual during their work.
3. Recurrent GMM training will be conducted every two (2) years to cover significant changes to policies and/or procedures which require special emphasis.
4. GMM initial and recurrent training courses will cover at least the following:
    a. Published location of GMM (Sharek).
    b. Maintenance safety policies.
    c. Maintenance and inspection (performance) procedures, including RII, Major Repairs, Major Alterations, and RVSM.
    d. Parts and materials handling procedures, including life limited parts, time-controlled parts, removed parts, procured parts, cannibalized parts, and ESD sensitive materials.
    e. Tools and equipment procedures, including special tools, calibrated tools, ground support equipment, and company vehicles.
    f. Maintenance deferral procedures, including use of the MEL, CDL, and NEF to defer maintenance when necessary.
    g. Maintenance record procedures, including Logbooks, Work Forms, Task Cards, Checklists, GACA Form 8320-1, and aircraft release; and
    h. Identification and use of forms and tags.
    i. Recurrent GMM, RII, and RVSM training will be conducted every two (2) years.

7.2.2 Mechanic Basic Training

For details of mechanic developmental, basic, advanced, and recurrent training and competency assessment refer to the AMD Training Manual.

7.2.3 Engine Run-Up Training

To qualify for Engine Run-Up authorization, the following requirements must be met:

1. The technician must hold an A&P Certificate.
2. Successfully completed an engine run-up class for the specific aircraft type.
3. Recommendation from the Director of Maintenance; and
4. Be listed on the Engine Run-Up list posted in their work area.

7.2.4 Maintenance and Inspection Specialty Training

Specialty training consists of any type of training for specific aircraft, equipment, groups, and areas, such as aircraft maintenance type training, avionics / electrical training, RVSM training, or aircraft system troubleshooting training. As specified in this manual, certain maintenance and inspection personnel must have certain types of specialty training to hold certain qualifications (for example, aircraft type training is required for RII Inspectors).

7.2.5 On-The-Job Training

On-the-job training (OJT) is training performed by an instructor, supervisor, or other qualified individual who supervises the OJT work in accordance with GACAR Part 66, which states that:

"A certified mechanic… may not supervise the maintenance, preventive maintenance, or alteration of, or approve and return to service, any aircraft, appliance, or part thereof, for which he is rated unless he has satisfactorily performed the work concerned at an earlier date."

7.2.6 Equipment Training

1. All mechanics required to use specialized tooling or equipment (overhead hoists, forklifts, etc.) must have been first trained and, when required, licensed before operating the equipment.
2. New equipment that is complex or could present a significant hazard if improperly operated, must be brought to the attention to the Supervisor, ATT&S so that appropriate training can developed and provided.

7.2.7 Human Factors Training

All mechanics will be provided with at least eight hours of Human Factors training in every two-year period. Training may be via contact classes or accredited internet classes.

7.2.8 HAZCOM Training

All mechanics will be provided with initial Hazardous Communication (HAZCOM) training for familiarization with hazardous materials, labelling, and protection measures. Recurrent training is to be provided at least every two years.

7.2.9 Vision Exams for Borescope Inspectors

For optimal safety and accuracy, mechanics conducting borescope inspections must pass annual near-vision tests administered by certified doctors or ophthalmologists.

7.2.10 Training for Borescope Inspectors

1. Mechanics who will perform borescope inspections on aircraft (except for inspections of aircraft engines) must successfully complete documented classroom or documented On-the-Job training on the borescope equipment that will be used to perform the inspections, before performing and signing for those duties.
2. Mechanics who will perform borescope inspections on aircraft engines must be trained by the engine manufacturer on the engine type that will be inspected, before performing and signing for those duties.
3. Alternatively, a mechanic who will perform borescope inspections on aircraft engines (but will not train other mechanics on how to perform such inspections) may be trained by another mechanic who received

training by the engine manufacturer on the engine type that will be inspected. This must occur before the inspector performs and signs those duties.

7.2.11 Training for RII Inspectors

Mechanics who perform safety critical Required Inspection (RII) inspections must successfully complete initial and recurrent RII training and successfully complete technical training sufficient to meet the requirements specified in the Training Matrix.

7.2.12 Training for RVSM Inspectors

Mechanics who perform RVSM tasks and inspections must successfully complete initial and recurrent RVSM training and successfully complete technical training sufficient to meet the requirements specified in the Training Matrix.

7.3 TRAINING MATRIX

	Training Courses												
	Orientation	GMM	Safety	Human Factor	HAZCOM	RII Training GMM	RVSM Training GMM	Material Receiving	SUP	Dangerous Goods	Fleet Type Training	De-Icing Training	Hoist Training
Director of Maintenance	X	X	X	X	X	X							
Chief Inspector	X	X	X	X	X	X	X	X	X				
Foremen	X	X	X	X	X	X	X	X	X		X	X	X
Engineers	X	X	X	X	X								
Planners	X	X	X	X	X								
Inspectors	X	X	X	X	X	X	X	X	X		X	X	X
Receiving Inspector	X	X	X	X	X			X	X				
Mechanic	X	X	X	X	X	X	X	X	X		X	X	X
Materials Personnel	X	X	X	X	X			X	X	X			
Technical Librarian	X	X	X	X	X								
Tool Room Attendant	X	X	X	X	X			X					
Vendor QC Inspectors		X				X	X						
Vendor Mechanics		X				X	X						

8. CONTRACT MAINTENANCE PROVIDER QUALIFICATION, TRAINING AND OVERSIGHT

8.1 CONTRACT MAINTENANCE PROVIDER QUALIFICATION

NOTE: Contract Maintenance Provider Qualification should be performed by Chief Inspector, or his designee to qualify a maintenance provider prior to arranging the maintenance visit.

1. Ensure the following documentation has been received from the repair station performing the maintenance visit:
    d. Copy of current Repair Station certificate and Ops Specs
    e. Capability List
    f. Repair Station Manual and Quality Control Manual
    g. Inspector Rosters
    h. Licenses and Training records for proposed personnel that will receive RII, RVSM, and Airworthiness Release authorization.
2. Ensure the contract facility has the capability to weigh the aircraft, if required. Instructions are to be given on Mukamalah Aviation Company's mass and balance documentation with the facility receiving the latest revision to the aircraft's mass and balance computation.
3. Review and verify the contract facility's Parts Receiving Policy and Procedures to verify documentation standards meet or exceed GACA AC 021-02. Inform vendor of Cannibalized Parts and Parts Swapping procedures to determine acceptance of procedures.
4. Review the contract facility's tool control and calibration policy paying particular attention to calibration intervals.
5. Review the contract facility's training program.
6. If required, ensure the contract facility has RVSM trained and qualified personnel for all required RVSM related inspections, part changes and/or repairs.
7. If any RVSM related work is to be performed an "RVSM Service Facility Compliance Form" must be filled out by the facility and given to the RVSM representative or his designee. This form will be kept on file in the Planning Unit according to fleet type.
8. If directed by the DOM, perform an on-site audit of the maintenance provider.
9. If directed by the DOM, when vendor is found to be acceptable, advise him of the terms to be included in a maintenance agreement between the Company and the vendor. The Maintenance Agreement should identify the responsible parties (Mukamalah Aviation Company or Vendor) for the following:
    a. Maintenance Planning
    b. Aircraft Maintenance Documents
    c. Calibration Program
    d. ESDS Program

e. SUP Program

f. Quarantine Program

g. Training Program

h. AD Management

i. Maintenance Records

j. Engineering

k. Documentation Procedures

l. Tool Equivalency Program

m. Shelf-Life Program

n. SDR Program

o. Parts Scrapping Program

p. Parts and Materials Receiving Program

q. AIP Revisions

r. Required Inspection Item (RII) Program

10. In addition to the items above, any exceptions or deviations which are found to be acceptable to Mukamalah Aviation Company are to be identified in the agreement.

8.2 REQUIREMENTS FOR CONTRACTORS TRAINING

1. Mukamalah Aviation Company requires GMM, RII, and RVSM (as applicable) training for vendor personnel who will be performing maintenance or inspection of the aircraft regardless of whether or not they will have airworthiness release, RII, or RVSM authorization. This is to ensure that all personnel working on the aircraft are aware of Mukamalah Aviation Company policies and procedures. Instruction will include the following topics:

   a. GMM orientation

   b. Contract Maintenance Provider Training and Oversight as described.

   c. Mukamalah Aviation Company calibrated tool policy and tool

   d. Mukamalah Aviation Company documentation requirements. The training will include how to complete Mukamalah Aviation Company logbooks and aircraft inspection program checklists to include annotation of RII, RVSM, and airworthiness release.

   e. Signature/stamp policy.

   f. Emergency Equipment Expiration Markings

   g. Materials certificate requirements (GACA AC 021-02).

   h. RII policies and procedures. RII authority is granted to qualified personnel and the decisions of those persons granted the authority cannot be countermanded by anyone other than a Supervisor, Manager, or Director in that agency or Mukamalah Aviation Company's Chief Inspector.

i. RVSM policies and procedures.

j. Airworthiness release and Return to Service

k. Return to service before checking flight.

l. Responsibility for identifying major repairs and alterations by completing GACA Form 8320-1.

m. Advise the contract facility on any other Mukamalah Aviation Company GMM policy or procedure pertinent to the inspection being performed. The contract facility is to have a current copy of the Mukamalah Aviation Company GMM.

2. The above-mentioned training will be performed by the Training Unit and will cover all procedures that the agency will be using while in the service of Mukamalah Aviation Company.

3. GMM, RII, and RVSM (as applicable) training is to be provided to each contract maintenance provider's mechanics and inspectors prior to starting a maintenance visit.

4. Recurrent training for those individuals is to be done if a significant change occurs in the GMM if the contract maintenance provider will continue to provide services on a repetitive basis.

5. Additional mechanics or inspectors that have not been trained will need to receive training prior to performing work on the aircraft.

6. Once training has been completed, the trainer will send the attendance rosters to the Chief Inspector for review.

7. Once training has been reviewed, the Chief Inspector will prepare an authorization letter to the vendor's QA Manager (or equivalent) which summarizes the list of authorized persons and their limitations (as applicable). The letter will be for the specific aircraft registration number that is to be inspected.

8. The contract agency shall ensure a copy of the RII list, and the list of authorized persons is posted in their Planning office and at the work dock for quick reference.

8.3 AIRCRAFT MAINTENANCE VISIT MANAGEMENT AND OVERSIGHT

1. The information provided below serves as an outline of the roles of each unit within Mukamalah Aviation Company in the preparation, performance, and oversight of a maintenance check performed at a contract maintenance vendor.

2. The following is a set of top-level instructions intended as a guide for the Mukamalah Aviation Company teams involved in a contract maintenance event.

3. This chapter is not intended to be the only set of GMM instructions for the various units involved in the process but rather an assignment of responsibilities for ensuring each unit has performed its function as applicable.

8.3.1 Engineering

1. Serves as the overall project engineer for work scope development, execution of project, and day-to-day activity.

2. Thoroughly familiar with the existing contract/ Purchase Order.

3. Develops the work scope and have it approved and communicate with vendor for execution.

4. Communicates with all involved stakeholders the event for each unit to initiate its own process in preparation for the visit.
5. Coordinates with flight operations for the delivery flight schedule and facilitate other requirements as needed.
6. Coordinates induction and re-delivery schedule between vendor and Mukamalah.
7. Ensures continued coordination between Materials unit and contractor/vendor.
8. Prior to visit, coordinates with the assigned on-site Mukamalah maintenance representative (if applicable) to ensure familiarity with the scope of work, material requirements, approval requirements, and responsibilities.
9. During visit, coordinates with the on-site maintenance representative to:
    n. Ensure the work scope is being executed correctly.
    o. Review and approve (as necessary) material cost and/or man-hour charges.
10. Communicates weekly progress report internally.
11. Performs invoice audit with the vendor in preparation to submit for payment.

8.3.2 Planning

1. Responsible for generating and providing to Engineering a list of due items (including planned, free running, deferrals, AD's, etc…) for workscope preparation.
2. Performs a periodic review of any AD driven MTD issued while aircraft is at the vendor and notify the Engineering to update the work scope.
3. Provides additional aircraft records to vendor as requested.
4. Performs progressive review of completed paperwork and update aircraft records (Log Book/ tracking system) as applicable.
5. Prior to aircraft return to service, ensures all paperwork has been reviewed and accepted by Chief Inspector and the tracking system is being updated.
6. Provides aircraft documents needed to be onboard prior to departure to vendor.
7. Reviews hard copy records when received by Planning/Engineering and QA. The review must be completed by all parties within 30 days of receipt.
8. Files the permanent records system by aircraft tail number

8.3.3 Quality Assurance and Quality Control

1. Performs a pre-induction evaluation of the vendor's repair station by reviewing the following:
    a. Capability list.
    b. Repair Station Certificate and Operations Specifications. (EASA, FAA, GACA as applicable)
    c. Repair Station Manual and Quality Control Manual
    d. Inspector Rosters

2. Based on work scope complexity and review of the items in step a. above, an on-site audit of the vendor may be performed as directed by the DOM. Refer to GMM 08-02 for details.
3. Verifies that required training has been provided to the vendor's mechanics and inspectors and that authorizations have been issued.
4. If requested by the DOM, perform on-site inspections at the vendor facility during the maintenance event.
5. Performs paperwork audit to ensure completeness and correctness.
6. Prior to aircraft return to service at the end of a vendor inspection, Quality Assurance is to have reviewed the following items supplied to them by the vendor in a digital format:
    a. All check and routine/non-routine tallies.
    b. All routine and non-routine work orders.
    c. All task cards and checklists (as applicable).
    d. All MTDs (ADs, SBs, etc.).
7. QA findings will be recorded communicated to the Planner and Engineer assigned to monitor the aircraft visit. The Planner will be responsible for ensuring all audit findings have been communicated to the vendor and resolved accordingly.

8.3.4 Maintenance

NOTE: Assignment of a Maintenance or Chief Inspector representative to be on-site with the aircraft during the visit is at the discretion of the Director of Maintenance.

1. Representative Requirements
    a. Must be GACAR Part 66 certificated.
    b. Must be returned to service authorized on the company aircraft that he will represent.
    c. Familiar and knowledgeable about applicable company manuals and their latest revisions.
    d. Knowledgeable of Mukamalah Aviation Company aircraft inspection programs to include the corrosion prevention and control program.
    e. Knowledge of the work scope requirements.
    f. Must have maintenance experience on type aircraft being inspected.
    g. Must be knowledgeable with GACAR 43, 91 and 121.
2. Responsibilities
    h. Delivers required documents to the maintenance location as provided by Planning/Engineering. This could include an aircraft logbook, engine/APU logbooks, Weight and Balance record, special task cards, etc. based on work scope.
    i. Monitors and reports daily all completed routine and non-routine work orders, task cards, MTDs, etc., to the Planning Unit for tracking system update.
    j. Monitors and reports daily all work arising to the Mukamalah Aviation Company Planning Unit, Engineering, and supervision.

k. Approves manpower and material charges as authorized by the project engineer.

l. Ensures that all maintenance performed on the airframe, engines and their related components is performed in accordance with current aircraft inspection program, company policies and procedures. This will be accomplished by:

vii. Checking that the contract agency posted a copy of the RII list from GMM 06-03-03 in their Planning office and at the work dock for quick reference by personnel.

viii. Continuous surveillance of work-in-process on the aircraft or in the support shops for removed components.

ix. Auditing of all maintenance package documents to include, but not limited to, routine task cards, non-routines, MTDs, parts and parts documentation.

x. Auditing of work-in-process in all areas, with attention to critical areas (i.e., flight control rigging), to assure adherence to correct technical data, use of proper tools, qualified personnel, equipment calibration and all maintenance activities properly documented with accurate references.

xi. Deficiencies identified during the on-going surveillance listed above will be brought to the attention of the contract vendor management and Mukamalah Aviation Company Director of Maintenance for resolution.

m. Performs a final post dock, walk around inspection of the interior and exterior of the aircraft prior to release. Pays attention to quality of workmanship or lack of attention to detail by the contract vendor maintenance personnel.

n. Ensures compliance with the mass and balance, if required. If alterations have been performed, ensure an equipment supplement has been provided (as applicable).

o. Responsible for ensuring that check flight requirements are complied with, if required.

3. Contracting

a. Ensures contract is ratified with vendor for the work to be performed.

b. Creates Purchase Orders (P.O.).

c. Ensures an audit of all charges is complete prior to payment.

d. Processes final invoice in preparation for review and payment.

4. Materials Support

a. Ensure all planned materials are prepared and ready before aircraft departure.

b. Ensures materials shipments are arranged and delivered in a timely manner.

c. Handles dismantled parts for out of Kingdom repairs.

d. Final Aircraft Release (Airworthiness Release)

5. The following is to be performed by the designated Company personnel assigned to the contract maintenance visit.

a. Review the following documents for accuracy and completeness:

xii. All check and routine/non-routine tallies.

xiii. All routine and non-routine work orders.

xiv. All task cards.

xv. All MTDs (ADs, SBs, etc.).

xvi. All parts and material for original and legal documentation.

xvii. Mass and Balance computations are correct and properly documented.

xviii. AFM supplements related to any alterations/modifications are provided.

xix. Check total work package for completeness.

xx. Verify with Mukamalah Aviation Company Quality Assurance that the documentation review is satisfactory and that the aircraft can be released.

b. Ensure the aircraft interior is in an approved configuration.

c. Ensure the mass and balance computation (if revised) has been updated, configurations are within the permitted CG envelope (reference the applicable Type Certificate Data Sheet), and a copy has been provided to the flight crew.

d. Ensure proper airworthiness release statement of aircraft return to service with inspection program revision number and date. The repair station's work order number is to be included.

e. Ensure the original work order documentation is courier shipped separately by the vendor to the Planning Unit. The original documentation shall not be placed on-board the aircraft.

9. AUDIT PROGRAM

9.1 AUDIT POLICY

1. Mukamalah Aviation's robust quality management system establishes a framework for comprehensive audits, encompassing both management systems and operational/maintenance functions. These audits serve a critical purpose, ensuring:

    f. Strict adherence to relevant regulations and Mukamalah Aviation's own established standards.

    g. Alignment with operational needs, guaranteeing activities fulfill their intended purpose.

    h. Early identification of areas requiring improvement, enabling proactive problem-solving.

    i. Proactive hazard identification, minimizing potential operational risks.

    j. Thorough assessment of the effectiveness of implemented safety risk controls.

2. To achieve these objectives, employs a diverse range of audit types, as detailed below. Additionally, ongoing monitoring processes are implemented whenever necessary to provide deeper insights into specific areas.

    For Audit Program, refer to Quality Management Manual (QMM) Chapter 3.

10. RECORDS AND DOCUMENTATION

10.1 TECHNICAL DOCUMENTATION

GACAR 121.699, 121.703 121.1561

10.1.1 Policy

1. The Maintenance Planning Group's functionality is to initiate scheduled (routine) and unscheduled (non-routine) maintenance, track in-service or life limited aircraft components, maintain aircraft records per GACA requirements and liaise with the Company Flight Operations and ground support personnel regarding aircraft operations.
2. They coordinate all maintenance with the applicable mechanics or repair facilities and all material requirements through the repair facilities. They support out-of-Kingdom aircraft maintenance visits to ensure proper documentation and records are complied with and provide reports as required by management personnel. All records will be kept and maintained as follows:
    a. The Official Maintenance Record shall consist of the following documents:
        i. The aircraft flight logbook.
        ii. The aircraft maintenance logbook.
        iii. Inspection record.
        iv. Record of major repairs/alterations.
        v. Repair station work orders.
        vi. Status of life limited parts.
        vii. Status of overhaul category components.
        viii. FAA, GACA, and state of design Airworthiness Directive compliance records.
        ix. Manufacturer's service bulletin compliance record.
        x. Aircraft component records.
        xi. Service parts tags, maintenance release documentation, and receiving documents.
        xii. Mass and Balance Record.
    b. The Maintenance Planning Group will be responsible for filing aircraft maintenance records.
    c. Aircraft maintenance records will be kept in separate file cabinets based on aircraft registration number.
    d. One file cabinet will be used for spare aircraft engines and APU's.
    e. All aircraft files will have the following format:
        i. Maintenance Logbook (or system generated version) filed by ATA chapter.
        ii. Completed MTD compliance forms. One for Airworthiness Directives and another for Service Bulletins.
        iii. The latest completed scheduled inspection. One folder for each inspection type.

iv. Component change records.

v. Installed engine and APU logbooks and associated performance check sheets.

vi. Copies of completed logbook pages.

vii. Installed landing gear overhaul records.

viii. Original copies of Major Repairs and Alterations Forms (GACA Form 8320-1).

ix. Latest mass and balance record. (Old copies will be kept in archives).

f. Aircraft permanent files will contain:

i. Completed flight logbooks.

ii. Completed maintenance logbooks.

iii. Copies of old Mass and Balance records.

iv. Latest series of completed scheduled inspections (example: A-1 to A-20).

v. Service Bulletin and Airworthiness Directive compliance records.

g. Engine records will be kept permanently with the engine's logbook which is identified by the engine serial number.

NOTE: Only authorized personnel will be allowed access to aircraft maintenance records.

h. Mukamalah Aviation Company may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer per GACAR 91.461.

i. The Technical Librarian is responsible for the main library and all other library locations.

j. The Technical Librarian will update all publications and maintain a Master Document List of all technical publications to include their location.

10.1.2 The Aircraft Flight and Maintenance Logbooks

1. The aircraft maintenance logbook is the primary maintenance record. Scheduled and unscheduled maintenance performed on the Company aircraft will require a logbook entry unless it is performed during maintenance activities by a repair station as part of the work scope.
2. In that case, maintenance can be recorded on repair station documentation as part of the work order, or it may be computer generated by the Company and issued to the repair station. In either case, the entry shall include a brief description of the work performed, reference to acceptable data, the date of completion, and signature and certificate number of the person who performed the work.
3. Examples of routine and non-routine maintenance that will require entries in the aircraft maintenance logbook are as follows (unless part of a repair station work order on their documentation):

a. Clearing pilot squawks/mechanic write ups.

b. Engine component time changes.

c. Engine components change for cause (malfunction).

d. System component functional test.

e. Airworthiness Directive compliance.

f. Service Bulletin compliance.

g. Compliance with GACA Aviation Regulations.

h. Major or minor repairs or alterations.

i. Inspections performed.

NOTE: No corrective action sign-offs are to be altered by any person other than the person that originally performed the work and he must initial any change.

4. The Aircraft Flight Logbook

   a. The aircraft flight log is the primary method of recording and totaling aircraft time in service, as well as other parameters required for tracking of life-limited components such as:

      i. Number of landings

      ii. APU Hours (where applicable)

      iii. APU Cycles (where applicable)

5. Monitoring of Aircraft Hours and Cycles

   a. Mechanics will retrieve all aircraft logbooks at the end of each day from the aircraft.

   b. Mechanics will review the aircraft logbooks for the following:

      i. Flight leg data is entered correctly from flight crews.

      ii. Aircraft total time and cycles from previous day are accurate.

      iii. The log page serial number is in sequence with the latest processed log page.

      iv. The terminating check and oil added columns have been filled in by the mechanic.

      v. Aircraft APU hours and cycles (where applicable) are recorded and consistent with the previous day's recorded numbers.

   c. Mechanics will compute and enter the following data from the completed log page:

      i. The days total flying hours and landings based on flight leg data provided by flight crews.

      ii. Current total time and landings.

   d. Mechanics will then ensure that the CMTSs are updated with the current hours, cycles and any other required inputs.

   e. Mechanics will remove the yellow copy of the log pages and route them to Planning for cross-checking and filing.

   f. The logbooks will be returned to the aircraft when they are released for service.

   g. Mechanics will be responsible for replenishing logbook pages as the need arises and the transfer of the data from the old to the new logbook pages.

   h. For aircraft operating away-from-base, steps 1 thru 6 above are to be carried out by the Mechanic accompanying the aircraft. Additionally, aircraft flight log pages are to be faxed or emailed daily to the mechanic office at the aircraft's base. If this is not possible, the Mechanic will call the office

at the aircraft's base to verbally relay updates to hours, landings, etc. so that the computerized maintenance tracking system (CMTS) can be updated.

10.1.3 Inspection Records

1. The aircraft inspection record shall consist of (1) inspection work procedure sheet and (2) non-routine work forms.
2. Mukamalah prepared Preflight and Daily Inspection work check lists for all aircraft.
3. Any repair station records if work is performed by a GACA Certificated Repair Station.
4. Other aircraft types – Inspection checklists and cards as required by the inspection programs recommended by the manufacturers.

10.1.4 Record of Major Repairs/Alterations

1. When a Major Repair or Alteration is performed on an airframe, engine or appliance, a GACA Form 8320-1 shall be completed. The form is a permanent record and shall be maintained on file along with any drawings, sketches or other technical data that may be required to support the method of repair or alteration.
2. In addition to the GACA Form 8320-1, an entry shall be made in the appropriate logbook. The entry shall include a brief description of the work, the date the work was accomplished, the name and certificate number of the person who performed the work and a note at the end of the corrective action block that a GACA Form 8320-1 was issued for the item.
3. When installing an engine, propeller or an appliance that has undergone a major repair/alteration with a GACA Form 8320-1 attached, it will be the responsibility of the mechanic installing the part on the aircraft and the inspector inspecting the installation to ensure that the duplicate copy of the GACA Form 8320-1 is completed and sent to the GACA within 48 hours and the original completed and send to the Planning Group for historical records keeping.

10.1.5 Status of Life Limited Parts

The status of life limited parts must be kept current and reviewed frequently to preclude the possibility of exceeding established maximum operating time or cycle limits. Electronic data processing (EDP) and/or cardex systems shall be used to track life limited parts.

10.1.6 Status of Overhaul Category Components

The status of overhaul category components must be kept current for the same reason as stated above. EDP and/or cardex systems shall be used to track and status overhaul category items.

10.1.7 Airworthiness Directive (AD Note) Compliance Record

1. Airworthiness Directive (AD) record keeping must meet the GACA regulatory requirements. This includes records for all applicable AD's issued by GACA, FAA, and the state of design of the aircraft, engine, or propellers that are part of the aircraft type. The Airworthiness Directive compliance record shall consist of:
    a. An appropriate entry in the aircraft or component logbook, and
    b. A current list of outstanding AD notes for each aircraft or component type, i.e. aircraft, engine, propeller, etc.

2. The AD compliance record shall include the A.D. number and revision number and date, method of compliance, aircraft/component time, date of compliance, the signature and certificate number of the person who performed the work. If the A.D. requires recurring action, the time and date when the next action is required shall also be recorded.
3. A list of applicable A.D. notes shall be maintained for each aircraft, engine and appliance type. The list will include the A.D. number and revision number and date, service bulletin or modification reference, if applicable, the date/time of last compliance and if recurring, the date/time the next action is due.
4. The logbook entry shall include the A.D. number and revision number and date, a brief description of the work, date of compliance, operating time and cycles, and the name and certificate number of the person who performed the work.

10.1.8 Service Bulletin Compliance Record

1. The incorporation of a service bulletin requires an entry in the aircraft or component logbook.
2. The logbook entry shall include the service bulletin number, revision number and date, a brief description of the work, date of compliance, operating time and cycles, the name and certificate number of the person who performed the work.

10.1.9 Component Logbook

The aircraft major component logbook is a permanent historical record and must be maintained throughout the life of the component. All maintenance, i.e. installations, removals, service bulletin/AD note compliance, overhauls, repairs, etc. shall be recorded in the logbook.

10.1.10 Serviceable Parts Tags, Invoices and Receiving Documents

Serviceable parts tags, invoices or other documents that attest to the serviceability of overhauled, repaired or new parts shall be filed with the aircraft or component records. These documents are classified as semi-permanent and will be maintained on file until such time as the part is replaced and a new document filed.

10.1.11 Mass and Balance Report

1. A current mass and balance (empty weight) report must be maintained in the aircraft flight manual or mass and balance manual located in the control cabin and on file with the aircraft history records.
2. Each time equipment is added or removed that would result in significant changes to the empty mass or balance, a new mass and balance report must be prepared or reviewed by the Chief Inspector.
3. The original copy of this update will be given to the fleet planner of the aircraft affected for record keeping with copies going to the fleet captain and all other concerned personnel.

10.1.12 Record Retention

1. To comply with GACAR §§ 121.1545 and 121.1565, Technical Records must retain essential documents until the aircraft is retired. These documents demonstrate the aircraft meets airworthiness requirements for release to service.
2. The following records are required to be retained and transferred with the aircraft at the time the aircraft is sold, and a copy is to be retained for a minimum of 90 days after the aircraft sale has closed:
    a. The total time in-service of the airframe, each engine and appliance.
    b. The status life-limited parts of each airframe, engine, and appliance.

c. The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.

d. The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

e. The status of applicable Airworthiness Directives (AD) including, for each, the method of compliance, the AD number, and revision date. If the AD involves recurring action, the time and date when the next action is required.

f. Original Copies of GACA Form 8320-1 for each major repair or alteration to the airframe and currently installed engines and appliances.

3. A copy of the records identified in Step 1 above is to be retained for a minimum of 90 days after the aircraft sale has closed or the aircraft has been permanently withdrawn from service. After the 90-day period has expired, the copies may be forwarded to the new owner or destroyed if the new owner does not require them.

4. All other records specified in this section shall be retained until the work is repeated or superseded by other work and for at a minimum of at least one year after the work is performed except for altimeter system and altitude reporting equipment tests and inspections and ATC transponder test and inspections which must be retained until the work is repeated or for a period of two years after the work is performed.

5. Specific Documents to Retain:

   a. Non-Routine Cards: Retained indefinitely.

   b. Aircraft Technical Log (ATL) and Aircraft Configuration Log (ACL):

      i. White and Pink copies: Retained indefinitely.

      ii. Yellow copy: Retained for at least Retained indefinitely.

   c. Routine, airworthiness compliance, component, and all other required documents: Follow the specific retention guidelines outlined for each document type.

6. Tracking Components and Inspections:

   a. Hourly Controlled: Tracked by the total time the aircraft has been in operation.

   b. Cycle Controlled: Tracked by the number of takeoffs and landings the aircraft has completed.

   c. Calendar Due Date: Each component and inspection have its own individual due date based on various factors:

      i. Calendar life limit: The maximum time a component can be used before needing replacement, measured from its manufacturing date.

      ii. Calendar time limit between repetitive inspections: Some inspections require regular intervals, measured in calendar time (e.g., every 6 months).

10.2 TECHNICAL LIBRARY AND DOCUMENTS

The Technical Library is a function of the Mukamalah Aviation Company Repair Station (Dammam, Ras Tanura, and Tanajib). A detailed description of the Technical Library can be found in the Mukamalah Aviation Repair Station Quality Control Manual Section 4.

10.3 ONBOARD DOCUMENTS

1. In accordance with the regulations of the General Authority of Civil Aviation (GACA), and Mukamalah Aviation Company policy, the following documents must be onboard the aircraft in paper (when required) or digital format on the flight crew's electronic tablet device:

    a. (PAPER) The original (or true copy) Certificate of Airworthiness must be displayed at the cabin or cockpit entrance. Photocopies or fax copies shall not be used to replace a missing Certificate of Airworthiness. In the event a Certificate of Airworthiness is lost, the aircraft may not be flown other than by a ferry permit.

    b. (PAPER) The original (or true copy) Aircraft Registration must be displayed on the cockpit door or around the entrance. Photocopies shall not be used to replace a missing Aircraft Registration.

    c. If lost, destroyed or mutilated, the aircraft registered owner's representative must be notified immediately to obtain a replacement certificate.

    d. To enable the aircraft to continue to operate, a Temporary Certificate of Registration can be obtained by fax from the FAA Aircraft Registration Branch (for US registered aircraft) or GACA Aircraft Registration Office.

    e. (PAPER) A current GACA Aircraft Radio Station License should be displayed in or around the cockpit door. All US registered aircraft are listed under an FCC fleet license. The FCC fleet Radio Station Licenses are good for 10 years.

    f. (PAPER) GACA Operations Specifications (OpsSpecs). For aircraft that are RVSM and have special NAV certification, the GACA has issued an OpsSpecs that include these approvals along with the MEL approval.

    g. (PAPER) A current aircraft Certificate of Insurance Policy. The Certificate of Insurance is issued per aircraft yearly.

    h. (PAPER) A true copy of the GACA Operating Certificate.

    i. (DIGITAL) A current copy of the Flight Operations Manual (FOM) and General Maintenance Manual (GMM) on the flight crew's electronic tablet.

2. If any of the above documents are missing or out-of-date notify the fleet planner for the aircraft involved.

10.4 REGULATORY REPORTS

10.4.1 NTSB and GACA AIB Required Notifications and Reports

10.4.1.1 General

1. US National Transportation Safety Board (NTSB) regulations are applicable to Mukamalah Aviation Company's US registered aircraft fleet. The GACA Aircraft Investigation Bureau (AIB) is applicable to all aircraft operated by Mukamalah Aviation.
2. Per NTSB regulations and Mukamalah Aviation policy, the company will provide notifications and reports upon the occurrence of certain events.
3. This policy applies to US registered aircraft that are operated by the company, whether owned, leased, borrowed, or loaned.
4. The Chief Pilot, Airplane Aircrew Division; Chief Pilot, Helicopter Aircrew Division; the Safety Pilots; and the Director of Maintenance will be responsible for notifying Chief Inspector of the occurrence of any incident or accident that could be related to maintenance, that he may not already be aware of.
5. Events that are determined to not be related to maintenance will be processed by the Safety Pilots' office and do not usually require further involvement.
6. The Chief Inspector will ensure that events that are (or could be) related to maintenance are reviewed in cooperation with the Safety Pilots' office to determine whether an NTSB notification or report is needed.
7. For any maintenance related event that is found to require an NTSB notification or report, the Chief Inspector will inform the Safety Pilots' office and the Accountable Executive.
8. For any event requiring an NTSB or AIB notification or report, the Accountable Executive will ensure the event notification or report is completed by the Safety Pilots' office.
9. Event notifications and reports will be submitted to the nearest NTSB field office or by contacting GACA and AIB directly.

Currently, the nearest NTSB field office is located in Ashburn, Virginia, USA; phone: +1 (571) 223-3930.

10.4.1.2 Notifications

1. When notification is required, the Accountable Executive will ensure the company Safety Pilots' office immediately contacts NTSB via the most expeditious means available (phone, email, fax, etc.):
2. Notifications will be given with the immediately known information. Notifications will not be delayed pending the arrival of unknown information.
3. If an NTSB report is required later, any additional relevant information (that arose since the time of immediate notification) will be provided in that report.
4. Events that require NTSB notification are:
    a. Aircraft accident.
    b. Occurrence of any of the following listed incidents:
        i. Flight control system malfunction or failure.

ii. Inability of any required flight crewmember to perform normal flight duties as a result of injury or illness.

iii. Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes.

iv. In-flight fire.

v. Aircraft collide in flight.

vi. Damage to property, other than the aircraft, estimated to exceed $25,000 for repair (including materials and labor) or fair market value in the event of total loss, whichever is less.

vii. In-flight failure of electrical systems which requires the sustained use of an emergency bus powered by a back-up source such as a battery, auxiliary power unit, or air-driven generator to retain flight control or essential instruments.

viii. In-flight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces.

ix. Sustained loss of the power or thrust produced by two or more engines.

x. An evacuation of an aircraft in which an emergency egress system is utilized; or

xi. An aircraft is overdue and is believed to have been involved in an accident.

5. Information to be given in an NTSB notification, if available:

a. Aircraft type.

b. Aircraft nationality.

c. Aircraft registration marks.

d. Name of aircraft owner.

e. Name of aircraft operator.

f. Name of the pilot-in-command.

g. Date the event occurred.

h. Time of day that the event occurred.

i. Last point of departure.

j. Point of intended landing.

k. Position of the aircraft with reference to some easily defined geographical point.

l. Number of persons aboard.

m. Number of persons seriously injured, if any.

n. Number of persons killed, if any.

o. Nature of the incident or accident.

p. Weather conditions at the time of the event, if relevant.

q. The type and extent of any damage to the aircraft.

r. Description of any dangerous articles carried onboard (ie: explosives, radioactive materials).

10.4.1.3 Document Retention and Disposal

1. For any event (aircraft accident or incident) requiring an NTSB notification or report, the company will not dispose of any records, reports, internal documents, and memoranda dealing with the event without first receiving approval from NTSB.

   The company will not normally seek to dispose of such documents since Company practices and policies generally encourage or require the keeping of all such documents for historical purposes.

2. If it becomes necessary to dispose of any such documents, the owner of the documents will request the Accountable Executive's concurrence for the company to process a request for NTSB's approval to dispose of them.

3. Upon the Accountable Executive's concurrence, the Safety Pilots' office will process any requests to NTSB for disposal of documents.

10.4.1.4 Reports

1. An NTSB report will be filed:

   a. Within 10 days after an aircraft accident.

   b. After 7 days if an overdue aircraft is still missing; or

   c. For an incident which required immediate notification, only if requested by NTSB (and within the timeframe specified by the NTSB request).

2. NTSB reports will be filed on NTSB Form 6120.1/2

11.SAFETY AND QUALITY OVERSIGHT

11.1 GENERAL

1. This chapter describes the oversight system of checks and balances that is in place to ensure that the maintenance organization provides airworthy (safe and legal) aircraft for the department to fly.
2. This chapter contains sections describing the policies, procedures, and processes for oversight of the maintenance organization by the company's Safety function and the Quality Assurance function.
3. With regards to the Company's internal safety controls, the Aviation Department is also overseen by the Mukamalah Aviation Company's Loss Prevention Department.
4. The Aviation Department is also subject to government oversight. Due to the company's decision to operate a mixed fleet of United States and Saudi Arabia registered aircraft under a GACAR 121 Operating Certificate, the Saudi Arabia General Authority for Civil Aviation is primarily responsible for government oversight of the airworthiness of the company's fleet and oversight of the maintenance organization per ICAO Article 83 bis.
5. If a visit is made to a Mukamalah Aviation Company facility or aircraft by a GACA inspector, per GACAR 119.107, Mukamalah Aviation Company is obligated and responsible for granting full and unrestricted access to the facility or aircraft that GACA desires to inspect and provide any required documentation or records that the GACA inspectors request.

11.2 SAFETY

11.2.1 General

1. This section describes the safety policies, procedures, and processes that are used by the maintenance organization to ensure safety in the workplace, on the ground, and in the air.
2. This section contains sub-sections that cover a wide range of safety topics from aircraft cleaning, through to various ground handling operations and engine run-up.
3. Other sub-sections cover safety during various maintenance operations such as fuel tank entry, painting, and shop operations.
4. There is also a sub-section containing an aircraft safety checklist and a sub-section covering vehicle safety. Several other sub-sections cover subjects such as injury prevention, personnel responsibility, safety training, security, and smoking.
5. Finally, there is a sub-section describing the safety suggestion program.
6. Mukamalah Aviation ensures that Safety Line Maintenance is achieved by following procedures:
    a. Plan: Identify tasks, gather data, ensure qualified personnel, assess risks, review procedures, and brief team.
    b. Execute: Use work permits, tagging, FOD prevention, proper material handling, quality control, communication, and documentation.
    c. Verify: Conduct final inspections, test runs (if required), obtain airworthiness release, and complete reports.
    d. Enhance Safety: Promote safety culture, manage fatigue, plan for emergencies, and continuously improve procedures.

11.2.2 Aircraft Bird Strike Cleaning

Due to the concern of contacting Avian Influenza while cleaning the exterior aircraft surfaces after a bird strike, the following procedures must be followed.

1. Wear disposable gloves, disposable respirator, and eye protection.
2. If body contact is unavoidable while cleaning the aircraft, wear a disposable coverall.
3. Do not use air or water under pressure to clean the surface of the aircraft that was hit by the bird.
4. Remove the bird's remains and put them in a plastic bag.
5. Do not touch your face, eyes, nose, etc. with your gloves.
6. Spray the contaminated surface with an approved cleaner/disinfectant and wipe clean. (Use Eco Tru 1453, Calla 7127, Ogee 350, or equivalent. NOTE: Do not use a product named Virkon (because it corrodes aluminum).
7. If necessary, repeat the procedure in step F. until the surface is clean.
8. Dispose of the wipes in the plastic bag containing the bird remains.

9. Spray the affected area again with cleaner/disinfectant and leave in place (this step is allowed only if the cleaning product used can be left on the surface per the supplier's instructions)
10. Remove the disposable gloves, disposable respirator, and the disposable coverall (if used) and put them into the plastic bag containing the bird remains and the contaminated wipes.
11. Seal or tie closed the plastic bag which contains the bird remains, the contaminated wipes, the gloves, the disposable respirator, eye protection, and the disposable coveralls. Put the sealed or tied plastic bag inside of a second plastic bag. The seal of the tie closed the second plastic bag.
12. Dispose of the plastic bag as normal garbage.
13. Wash your hands thoroughly with soap and water.

11.2.3 Aircraft Engine Run-Up

11.2.3.1 General

1. Engine run-up presents hazards to both aircraft and personnel. The fire hazard is particularly acute because of the possibility of igniting fuel vapors by exhaust flames. Rotating propellers are dangerous to personnel and can cause loss of life and equipment damage if prescribed safety precautions are neglected. The following must be observed:
    a. Only properly trained and qualified A&P mechanics may run aircraft engines. This training must be aircraft specific, and the mechanic can only operate the engines on the aircraft trained on.
    b. All engine runs above idle require the aircraft to be taxied or towed to an approved run-up area.
    c. Mukamalah mechanics are not allowed to taxi aircraft. Aircraft taxiing for maintenance will require a qualified pilot.
    d. Aircraft gear pins should always be installed during maintenance engine run-ups.
    e. The applicable engine run check lists must be followed before starting, during starting, during the run-up, during shut-down, and after shut-down.
2. Engine run personnel and all persons who will take part in engine run activities are to abide by the following safety precautions:
    a. Do not perform an engine run unless it is absolutely necessary or required by the aircraft maintenance manual.
    b. Keep the engine run duration to the minimum required to perform the required activity.
    c. Do not operate the engine at high power unless required by the maintenance manual. When a high-power run is necessary, keep operation to a minimum.
    d. Movement of throttle levers to increase or decrease engine speed must be smooth and slow. Unless maintenance manual instructions are different, controlled movement must take at least 30 seconds.
    e. When performing more than one task that requires engine operation, perform all tasks during the same engine run.
    f. Precautions are necessary to make sure personnel who are at work near the aircraft during ground engine runs knows the areas that are dangerous.
    g. Make sure that you use a headset during engine start.

WARNING: ALL PERSONS MUST STAY OUT OF THE DANGEROUS AREAS THAT ARE FORWARD AND TO THE SIDES OF THE INLET COWL. ALL PERSONS MUST STAY AWAY FROM THE ENGINE SAFETY BARRIER WHEN THE ENGINE IS IN OPERATION. DURING ENGINE OPERATION, THERE IS SUFFICIENT SUCTION AT THE INLET COWL TO PULL A PERSON INTO THE ENGINE INLET. A FATAL INJURY COULD OCCUR.

CAUTION: THE SUCTION NEAR THE INLET COWL CAN PULL HATS, GLASSES, LOOSE CLOTHING AND OTHER UNWANTED MATERIALS FROM YOUR POCKETS. ALL LOOSE

OBJECTS MUST BE REMOVED BEFORE YOU WORK AROUND THE ENGINE. DAMAGE TO EQUIPMENT COULD OCCUR.

3. Obey the hazard areas near the air inlet that have dangerous air conditions:
    a. Inlet hazard areas are shown on the left and right fan cowl panels with stripes and placards. These placards include: red warning stripes, no entry placards, above idle hazard area placards, and warning placards.
    b. Persons near the power plant during engine operation must know of the hazard areas that are aft of the inlet cowl tip.
        i. This hazard area extends completely around the outer diameter and to the forward end of the engine inlet.
        ii. After the engine is stopped, make sure you see the fan is stopped before you go near the air inlet.
    c. Make sure that all persons that do not know of the hazard areas around the air inlet do not go in these areas.
4. Jet Velocity Hazards
    a. The engine exhaust and fan discharge air move very fast at idle and much more at takeoff power. For many aircraft, the exhaust speed can exceed 250 miles per hour.
    b. The air blown behind the engine can move loose stones and other material a long distance.
        i. The airplane must be parked at an area where injury to persons or damage to equipment or other airplanes can be prevented.
        ii. If a high power run is to be conducted, ensure no other aircraft or vehicles is parked behind the running aircraft.
        iii. Use a blast fence to deflect the thrust if the engine or engines are operated without sufficient space to decrease the fan discharge and engine exhaust velocity to zero.
    c. Consult the applicable aircraft maintenance manual for the minimum idle power, breakaway power, and takeoff power hazard areas.
5. Jet Exhaust Temperature
    a. The engine exhaust temperature is very hot at idle and takeoff power.
    b. High temperature exhaust can be found a long distance behind the engine.
    c. Exhaust temperatures are sufficient to damage bituminous (asphalt) pavement. Concrete is the recommended material for the area behind the engines.
6. Before Engine Operation
    a. Make sure there are no tools, unwanted materials or objects in the air inlet.
    b. Make sure the area 40 feet to each side and forward of the power plant is clean.
    c. Make sure the ground which is forward of the power plant is solid.

d. Make sure the suction of the engine will not pull unwanted material from the ground into the engine.

e. Make sure to use a headset for engine start.

f. Make contact with the terminal area (or control tower if required) to notify of engine run activity.

11.2.3.2 Engine Run WARNINGS

1. While performing maintenance, do the deactivation procedure to prevent the accidental operation of the thrust reverser.
2. Retract the leading-edge flaps and slats and do their deactivation procedure before you open a thrust reverser cowl on an engine.
3. Do not open or close the fan cowl panel while the engine is operating because the forward latches are in the hazard area zone of the engine inlet. Persons can be pulled into the engine.
4. Do not open the thrust reverser in high winds, sudden wind conditions, or if the wind velocity is greater than 40 knots. If you do not obey these instructions, injury to persons and damage to equipment can occur.
5. Do not try to close the fan cowls in winds more than 40 knots. The fan cowl panels can stay open in winds up to 65 knots. In winds higher than 65 knots, the hold open rods can fail and cause injury to persons and damage to the equipment.
6. Do not go or put a part of your body between the engine and the thrust reverser unless the opening actuator safety lock is installed.

11.2.3.3 Engine Run CAUTIONS:

1. Make sure the airplane gross weight, the second engine N1 speed limit and ground/tire surface requirements are correct to prevent an airplane skid during engine operation at high power. The skid or movement can cause damage to airplane or equipment.
2. Do not operate airplane hydraulic systems unless the fuel quantity is more than 1675 lbs. (760kg.) in each main tank. If you operate the engine without sufficient fuel to cover the HYD heat exchangers, you can damage the airplane hydraulic systems.
3. Make sure the electrical power is on before you supply the pneumatic power and remove the pneumatic power before you remove the electrical power. Damage to the air conditioning system could occur.
4. Keep the pressure on the A and B HYD SYS. This will make sure that you have full control of the nose gear steering and the main wheel brakes.
5. Monitor fuel flow and EGT for signs that fuel flow decreases too slowly or EGT increases rapidly. This is an indication of an internal engine fire, a tailpipe fire, or the engine fuel valve is still open.
6. Do not stop the engine without an additional source of pneumatic power to motor the engine. If an internal engine fire occurs, you must dry motor the engine.
7. Do not use a fire extinguishing agent to stop an internal engine fire unless the engine dry motor procedure fails to control the fire. If you use fire extinguishing agent, engine removal is mandatory.

8. Do not use the dry chemical fire extinguishing agent on the engine. The dry chemical fire extinguishing agent can cause corrosion to the engine parts.
9. Do not engage the starter when the engine is at or more than idle. Damage to the starter can occur.
10. If the engine is in stall condition, retard the thrust lever. Engine destruction could occur.
11. The fuel pump and hydromechanical unit HMU are fuel lubricated. Do not motor the engine unless the boost pump pressure is applied to fuel pump inlet.
12. During a wet motor, make sure you do not see an EGT rise. This indication of an engine internal or tailpipe fire. If this occurs, move the start lever to the cutoff position and dry motor the engine to extinguish the fire. Damage to equipment can occur.
13. Do not power operate the thrust reverser sleeves if the thrust reverser cowls are open or unlocked. If you do not obey this instruction, damage to the thrust reverser and the adjacent structures can occur.
14. Make sure that the fan cowl panel adjacent to the thrust reverser that is to be opened is in 28-55 degrees full open position. This will prevent damage to the fan cowl panel and the thrust reverser.

11.2.3.4 Wind Direction

1. Wind direction and speed can cause stability problems for the engine.
2. As far as possible, put the airplane in a position opposite to the wind direction.
3. Static ground operation of the engine is not permitted for these conditions:
    a. Power settings that are more than 70% N1 and
    b. Cross winds that are more than 15 knots or tail winds that are more than 5 knots.
4. If engine runs are done out of the preferred wind direction and speed limits, monitor N1, N2 and EGT. Engine overheat or stall can occur and cause engine damage.

11.2.4 Aircraft Fuel Tank Entry

1. Fuel vapors in the tank and in the vicinity or the aircraft present explosive and toxic dangers.
2. The fuel tanks must be in a fire-safe / health-safe condition when the initial tank is made.
3. Fuel tank entry shall be made with safety procedures as specified in the Fuel Tank Entry Checklist found in GMM 11.

11.2.5 Aircraft Jacking

1. All personnel involved in jacking aircraft should be thoroughly familiar with applicable technical and maintenance manuals for the aircraft involved.
2. Whenever there is a task card for aircraft jacking it is required to be used.
3. In all cases, you must use a plumb bob or similar leveling device as required by the specific aircraft manufacture.
4. Jacks will be inspected before use for condition and proper operation.
5. Before jacking, all stands, and equipment will be removed from under and near the aircraft.

6. If normal balance of aircraft has been disturbed by removal of heavy items, weight will be added where required to re-establish balance.
7. Personnel will not remain in aircraft during jacking unless it is required for observing leveling instruments.
8. Only prescribed jack pads and correct adapter to jackscrew extensions will be used.
9. After aircraft is jacked, and when possibility that an unbalance condition or equipment failure could occur, suitable safety stands/poles will be installed under wings and/or tail.
10. Unauthorized personnel should not be allowed to pass under any portion of jacked aircraft. In most cases, engines will not be changed when aircraft is jacked.
11. On collet equipped jacks, collet will be kept within two threads of lift-type cylinder during rising and screwed down firmly to cylinder after jacking to prevent settling. Other type jacks will be equipped with locking pins or nuts which will be set after jacking.
12. Aircraft may not be jacked outside a hangar unless in an emergency situation and approved by the Director of Maintenance or his designee. A wind velocity of 10 MPH can be accepted as safe maximum for outside emergency jacking.
13. Jacks will be removed away from aircraft immediately upon completion of lowering the aircraft.

11.2.6 Aircraft Safety Checklist

1. Use proper facilities for the job.
2. Follow good housekeeping procedures.
3. Keep all fire lanes open.
4. Make sure fire extinguishers are kept in their proper locations.
5. Electrical connectors 18″ off of ground.
6. Aircraft grounded.
7. Only properly trained and qualified personnel to perform the work. Trainees must be closely supervised by personnel who are appropriately trained, experienced, certified, and authorized.
8. Use proper technical data and follow the work instructions contained in the data.
9. No open fluid containers.
10. Safety pins in gear.
11. Floors cleaned (fluid spills cleaned immediately).
12. Trash containers and FOD barrels emptied.
13. Use proper stands for the job.
14. Stands cleaned and chocked or locked.
15. Stand safety rails in place.
16. Padding in place on all stands, rails, and other equipment used on or around aircraft.
17. Parts racks clean, organized and labeled.
18. All work benches clean and neat.

19. Use proper tools and equipment.
20. Make sure all parts segregated, identified, and if necessary, tagged.
21. Use proper cleaning materials and in a safe manner.
22. Use proper materials and parts.
23. Do not place any panels or large parts from aircraft directly on the concrete floor (protect the finish).
24. Inspect aircraft for cleanliness or unsafe conditions.
25. Shut down radio and avionics systems not being used.
26. Shut off electric power prior to connecting or disconnecting power cords.
27. Turn off power and battery switch when not in use.
28. Ensure that safety harnesses are attached to man-lift buckets.
29. Use proper safety restraints while using lift equipment.
30. Technicians in an area that might be affected by hydraulic system activation shall be notified personally prior to turning the hydraulic system on.
31. The anti-collision light must be turned on prior to hydraulic system actuation and must remain on as long as hydraulic power is on the aircraft.
32. When the anti-collision light is operating, it indicates that hydraulic power is turned on and is a warning to personnel to avoid hydraulic driven hazards such as flight controls, etc.
33. Ensure fuel tanks, pipes, and other areas and items that might be blocked, are FOD free prior to installation and closure.
34. Properly dispose of waste materials such as oil, fuel, rags, floor dry, and Skydrol.
35. Properly record aircraft and components' condition, and any discrepancies, in a timely manner upon discovery.
36. Properly record maintenance performed, corrective actions, deferrals, and make any necessary reports (Forms 337, etc.) prior to aircraft release.

11.2.7 Aircraft Taxiing

1. Mukamalah Aviation Company mechanics are not authorized to perform aircraft taxiing operations.

WARNING: MUKAMALAH AVIATION COMPANY MAINTENANCE PERSONNEL ARE PROHIBITED FROM PERFORMING AIRCRAFT TAXIING OPERATIONS.

11.2.8 Aircraft Towing

11.2.8.1 General Information and Policy

1. Towing aircraft is a high-risk operation that requires extreme safety precautions and alert, well trained personnel. It will be the responsibility of everyone involved to read and understand the specific manufacturers' towing procedures before any towing operation begins. These procedures are generally found in the aircraft maintenance manual ATA chapter 09.

2. Aircraft must be in a safe condition to be moved. This is to prevent injury to persons or damage to the aircraft/equipment.
3. As required, the control tower or terminal must be contacted for towing clearance.
4. Whenever possible, follow the painted ramp and hangar lines and park within the designated areas.
5. Always use wing and tail walkers when coming into and out of a hangar or when coming closer than 10 feet to any obstacle.
6. A minimum of 4 persons are required to conduct any towing of aircraft in or out of the maintenance hangar. This is the "Four Corner Concept": Nose, Tail, Left Wing, and Right Wing (left and right side for helicopters).
7. Do not tow or move an aircraft within 20 minutes of engine shutdown.
8. Hanging of chocks on the aircraft gear is not permitted. This is a hazard that has caused improper gear retraction, gear extension failures, and accidents.

11.2.8.2 Towing Personnel Responsibilities

1. Tow Vehicle Operator
    a. Inspect tow vehicle and tow bar for serviceability (shear pins, wheels, locking mechanism, and general condition).
    b. Acts as the towing team supervisor.
    c. Operate the towing vehicle in a safe manner.
    d. Towing speed will not exceed that of the walking team members. Maximum speed of 5 miles per hour is to be observed.
    e. Observe aircraft maximum towing turn limits and nose steering limits.
    f. Responsible for stopping the towing operation if signaled by the Brake Rider or Wing Walkers. Operation can only resume once the obstruction or hazard is cleared and verified by the Tow Vehicle Operator.
2. Aircraft Brake Rider
    a. Attend pre-tow briefings by a qualified Tow Vehicle Operator.
    b. Must be qualified to be stationed in cockpit during all towing operations to watch for hazardous conditions and to stop the aircraft in case of an emergency.
    c. Checks aircraft general condition for damage prior to and after aircraft movement. Ensures area is cleared of equipment/hazards prior to movement.
    d. Ensures the brake system and tires are serviceable for aircraft movement.
3. Wing Walkers
    a. Attend pre-tow briefings by a qualified Tow Vehicle Operator.
    b. Properly signal the Tow Vehicle Operator as soon as it appears the aircraft is in danger of colliding with an obstruction or aircraft.
    c. Ensure that a safe clearance of at least 3 feet (1 meter) from any obstacle is maintained at all times.

11.2.8.3 Pre-Towing Procedures

1. Tow Vehicle Operator will check the following:
    a. Tow vehicle is in good working order.
    b. Tow bar is in good working order with serviceable shear pins.
    c. Personnel (brake rider and wing walkers) are present.
    d. Ensure nose wheel steering bypass safety pins/locks are installed.
    e. Tow vehicle and tow bar are properly connected to the aircraft.
    f. Headset communications with cockpit are set up and working.
2. Brake Rider will check the following:
    a. Perform a brief walk-around of the aircraft to ensure no towing hazards exist and that there is no damage to the aircraft. Checks to ensure that all equipment and stands have been removed from the area.
    b. Check tires for satisfactory condition and ensure gear safety pins or torque links are installed.
    c. Check NLG and MLG shock struts for proper extension.
    d. If required, remove gust locks.
    e. All personnel not involved with the towing operation have exited the aircraft.
    f. Parking brake system accumulator is pressurized. If the aircraft has no accumulator pressure, notify the Tow Vehicle Operator so an additional Wing Walker can be assigned to walk along the aircraft with a set of chocks.
    g. Aircraft position and beacon lights are operational (if aircraft is moved at night or in adverse weather conditions)
    h. Communications with the Tow Vehicle Operator are satisfactory.
3. Wing Walkers will check the following:
    a. Ensure they have a signal wand and/or a whistle to notify the Tow Vehicle Operator in the event of an obstruction. For night movements, they must have a lighted signal wand.
    b. Ensure that they are at their assigned position for the towing.
    c. Ensure that wheel chocks are located for quick access in the event of an emergency stop.

11.2.9 Aircraft Wheels and Tires Maintenance

1. Due to the potential danger of mishandling aircraft tires in shops, all mechanics will be aware of the aircraft manufacturer, tire and tire and wheel manufacturer and Mukamalah Aviation Company safety precautions.
    a. Deflate tires prior to removal from aircraft.

NOTE: It is not necessary to deflate the tire for brake removal if you do a visual inspection of the wheel and tire assembly to make sure that it does not have damage that requires tire deflation.

b. Use a tire core removal tool to loosen the core valve and never completely remove core until tire is nearly empty of air. Reinstall core.

c. Never attempt to disassemble a tire and wheel unless the core valve is removed and all air is released.

2. On-aircraft wheel and tire safety.

a. When installing or removing heavy aircraft tires, mechanics will use tire dollies or other appropriate mechanical devices to avoid possible injury. Sufficient manpower is also necessary in addition to mechanical aids to safely handle heavy tires and wheels.

CAUTION: WHEN INFLATING TIRES ON AIRCRAFT, STAND IN FRONT OR IN BACK OR THE TIRE, NOT FACING THE WHEEL HALVES.

b. When inflating a tire on an aircraft, use standard maintenance practices. Use extreme caution to avoid over-inflation of high-pressure tires. Only nitrogen will be used for inflation aircraft tires.

11.2.10 Injury Prevention

11.2.10.1 General

1. The prevention of accidents and injuries is everyone's responsibility. Your job and your life may depend upon how carefully you comply with the following regulations and other common sense safety procedures.

a. Employees are not to operate or tamper with equipment with which they are unfamiliar, or which are not connected with their regular duties.

b. Unauthorized removal of any machine guard or safety device is prohibited and is cause for severe disciplinary action.

c. Positive steps must be taken to prevent the application of power before oiling, adjusting or repairing any power–driven machine or electrical equipment.

d. Personal tools must be kept in good repair.

e. Defective company owned tools or equipment must be reported to your supervisor immediately.

f. Every injury, no matter how slight, must be reported to your supervisor.

g. The supervisor shall insist that employees receive treatment for all injuries.

h. When an employee returns to work from an injury, his supervisor shall require notice from the attending physician indicating that the individual is able to work.

i. Horseplay and practical jokes are not tolerated.

j. Do not direct the blast of air from an air hose toward your body or toward another person. Such action can result in severe injury and death.

k. Use proper safety restraints while walking on top of aircraft.

11.2.10.2 Lifting

1. Wrong lifting methods cause unnecessary strains which sometimes result in injury. Practice the following rules to get best results from your effort:
    a. Be sure you have good footing then lift with a smooth even motion; do not jerk on a load.
    b. Remove greasy substances from the hands before attempting to lift. Get a good hand hold.
    c. When lifting a heavy object, shift the load or your body until you are in position to make a straight lift. Never lift while in an awkward position.
    d. When making a lift from the floor, keep your arms and back as straight as practicable, bend your knees, then lift with the powerful muscles in your legs.
    e. When it is necessary to lift from an elevation, such as a bench, table, or shelf, bring the object as close to your body as possible, hug it to you, keep your back straight and lift with your legs.
2. Ask for help when, because of excessive weight, bulk or awkward shape, the load can't be handled safely by one person.

11.2.11 Painting

1. When spray painting is to be conducted in the vicinity of electrical and electronic equipment, it should be determined that the equipment is not operational if there is the possibility of spray paint entering the unit.
2. On aircraft with an equipment cooling system, it must be determined that the cooling fan, if operation, will not draw paint into equipment.
3. Entry into an area while painting is in progress must only be done when appropriately suited.
4. If any doubt exists concerning safe practices and protection of equipment during spray painting operations, remove power from all equipment in question. Do not take chances.
5. Comply with all fire department rules.

11.2.12 Personal Protective Equipment

1. Use appropriate personal protective equipment whenever hazardous conditions may be encountered. This shall include, but is not limited to:
    a. Safety shoes.
    b. Hearing protection in required areas.
    c. Respirators.
    d. Protective clothing.
    e. Eye protection.
    f. Fall protection devices when working at heights more than 6 feet (1.8 meters).
    g. Use of hard hats in head injury hazard areas.

11.2.13 Responsibility

1. Each supervisor is responsible to aggressively promote safe work practices and the effective control of accidents within his work group. He must make the safety of employees a part of his hourly concern and is responsible for:
    a. Ensuring that each employee is informed of established safety procedures and policies through routine monthly meetings.
    b. Maintaining safe working conditions within his department; being constantly alert for unsafe equipment, conditions, work habits, practices, or attitudes.
    c. Taking immediate action to correct unsafe conditions, work habits, or attitudes.
    d. Where and when possible, eliminate safety hazards.
    e. Investigating causes of accidents and providing recommended corrective action in report form to his supervisor and the Mukamalah Aviation Company Safety Board (see Aviation Department - Loss Prevention Manual; On and Off the job Accident / Incident Procedures)
    f. Review with the employees, causes of accidents and the corrective action taken to reduce the possibility of recurrence.
2. The employee is responsible for practices which may adversely affect the wellbeing of him or of other employees. Each employee has an important function in the accident prevention program and is compelled to cooperate fully in the measures taken to promote safety. It is the responsibility of each employee to:
    a. Familiarize themselves with and abide by the company's safety policies as outlined in the Aviation Department - Loss Prevention Manual and in this manual.
    b. When assigned a task on an aircraft, always ensure there is an open item against the task. If not, enter it in the maintenance logbook. This is to preclude the possibility of an unsafe event.
    c. Never switch on electrical, hydraulic or pneumatic power or reposition flight controls without first checking with the foreman / lead in charge of the aircraft.
    d. Carry out each task utilizing every reasonable precaution to protect themselves and fellow workers from injury, and the aircraft or equipment from damage.
    e. Tag all unsafe equipment and report it to the supervisor.
    f. Report all accidents involving personal or company equipment to the supervisor in writing.
    g. Be alert for and report any unsafe condition or practice to their supervisor directly or through the Employee Action Request (EARs) suggestion program (see Aviation Department - Loss Prevention Manual).

11.2.14 Safety Suggestion Program

1. A safety suggestion program, Employee Action Request (EARs), form is provided for any employee to submit suggestions to Mukamalah Aviation Company Aviation Safety Evaluation Committee and the Safe Operations Committee (SOC).
2. EARs forms should be filled out per Aviation Department - Loss Prevention Manual and put in one of the many EARs boxes installed throughout Aviation.

3. Employees are additionally encouraged to report safety recommendations to their immediate supervisor.

11.2.15 Safety Training

1. Training is of the utmost importance to the performance of the maintenance procedures, safety of personnel involved, and safe aircraft operation. Safety training is coordinated with the Supervisor, ATT&S. The following safety training courses will be required by all Mukamalah Aviation Company employees:
    a. First Aid – initial and recurrent every three years.
    b. CPR – initial and recurrent every two years.
    c. Fire training – every two years.
    d. Fire Drill Exercises.
    e. Driver training if required to use Company vehicles.
    f. Other training as outlined in Aviation Department - Loss Prevention Manual.

11.2.16 Security

1. Following are security precautions employees should observe while performing their duties:
    a. Close all passenger/cargo doors and servicing panels when aircraft will be left unattended.
    b. Passengers or individuals should only be allowed on and off the aircraft at the proper boarding and deplaning times. Unless accompanied by a Company representative.
    c. Employees should be particularly alert to individuals trying to remain onboard without authorization or attempting to leave packages or briefcases onboard the aircraft without permission.
    d. Unauthorized personnel are not permitted to wander around the ramp or in maintenance areas.
    e. Report any suspicious action immediately to your supervisor and/or Security.
    f. Immediately report to your supervisor and/or Security the presence of any unusual packages on or near an aircraft. ***DO NOT ATTEMPT TO REMOVE ANY SUCH PACKAGE.***

NOTE: All Mukamalah Aviation Company offices must have current police telephone numbers posted and readily available to all employees.

11.2.17 Smoking

1. The “No Smoking” rules are strictly enforced.
2. Smoking Prohibited Areas.
    a. All areas except “Designated Smoking” areas.
    b. In the hangar.
    c. On or within 50 feet of any aircraft.
    d. While using volatile or flammable liquids or materials.
3. Smoking is permitted only in the “Designated Smoking” areas.

11.2.18 Vehicle Safety

1. Automobiles operated by the Aviation Department will be the responsibility of the ground support personnel.
2. Tugs, power units, etc., will be the responsibility of the ground support personnel.
3. The use of these vehicles is to accomplish the necessary movement of people, picking up and delivery of aircraft supplies, parts and passengers for the benefit of Mukamalah Aviation Company.
4. No person shall use a Company owned vehicle without first obtaining permission from the appropriate supervisor in charge.
5. No person shall operate a Company owned vehicle without first being properly licensed and have the required Company training.
6. The vehicle operator shall be responsible for the safe operation of the vehicle and for the safety of his passengers.
7. All vehicles operating inside hangars or on the Flight Line will not be left unattended at any time with the engine running. The ignition will be turned off and the hand brake set.
8. Speed limits must be adhered to.
9. Within hangars, vehicle speed shall not exceed a fast walk (5 mph).
10. On the ramp, drive only in the authorized and designated areas.
11. Report immediately any apparent defect or damage to the vehicle to your supervisor.
12. Seat belts must be worn at all times in vehicles having seat belts installed. Ensure that each occupant is seated and is wearing a seat belt.

11.2.19 Fatigue Risk Management

11.2.19.1 General

This sub-section contains information regarding policies and procedures for fatigue risk management. The purpose of these policies and procedures is to mitigate the risk of aircraft maintenance errors being made by employees holding safety sensitive positions.

11.2.19.2 Definitions

For the purpose of this sub-section the following definitions apply:

Term	Definition
Safety Sensitive Position	• Any position where an employee performs, supervises or inspects aircraft maintenance or makes a technical decision effecting the performance of aircraft maintenance. • All mechanics, planners, engineers and supervisors hold safety sensitive positions.

Full day	• A continuous, uninterrupted time period of 24 hours.
Duty period	• Time period starting when an employee reports for duty and ending when an employee goes off duty. • This period includes all rest breaks of less than 10 continuous hours taken within the duty period. • An employee working away from a main base whose assigned accommodation is more than one hour travel time to/from the assigned place of work is considered to be on duty from the time he leaves his assigned accommodation to the time he again reaches his assigned accommodation.
Rest period	• A period of not less than 10 continuous, uninterrupted hours starting when an employee goes off duty and ending when an employee reports for duty. • During rest period an employee must be free to travel to his home or assigned accommodation.
Stand-by time:	• Uninterrupted rest period when an employee is in a state of readiness to report for duty. • This period is considered to be broken if an employee reports for duty.

11.2.19.3 Responsibilities

1. All employees are responsible to manage their rest time so that they report for duty well rested.
2. All employees holding safety sensitive positions are responsible to ensure they do not exceed the duty time limitations listed in this sub-section and alert their leads / foremen / supervisors if the duty periods they are assigned could result in duty time limitations being exceeded.
3. All foremen, supervisors and any persons involved in scheduling of duty periods or assignment of overtime are responsible to ensure that duty or overtime scheduling does not result in an employee exceeding the duty time limitations listed in this section.

11.2.19.4 Duty Time Limitations

1. The following limitations apply to all employees holding safety sensitive positions.
2. Each employee must have not less than four full days of rest time in every 28 days.
3. Each employee must have not less than one full day of rest time in every 14 days.
4. No employee is to be scheduled or requested to work more than 120 hours of total duty time in 10 consecutive days on duty before receiving at least one full day of rest time.
5. No employee is to be scheduled or requested to work for a duty period of more than 14 hours except in an away-from-base AOG situation.
6. No employee is to be scheduled or requested to report for duty unless he has received the minimum listed rest period. If circumstances dictate that an employee must report for duty before his minimum rest period has ended, that rest period is considered to be part of his duty time.
7. After a duty period of not more than 14 hours, every employee must receive a rest period of not less than 10 hours.
8. After a duty period of more than 14 hours, every employee must receive a rest period of not less than 10 hours + 1 hour for every hour (or part of an hour) his duty period exceeded 14 hours.

Example: If an employee remains on duty for 16.5 hours, his rest period must not be less than 13 hours.

11.2.19.5 Fatigue Risk Management System

1. In addition to providing duty time limitations, Mukamalah Aviation Company further mitigates risk of fatigue induced aircraft maintenance errors by use of a Fatigue Risk Management System (FRMS).
2. The intent of this system is to identify and prevent situations where an employee may remain within duty time limitations but could suffer effects of cumulative fatigue when working overtime between the hours of 01:00 and 05:00, or excessive consecutive days with scheduled duty and overtime occurring between 01:00 and 05:00.
3. Details of FRMS policies and procedures are contained in the Mukamalah Aviation FRMS Manual.

11.2.20 Portable Electronic Devices

11.2.20.1 General

This sub-section contains information regarding policies and procedures for the use of portable electronic devices when performing and in the vicinity of aircraft maintenance. The purpose of these policies and procedures is to mitigate the risk of potential hazards arising from mechanics using portable electronic devices in the workplace.

11.2.20.2 Definitions

4. For the purpose of this sub-section portable electronic devices (PEDs) include:
    e. Mobile telephones.
    f. Smart phones.
    g. Tablets.

h. Laptop / notebook computers.

i. Cameras.

j. Cordless drills and screwdrivers.

k. Battery powered watches and clocks.

l. Any other portable electrical or electronic device using an internal and/or external power supply, including aircraft test equipment.

5. Portable electronic devices do not include:

   a. Any air driven equipment which has no additional electrical power source or supply.

   b. Any hand cranked equipment which has no additional electrical power source or supply.

   c. Non-battery powered, non-electronic watches and clocks.

11.2.20.3 Policies

1. No person may use any PED while performing any maintenance on aircraft or aircraft equipment unless that PED is specifically required for the procedure being performed.
2. No person may use any PED within 10 meters of an aircraft which is being refueled, defueled, having oxygen serviced, or having any part or area cleaned with flammable liquids.
3. No person may use any PED within 10 meters of any aircraft part or equipment which is being cleaned or coated using flammable liquids or vapors.
4. No person may use any PED while operating any kind of vehicle or operating any kind of powered equipment or machinery in the workplace.
5. No person may use any PED on a flying aircraft unless:

   a. The aircraft manufacturer has published a procedure for use of that particular device in flight.

   b. The requirements of GACAR 91.25(b)(5) have been met by performing and recording a determination that the PED will not cause interference with the navigation or communication system of the aircraft on which it is to be used.

11.2.20.4 Procedures

1. Before using any portable device in the workplace, ensure you are at least 10 meters from any aircraft being refueled, defueled, or having oxygen serviced, and that you are at least 10 meters from any usage or open containers of flammable liquids or vapors.
2. Before commencing any refueling, defueling or oxygen servicing on an aircraft, inform all personnel in the area (within 10 meters or working on that aircraft) that they are not to use any PEDs until that operation is completed.
3. Before commencing any operation using, or opening any container of flammable liquids or vapors, inform all personnel within 10 meters that they are not to use any PEDs until that operation is completed.
4. Before using any PED on a flying aircraft, ensure that:

   a. The PED is as described in the aircraft manufacturers published procedure, the published procedure specifies use in flight, and a printout of the published procedure is carried on board, or

b. The first time a particular PED is used on a flying aircraft, electromagnetic interference (EMI) and radio frequency interference tests are conducted, recorded, and found not to cause any interference with the operation of any aircraft systems.

11.2.21 Psychoactive Substances

11.2.21.1 General

This sub-section contains information regarding policies and procedures for mechanics affected by the use of psychoactive substances. The purpose of these policies and procedures is to mitigate the risk of aircraft maintenance errors being made by employees holding safety sensitive positions and to prevent employees causing injury to themselves or others.

11.2.21.2 Definitions

For the purpose of this sub-section psychoactive substances include:

1. Alcohol
2. Opioids
3. Cannabinoids
4. Sedatives
5. Hypnotics
6. Cocaine
7. Other psychostimulants
8. Hallucinogens
9. Volatile solvents
10. Any other substance which results in physical, cognitive, mental, affective, social, or behavioral impairment

For the purpose of this sub-section, caffeine and nicotine consumed through food, drink or tobacco usage are not considered to be psychoactive substances.

11.2.21.3 Policies

1. No person may be present in an aircraft maintenance facility or in the vicinity of any aircraft if he is suffering any impairment from non-prescribed psychoactive substances.
2. All mechanics taking prescribed medication which carries a warning “not to operate machinery,” or similar warning, or have been issued a similar written warning by their doctor (which could indicate that the medicines contain psychoactive substances) are required to report the matter to their lead, foreman or supervisor who will place them on light duties where they do not present a potential hazard to themselves, their colleagues or the Company.

11.2.21.4 Responsibilities

1. All employees are responsible for work in a physical and mental condition free from the effects of non-prescribed psychoactive substances.
2. All employees taking prescribed medicines which carry a warning against operating machinery, or similar warning, or have been issued a similar written warning by the prescribing doctor (indicating that the medicines could contain psychoactive substances) are responsible to report the fact to their foreman or supervisor.
3. All employees taking prescribed medicines who feel that the medicines could be causing some level of physical, cognitive, mental, affective, social, or behavioral impairment are responsible to re-check with the prescribing doctor or medical facility to determine if any precautions are applicable.
4. All leads, foremen and supervisors are responsible to request a medical examination per Mukamalah Aviation Company safety policy if they suspect that one of their subordinates is suffering impairment from a non-prescribed psychoactive substance, particularly if that person is involved in an accident or incident.

11.2.21.5 Procedures

1. When a lead, foreman or supervisor suspects that a subordinate is suffering from the effects of non-prescribed psychoactive substances, especially if that employee appears to be suffering from problematic use or is involved in an incident or accident, he is to request that employee to undergo a medical examination per the provisions of Mukamalah Aviation Company safety policy using Mukamalah Aviation Company Form 3941 available on the company intranet at https://sharek.aramco.com.sa/orgs/eforms/eForms%20Library/3941.pdf and sample shown in Appendix A.
2. He must follow up to ensure the employee undertakes the medical examination and he receives the results of the examination.
3. Any non-cooperation on the part of the employee to be examined and any medical examination result which reveals presence of non-prescribed psychoactive substances is to be reported to the Accountable Executive.
4. When an employee reports to his lead, foreman or supervisor that he is taking prescribed medicine which carries a warning not to operate machinery (or similar) or has been given a similar written warning by the prescribing doctor, he is to be placed on limited duties where he cannot easily cause a hazard to himself, another employee, or any Company equipment.

11.2.22 Working Alone

RESERVED

Refer to current AMD Memorandum no. AMD-60/14 (or later superseding memorandum) on personnel performing maintenance work alone.

11.3 QUALITY ASSURANCE

11.3.1 General

1. The achievement of our overarching goals is demonstrably facilitated by the implementation of a robust Quality Assurance Program. This program, meticulously aligned with our strategic direction, plays a pivotal role in achieving the following:
    a. Compliance/Conformance Monitoring: Through rigorous surveillance, the program ensures consistent adherence to applicable regulations and alignment with internationally recognized standards, such as internal company requirements.
    b. Process Monitoring: Departmental processes are systematically defined, documented, and meticulously monitored. This ongoing oversight prioritizes continual improvement within all work activities.
    c. Auditing of Outsourced Functions: External suppliers and vendors undergo a robust auditing process to guarantee their compliance with our stringent safety performance standards, as outlined in established contracts and Service Level Agreements (SLAs).

For Quality Assurance, refer to Quality Management Manual (QMM).

11.3.2 Service Difficulty Reports (SDR's)

1. This document outlines the formal requirements for submitting Service Difficulty Reports (SDRs) by Mukamalah Aviation, as mandated by GACAR 121.1553.
2. Reports should be submitted electronically using the designated format and platform stipulated by the regulatory body.
3. Mukamalah Aviation may be required to submit supplementary information upon request from the President, such as detailed technical data, maintenance records, or crew reports.
4. The President may conduct investigations into specific service difficulties based on their severity, potential safety implications, or recurring nature.
5. Mukamalah Aviation are responsible for ensuring the accuracy, completeness, and timeliness of submitted SDRs.
6. For the report the occurrence items refer to SMM 3.3.2

11.3.2.1 Reporting Frequency and Timing

1. SDRs must be submitted promptly, generally within 24 hours of identifying a service difficulty.
2. In instances where immediate reporting is not feasible due to extenuating circumstances, a preliminary report should be submitted within the 48-hour timeframe, followed by a comprehensive report once additional information becomes available.

11.3.2.2 Report Content

Each SDR must encompass the following essential details:

1. Date and Time.

2. Aircraft Identification.
3. Flight Information.
4. Description of Service Difficulty.
5. Impact on Operations.
6. The emergency procedure effected (for example, unscheduled landing and emergency descent)
7. The nature of the failure, malfunction, or defect Identification of the part and system involved, including available information pertaining to type designation of the major component and time since overhaul.
8. Apparent cause of the failure, malfunction, or defect (for example, wear, crack, design deficiency, or personnel error)
9. Whether the part was repaired, replaced, sent to the manufacturer, or other action taken.
10. Whether the aircraft was grounded
11. Corrective Actions.
12. Maintenance Actions.
13. Recommendations.

12. FORMS, LABELS, AND PLACARDS

INTENTIONALLY LEFT BLANK

Aramco Aviation Rd.
King Fahad Int. Airport
Dammam, Saudi Arabia 32552