UAE GCAA Introduces Management System Processes to UAE CAR M with the Introduction of Supplement S-1 Organisation Requirements

Sofema Online (SOL) www.sofemaonline.com considers the changes to CAR M to introduce Management System Regulatory Requirements and notes that rather than replace CAR M Subpart G with a CAR PART CAMO UAE GCAA have elected to address the various requirements with the addition of a supplement identified as supplement S1

Note the following Content is intentionally redacted and in every case, you should refer to the current & applicable documentation – the following is for Training and General Awareness Purposes.

Introduction

Compared to the CAR-M Subpart G quality system 'framework', the new elements that are introduced in the supplement are, in particular,

- Establish a safety policy and the related safety objectives;
- Implement safety reporting procedures in line with just culture principles;
- Ensure the identification of aviation safety hazards entailed by its activities, ensure their evaluation
- 'Safety Risk Management' of the ICAO SMS framework.
- 'Safety Assurance'.

S-1 CAMO.005 Scope

Supplement (S-1) establishes CAMO Requirements for
- Organization managing CAW of CMPA and/or
- Air Carriers or
- Other Commercial Operations (excluding with Non-CMPA)
- for the issue or continuation of a certificate for the management of continuing airworthiness of an aircraft and of components for installation.
- For other CAMOs, the requirements in this supplement may apply on optional basis.

S-1.CAMO.120 Means of compliance (AMOC)

- AMOC AMC adopted by the GCAA may be used by an organisation to establish compliance with the Regulation.
- organisation wishes to use an alternative means of compliance, it shall, prior to using it, provide the GCAA with a full description of the alternative means of compliance.
- The organisation may use AMOC subject to prior approval by the GCAA, and upon receipt of the notification of such approval.

S-1.CAMO.130 Changes to the organisation

The application for the amendment of an organisation certificate should be submitted at least 30 working days before the date of the intended changes.

In the case of a planned change of a nominated person, the organisation should inform the GCAA at least 20 working days before the date of the proposed change.

- Require prior approval:

Application shall be submitted before any such change takes place, in order to enable the GCAA to determine continued compliance with Regulation - Organisation shall provide the GCAA with any relevant documentation.

- o Changes to Scope or Approval Terms
- o Changes to the nominated personnel;
- o Changes to the reporting lines between the nominated personnel and the accountable manager;
- o Procedure as regards changes not requiring prior approval

- Not requiring prior approval:

- o All changes not requiring prior approval shall be managed and notified to the GCAA as defined in the procedure approved by the GCAA.

Note - Unforeseen changes should be notified at the earliest opportunity, in order to enable the GCAA to determine whether there is continued compliance with the applicable requirements, and to amend, if necessary, the organisation certificate and related terms of approval.

Management of Changes (AMC2 S-1.CAMO.130)

- The organisation should manage the safety risks related to any changes to the organisation in accordance with AMC1 S-1.CAMO.200(a)(3) point (e).
- For changes requiring prior approval, it should conduct a risk assessment and provide it to the GCAA upon request.

Effective management of change should be supported by the following:

- Implementation of a process for formal hazard identification/risk assessment for major operational changes, major organisational changes, changes in key personnel, and changes that may affect the way continuing airworthiness management is carried out.
- Identification of changes that are likely to occur in business which would have a noticeable impact on:
  - o resources — material and human;
  - o management direction — policies, processes, procedures, training; and
  - o management control.
- Safety cases/risk assessments that are aviation-safety focused.
- Involvement of key stakeholders in the change management process as appropriate.
  - o During the management of change process, previous risk assessments, and existing hazards are reviewed for possible effect.

S-1.CAMO.150 Findings

- After receipt of notification of findings, the organisation shall:
  - o Identify the root cause or causes of and contributing factors to the non-compliance;
  - o Define a corrective action plan;
  - o Demonstrate corrective action implementation to the satisfaction of the GCAA.

- o Actions referred to in points (a)(1), (a)(2) and (a)(3) shall be performed within the period agreed with the GCAA.

GM1 S-1.CAMO.150 Findings (CAUSAL ANALYSIS)

A system description of the organisation that considers the organisational structures, processes and their interfaces, procedures, staff, equipment, facilities and the environment in which the organisation operates, will support both effective causal (reactive) and hazard (proactive) analyses.

- Focus on establishing why it was caused.
  - o Establishing the root cause or causes of a non-compliance often requires an overarching view of the events and circumstances that led to it, to identify all the possible systemic and contributing factors (regulatory, human factors (HF), organisational factors, technical, etc.) in addition to the direct factors.

Note 1 - A narrow focus on single events or failures, or the use of a simple, linear model, such as a fault tree, to identify the chain of events that led to the non-compliance, may not properly reflect the complexity of the issue, and therefore there is a risk that important factors that must be addressed in order to prevent a reoccurrence will be ignored.

Note 2 - Inappropriate or partial causal analysis often leads to defining 'quick fixes' that only address the symptoms of the non-conformity.

- A peer review of the results of the causal analysis may increase its reliability and objectivity.

S-1.CAMO.155 Immediate reaction to a safety problem

The organisation shall implement:
- Any safety measures mandated by the GCAA;
- Any relevant mandatory safety information issued by the Authority of the State of Design (SOD) of a UAE registered Aircraft.

S-1.CAMO.160 Occurrence reporting

- The organisation shall implement an occurrence reporting system.
  - o Shall ensure that any
    - Incident,
    - Malfunction,
    - Technical defect,
    - Exceeding of technical limitations,
    - Occurrence that would highlight inaccurate, incomplete or ambiguous information contained in data established in accordance with CAR-21
    - or other irregular circumstance that has or may have endangered the safe operation of the aircraft and that has not resulted in an accident or serious incident are reported to the GCAA and to the organisation responsible for the design of the aircraft.

- The reports shall be made in a form and manner established by the GCAA and shall contain all pertinent information about the condition known to the organisation.

- Report as soon as possible, but in any case, within 72 hours of the organization identifying the condition to which the report relates, unless exceptional circumstances prevent this.
- Follow up where relevant to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified.

AMC1 S-1.CAMO.160 Occurrence reporting

- May establish an integrated occurrence reporting system covering all certificate(s) held; and
- Single reports for occurrences should include all relevant information from the perspective of the different organisation certificates held; addresses all relevant specific mandatory data fields and clearly identifies all certificate holders for which the report is made; (reporting agreed with the GCAA)

- Assign responsibility to one or more suitably qualified persons with clearly defined authority, for coordinating action on airworthiness occurrences and for initiating any necessary further investigation and follow-up activity. (Assign Single Point of Contact SPOC)

AMC2 S-1.CAMO.160 Occurrence reporting

- Share relevant safety-related occurrence reports with the design approval holder of the aircraft in order to enable it to issue appropriate service instructions and recommendations to all owners or operators.

GM1 S-1.CAMO.160 Occurrence reporting

This list should not be understood as being an exhaustive collection of all issues that may pose a significant risk to aviation safety and therefore reporting should not be limited to items listed in the AMC-22.

https://www.gcaa.gov.ae/en/epublication/EPublications/Standalone%20AMC/AMC%20-%2022%20-%20INCIDENT%20REPORTING%20-%20ISSUE%2007.pdf

S-1.CAMO.200 Management system

The organisation shall establish, implement, and maintain a management system that includes:

- Defined lines of responsibility and accountability throughout the organisation
  - Direct safety accountability of the accountable manager;
- Description of the overall philosophies and principles of the organisation with regard to safety, referred to as the safety policy;
- The identification of aviation safety hazards entailed by the activities of the organisation, their evaluation and the management of associated risks, including taking actions to mitigate the risks and verify their effectiveness;
- Maintaining personnel trained and competent to perform their tasks;
- Documentation of all management system key processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;

- A function to monitor compliance of the organisation with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary;
- Any additional requirements that are laid down in the CAR.

The management system shall correspond to the size of the organisation and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities. (May be integrated with other GCAA approvals)

Note - for CAT Air Operators, the management system provided for in the CAR shall be an integrated part of the operator's management system.

GM1 S-1.CAMO.200 Management system

- Safety management seeks to proactively identify hazards and to mitigate the related safety risks before they result in aviation accidents and incidents.
  Safety management enables an organisation to manage its activities in a more systematic and focused manner.
  - When an organisation has a clear understanding of its role and contribution to aviation safety, it can prioritise safety risks and more effectively manage its resources and obtain optimal results.

The principles of the requirements in S-1.CAMO.200, S-1.CAMO.202, S-1.CAMO.205 and the related AMC constitute the management system framework for aviation safety management.

- This framework addresses the core elements of the ICAO safety management system (SMS) framework defined in Appendix 2 to Annex 19, and it promotes an integrated approach to the management of an organisation.

- It facilitates the introduction of the additional safety management components, building upon the existing management system, rather than adding them as a separate framework.

The core part of the management system framework (S-1.CAMO.200) focuses on what is essential for safety management, by mandating the organisation to:

(a) clearly define accountabilities and responsibilities;

(b) establish a safety policy and the related safety objectives;

(c) implement safety reporting procedures in line with just culture principles;

(d) ensure the identification of aviation safety hazards entailed by its activities, ensure their evaluation, and the management of associated risks, including:

- Taking actions to mitigate the risks;
- Verifying the effectiveness of the actions taken to mitigate the risks;

(e) monitor compliance, while considering any additional requirements that are applicable to the organisation;

(f) keep their personnel trained, competent, and informed about significant safety issues; and

(g) document all the key management system processes.

Key Safety Management Processes;

It is important to recognise that safety management will be a continuous activity, as hazards, risks and the effectiveness of safety risk mitigations will change over time.

These key safety management processes are supported by a compliance monitoring function as an integral part of the management system for safety.

- Hazard identification;
- Safety risk management;
- Internal investigation;
- Safety performance monitoring and measurement;
- Management of change;
- Continuous improvement;
- Immediate safety action and coordination with the aircraft operator's Emergency Response Plan (ERP).

Concerns the Connection between Compliance & Safety

Note - The compliance monitoring function may, in addition, support the follow-up of safety risk mitigation actions.

- Where non-compliances are identified through internal audits, the causes will be thoroughly assessed and analyzed.
    - Such an analysis in return supports the risk management process by providing insights into causal and contributing factors, including HF, organisational factors and the environment in which the organisation operates.

- In this way, the outputs of compliance monitoring become some of the various inputs to the safety risk management functions.
- Internal audits will inform the organisation's management of the level of compliance within the organisation, whether safety risk mitigation actions have been implemented, and where corrective or preventive action is required.

Key Notes

- Safety management necessarily addresses how humans can contribute both positively and negatively to an organisation's safety outcomes, recognising that human behaviour is influenced by the organisational environment.
- The effectiveness of safety management largely depends on the degree of commitment of the senior management to create a working environment that optimises human performance and encourages personnel to actively engage in and contribute to the organisation's management processes.
- Positive safety culture relies on a high degree of trust and respect between the personnel and the management, and it must therefore be created and supported at the senior management level.
- Management should treat individuals who identify hazards and report adverse events in a consistently fair and just way. (trust & a positive safety culture takes time and effort to establish)

By viewing safety management and the related organisational policies and key processes as items that are implemented not only to prevent incidents and accidents, but also to meet the

organisation's strategic objectives, any investment in safety should be seen as an investment in productivity and organisational success.

Management system Organisation and Accountabilities (AMC1 S-1.CAMO.200 (a) (1))

The management system should encompass safety by including a safety manager, and a safety review board in the organisational structure. The functions of the safety manager are those defined in AMC1 S-1.CAMO.305 (a) (4); (a) (5).

Safety Review Board (SRB)
High-level committee strategic safety in support of the accountable manager's safety accountability.

- Chaired by the accountable manager and composed of the person or group of persons nominated under point S-1.CAMO.300(a) and (b).
- Monitors
  - Safety performance against the safety policy and objectives;
  - Safety action is taken in a timely manner; and
  - Effectiveness of the organisation's management system processes.

- The safety review board may also be tasked with:
  - Reviewing the results of compliance monitoring;
  - Monitoring the implementation of related corrective and preventive actions.

- The safety review board should ensure that appropriate resources are allocated to achieve the established safety objectives.
- The safety manager or another person designated by the safety manager may attend, as appropriate, safety review board meetings. (He or she may communicate to the accountable manager all information, as necessary, to allow decision-making based on safety data.)

Note Small Orgs – Agreement with GCAA & risk Assess No SRB – Managed by SM

Management System Safety Action Group (GM1 S-1.CAMO.200 (a) (1))

- Safety Action Group (SAG) may be established
  - standing group or as an ad-hoc group
  - Assist, or act on behalf of the safety manager or the safety review board. (Multi SAGs possible)
  - SAG reports to SRB (may be composed of managers, supervisors and personnel from operational areas.)
- The safety action group may be tasked with or assist in:
  - Monitoring safety performance;
  - Defining actions to control risks to an acceptable level;
  - Assessing the impact of organisational changes on safety;
  - Ensuring that safety actions are implemented within agreed timescales;
  - Reviewing the effectiveness of previous safety actions and safety promotion.

Definitions

- o 'accountability' refers to an obligation which cannot be delegated,
- o 'responsibility' refers to an obligation that can be delegated.

AMC1 S-1.CAMO.200 (a)(2)

Management System - Safety Policy & Objectives

- Reflect organisational commitments regarding safety, and its proactive and systematic management, including the promotion of a positive safety culture;
- Include internal reporting principles, and encourage personnel to report continuing airworthiness-related errors, incidents and hazards;
- Recognise the need for all personnel to cooperate with the compliance monitoring and internal investigations referred to under point (c) of AMC1 S-1.CAMO.200(a)(3);
- Be endorsed by the accountable manager;
- Be communicated, with visible endorsement, throughout the organisation; and
- Be periodically reviewed to ensure it remains relevant and appropriate for the organisation.

Safety Policy should include a commitment to:

- Comply with all applicable legislation, to meet all the applicable requirements, and adopt practices to improve safety standard;
- Provide the necessary resources for the implementation of the safety policy.
- Apply HF principles;
- Enforce safety as a primary responsibility of all managers; and
- Apply 'just culture' principles to internal safety reporting and the investigation of occurrences and, in particular, not to make available or use the information on occurrences:
  - o To attribute blame or liability to front line staff or other persons for actions, omissions or decisions taken by them that are commensurate with their experience and training; or
  - o For any purpose other than the maintenance or improvement of aviation safety.

- Senior management should continually promote the safety policy to all personnel, demonstrate its commitment to it, and provide necessary human and financial resources for its implementation.
- Taking due account of its safety policy, the organisation should define safety objectives. The safety objectives should:
  - o Form the basis for safety performance monitoring and measurement;
  - o Reflect the organisation's commitment to maintain or continuously improve the overall effectiveness of the management system;
  - o Be communicated throughout the organisation; and
  - o Be periodically reviewed to ensure they remain relevant and appropriate for the organisation.

Safety Management Key Processes AMC1 S-1.CAMO.200 (a)(3)

Hazard identification processes

- A reporting scheme for both reactive event and proactive hazards should be the formal means of engaging with hazards and the associated risks (that may affect safety.)
    - Collecting,
    - Recording,
    - Analysing,
    - Acting on, and
    - Generating Feedback

- The identification should include:
    - hazards that may be generated from HF issues that affect human performance; and
    - hazards that may stem from the organisational set-up or the existence of complex operational and maintenance arrangements (such as when multiple organisations are contracted, or when multiple levels of contracting/subcontracting are included).

- **Risk management processes** - A formal safety risk management process should be developed and maintained that ensures that there is:
    - analysis (e.g. in terms of the probability and severity of the consequences of hazards and occurrences);
    - assessment (in terms of tolerability); and
    - control (in terms of mitigation) of risks to an acceptable level.

Specify – Management Levels with authority to make decisions regarding the tolerability of safety risks

- Internal investigation - define process (refer to AMC1 S-1. CAMO.202).
- Internal investigations should extend beyond the scope of the occurrences required to be reported to the GCAA

- **Safety Performance Monitoring and Measurement**

    - Safety performance of the organisation is verified in comparison with the safety policy and the safety objectives.
        - safety reporting, addressing also the status of compliance with the applicable requirements;
        - safety reviews, including trends reviews, which would be conducted during the introduction of new products and their components, new equipment/technologies, the implementation of new or changed procedures, or in situations of organisational changes that may have an impact on safety;
        - safety audits focusing on the integrity of the organisation's management system, and on periodically assessing the status of safety risk controls; and
        - safety surveys, examining particular elements or procedures in a specific area, such as problem areas identified, or bottlenecks in daily continuing airworthiness management activities, perceptions and opinions of management personnel, and areas of dissent or confusion.

- **Management of Change**

    - o The organisation should manage the safety risks related to a change. The management of change should be a documented process to identify external and internal changes that may have an adverse effect on the safety of its continuing airworthiness management activities.
    - o It should make use of the organisation's existing hazard identification, risk assessment and mitigation processes.

- **Continuous improvement**

    - o Continuously seek to improve safety performance and the effectiveness of its management system.
        - Audits carried out by external organisations;
        - assessments, including assessments of the effectiveness of the safety culture and management system, in particular to assess the effectiveness of the safety risk management processes;
        - staff surveys, including cultural surveys, that can provide useful feedback on how engaged personnel are with the management system;
        - monitoring the recurrence of incidents and occurrences;
        - evaluation of safety performance indicators and review of all the available safety performance information; and
        - identification of lessons learnt.

- **Immediate safety action and coordination with the operator's Emergency Response Plan (ERP)**

    - o Requires a procedure to act promptly when it identifies safety concerns with the potential to have immediate effect on flight safety, including clear instructions on who to contact at the owner/operator, and how to contact them, including outside normal business hours.
    - o To react promptly if the ERP is triggered by the operator and it requires the support of the CAMO.

Safety Risk Management — Interfaces Between Organisations GM1 S-1.CAMO.200(a)(3)

- Specifically address the planned implementation of, or participation of the organisation in, any complex operational and maintenance arrangements (such as when multiple organisations are contracted, or when multiple levels of contracting/subcontracting are included).
- Hazard identification and risk assessment extends to cover the overall control structure, and assesses in particular the following elements across all subcontract levels and all parties within such arrangements:
    - o Coordination and interfaces between the different parties;
    - o Applicable procedures;
    - o Communication between all the parties involved, including reporting and feedback channels;
    - o Task allocation, responsibilities and authorities; and
    - o Qualifications and competency of key personnel with reference to point S-1.CAMO.305.

- **Safety Risk Management should focus on the following aspects:**

  - o Assignment of accountability and allocation of responsibilities;
  - o Only one party is responsible for a specific aspect of the arrangement, with no overlapping or conflicting responsibilities, in order to eliminate coordination errors;
  - o Existence of clear reporting lines, both for occurrence reporting and progress reporting;
  - o Possibility for staff to directly notify the organisation of any hazard that suggests an obviously unacceptable safety risk as a result of the potential consequences of this hazard.

The safety risk management processes should ensure that there is regular communication between all the parties involved to discuss work progress, risk mitigation actions, and changes to the arrangement, as well as any other significant issues.

Communication On Safety (AMC1 S-1.CAMO.200(a)(4))

- Ensures that all personnel are aware of the safety management activities, as appropriate, for their safety responsibilities;
- Conveys safety-critical information, especially related to assessed risks and analysed hazards;
- Explains why particular actions are taken; and
- Explains why safety procedures are introduced or changed.
- Regular meetings with personnel at which information, actions, and procedures are discussed, may be used to communicate safety matters.

Safety Promotion GM1 S-1.CAMO.200(a)(4)

- Safety training, combined with safety communication and information sharing, forms part of safety promotion.
- Safety promotion activities support:
  - o Organisation's policies, encouraging a positive safety culture, creating an environment that is favourable to the achievement of the organisation's safety objectives;
  - o Organisational learning; and
  - o Implementation of an effective safety reporting scheme and the development of a just culture.
- Depending on the particular safety issue, safety promotion may also constitute or complement risk mitigation actions.
- Qualification and training aspects are further specified in the AMC and GM to S-1.CAMO.305.

Management System Documentation GM1S-1.CAMO.200(a)(5)

  - o Separate Manual (SMM)
  - o Or CAME (AMC1 S-1.CAMO.300, Part 2 'Management system procedures').

Compliance Monitoring AMC1 S-1.CAMO.200(a)(6)

- o Provide an independent monitoring function on how the organisation ensures compliance with the applicable requirements, policies and procedures, and to request action where non-compliances are identified.
- o The independence of the compliance monitoring should be established by always ensuring that audits and inspections are carried out by personnel who are not responsible for the functions, procedures or products that are audited or inspected.

Contracting of the Independent Audit

- If external personnel are used to perform independent audits:
  - o Any such audits are performed under the responsibility of the compliance monitoring manager; and
  - o The organisation remains responsible for ensuring that the external personnel have the relevant knowledge, background, and experience that are appropriate to the activities being audited, including knowledge and experience in compliance monitoring.
  - o The organisation retains the ultimate responsibility for the effectiveness of the compliance monitoring function, in particular for the effective implementation and follow-up of all corrective actions.

Compliance Monitoring — Feedback System (AMC4 S-1.CAMO.200(a)(6)

- The feedback system should not be contracted to external persons or organisations.
- The feedback part of the compliance monitoring function should define who is required to address any non-compliance in each particular case, and the procedure to be followed if the corrective action is not completed within the defined time frame.
- The principal functions of the feedback system are to ensure that all findings resulting from the independent audits of the organisation are properly investigated and corrected in a timely manner, and to enable the accountable manager to be kept informed of any safety issues and the extent of compliance with the CAR.

- The accountable manager should hold regular meetings with staff to check the progress of any corrective actions.
  - o These meetings may be delegated to the compliance monitoring manager on a day-to-day basis, provided that the accountable manager:
    - Meets the senior staff involved at least twice per year to review the overall performance of the compliance monitoring function; and
    - Receives at least a half-yearly summary report on non-compliance findings.

S-1.CAMO.205 Contracting and subcontracting

- The organisation shall ensure that when contracting maintenance or when subcontracting any part of its continuing airworthiness management activities:
  - o These activities conform to the applicable requirements; and
  - o Any aviation safety hazards associated with such contracting or subcontracting are considered as part of the organisation's management system.
- When the organisation subcontracts any part of its continuing airworthiness management activities to another organisation, the subcontracted organisation shall work under the approval of the organisation.

- The organisation shall ensure that the GCAA is given access to the subcontracted organisation, to determine continued compliance with the applicable requirements.

A CAMO is responsible for ensuring that interfaces and communication channels are established with the contracted maintenance organisation for occurrence reporting. This does not replace the obligation of the contracted organisation to report to the GCAA

S-1.CAMO.220 Record-keeping

- The organisation shall ensure that records required by points CAR M.305, CAR ML.305 and, if applicable point CAR M.306, are retained.
- The organisation shall record all details of work carried out.
- Management system records, as well as any contracts pursuant to point S-1.CAMO.205, shall be kept for a minimum period of 5 years.

- Personnel records - The organisation shall ensure that the following records are retained:
  - Records of qualification and experience of personnel involved in continuing airworthiness management, compliance monitoring and safety management;
  - Records of qualification and experience of all airworthiness review staff.
  - Personnel records shall be kept as long as the person works for the organisation, and shall be retained until 3 years after the person has left the organisation.

- Records should be kept in paper form, or in electronic format, or a combination of the two. Records that are stored on microfilm or in optical disc formats are also acceptable. The records should remain legible throughout the required retention period. The retention period starts when the record is created or was last amended.
- Paper systems should use robust materials which can withstand normal handling and filing. Computer record systems should have at least one backup system, which should be updated within 24 hours of any new entry.
  - Computer record systems should include safeguards to prevent unauthorised personnel from altering the data.

Continuing Airworthiness Management Records - AMC2 S-1.CAMO.220

- The CAMO should ensure that it always receives a complete certificate of release to service from the approved maintenance organisation, independent certifying staff and/or from the Pilot-owner such that the required records can be retained.
- The system to keep the continuing airworthiness records should be described in the CAME.
- When a CAMO arranges for the relevant maintenance organisation to retain copies of the continuing airworthiness records on its behalf, it will nevertheless continue to be responsible for the records under point CAMO.220 relating to the preservation of records.
- Microfilming or optical storage of records may be carried out at any time. The records should be as legible as the original record, and remain so for the required retention period.

Next Steps

Sofema Aviation Services (SAS) www.sassofia.com Sofema Online (SOL) www.sofemaonline.com provide Classroom, Webinar & Online Training in support of UAE GCAA Regulations please see the relevant website or email team@sassofia.com