U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Certification Maintenance Requirements **Date:** D R A F T **AC No:** 25-19B
Initiated By: AIR-627

This advisory circular (AC) describes an acceptable means for obtaining Federal Aviation Administration (FAA) airworthiness approval for certification maintenance requirements (CMRs). It includes the selection, documentation, control, and management of CMRs. This AC also provides a method for coordinating these CMRs under a maintenance review board (MRB), if an MRB is convened.

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.

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1 PURPOSE.

1.1 This AC provides guidance on the selection, documentation, control, and management of CMRs. This AC also provides a method for coordinating these CMRs under an MRB, if an MRB is convened. This AC describes an acceptable means, but not the only means, for selecting, documenting, controlling, and managing CMRs.

1.2 This revision is the agency's primary guidance for an optional method of showing compliance with the § 25.1309(e) certification maintenance requirement at Amendment 152. This revision also incorporates lessons learned since its release in 2011 and additional guidance resulting from a rulemaking activity by the European Union Aviation Safety Agency (EASA) who revised its Advisory Material Circular (AMC) 25-19, *Certification Maintenance Requirements,* in August 2017 (CS-25 amendment 20).

2 APPLICABILITY.

2.1 The guidance provided in this AC is directed to applicants seeking airworthiness approval using CMRs on transport airplanes to mitigate hazards or failures identified in the system safety analysis.

2.2 This is a guidance document. Its content is not legally binding in its own right and will not be relied upon by the Department as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance document is voluntary only. Nonconformity will not affect rights and obligations under existing statutes and regulations.

2.3 The FAA will consider other means of demonstrating compliance that an applicant may elect to present. Terms such as "should," "may," and "must" are used only in the sense of ensuring the applicability of this particular method of compliance when the acceptable method of compliance in this document is used. If the FAA becomes aware of circumstances in which following this AC would not result in compliance with the

applicable regulations, the FAA may require additional substantiation or design changes as a basis for finding compliance.

2.4 This material does not change, create any additional, authorize changes in, or permit deviations from existing regulatory requirements.

2.5 This AC was developed in context with Title 14 of the Code of Federal Regulations (14 CFR) part 25 and associated maintenance tasking. Part 23, 27, 29, 33, and 35 applicants may also use the guidance in this AC, as applicable.

3 CANCELLATION.

This AC cancels AC 25-19A, *Certification Maintenance Requirements*, dated October 3, 2011.

4 RELATED DOCUMENTS.

4.1 Title 14, Code of Federal Regulations.

The following 14 CFR part 25 regulations are related to this AC. You can download the full text of these regulations from the Federal Register website at eCFR, jointly administered by the Office of the Federal Register (OFR) of the National Archives and Records Administration (NARA) and the U.S. Government Publishing Office (GPO). You can order a paper copy from the U.S. Superintendent of Documents, U.S. Government Publishing Office, Washington, D.C. 20401; at Government Publishing Office, by calling telephone number (202) 512-1800; or by sending a fax to (202) 512-2250.

- Section 25.4, Definitions
- Section 25.671, Control Systems – General.
- Section 25.783, Fuselage doors.
- Section 25.901, Powerplant – Installation.
- Section 25.933, Reversing systems.
- Section 25.1301, Function and Installation.
- Section 25.1309, Equipment, systems, and installations.
- Section 25.1529, Instructions for Continued Airworthiness.

4.2 Advisory Circulars.

The following ACs are related to the guidance in this AC. The latest version of each AC referenced in this document is available on the FAA website at Regulations and Policies and on the Dynamic Regulatory System (DRS).

- AC 25.1309-1B, *System Design and Analysis*.
- AC 120-17B, *Reliability Program Methods–Standards for Determining Time Limitations*.
- AC 121-22D, *Maintenance Review Boards, Maintenance Type Boards, and Original Equipment Manufacturer/Type Certificate Holder Recommended Maintenance Procedures*.
- AC 20-174, *Development of Civil Aircraft and Systems*.

4.3 **Other Related Documents.**

- Maintenance Steering Group (MSG-3): Operator/Manufacturer Scheduled Maintenance Development, Volume 1 - *Fixed Wing Aircraft*, and Volume 2 - *Rotorcraft*, Revision 2022.1, Airlines for America (A4A) (formerly Air Transport Association of America (ATA)). Available at Airlines for America, Publications Department, 1275 Pennsylvania Avenue, NW Suite 1300, Washington, DC 20004,
- *International MRB/MTB Process Standard (IMPS),* Issue 02, October 1, 2022. Available at IMRBPB.
- Advisory Material Circular (AMC) 25-19, *Certification Maintenance Requirements,* (CS-25 amendment 20), dated August 31, 2017.
- Certification Authorities for Transport Aircraft (CATA) technical issue paper TCCA-005-MRB task interval escalation.

5 CERTIFICATION MAINTENANCE REQUIREMENT.

5.1 CMRs are a subset of the instructions for continued airworthiness identified during the certification process. A CMR usually results from a formal, numerical analysis conducted to show compliance with the requirements applicable to catastrophic or hazardous failure conditions, as defined in § 25.4 and AC 25.1309-1B. A CMR may also result from a qualitative analysis based on engineering judgment.

5.2 CMRs are required tasks, and associated intervals, developed to achieve compliance with § 25.1309 and other regulations requiring safety analyses (such as §§ 25.671, 25.783, 25.901, and 25.933). A CMR is used to detect latent failures and detect wear out of an item that would, in combination with one or more other specific failures or events, result in a hazardous or catastrophic failure condition. A CMR may also be used to detect a latent failure, which could—in combination with one specific failure or event—result in a major failure condition for which a system safety assessment identifies the need for a scheduled maintenance task either through a quantitative assessment or a qualitative analysis using engineering judgment.

5.3 CMRs are derived from a fundamentally different analysis process than the maintenance tasks and intervals that result from the MSG-3 analysis associated with MRB activities (if the MRB process is used). Although both types of analysis may produce equivalent maintenance tasks and intervals, it is not always appropriate to

substitute a CMR with a task created from the MRB activities (i.e., a task documented in the maintenance review board report (MRBR)). It is assumed that once the fault is discovered then the maintenance activity will restore it to OEM specification before the airplane is returned to service.

5.4 The CMRs verify that a certain failure has or has not occurred, or inspect for impending failures (e.g., wear out or leakage), and indicate that repairs are necessary if the item has failed, or indicate repairs are necessary if the item has degraded beyond a predetermined limit. Because the exposure time to a latent failure is a key element in the calculations used in a safety analysis, limiting the exposure time will have a significant effect on the resultant overall failure probability of the system. The intervals for CMR tasks should be designated in terms of flight hours, cycles, or calendar time, as appropriate.

5.5 The type certification process assumes the airplane will be maintained in a condition of airworthiness equal to its approved design or properly altered condition. The process described in this AC is not intended to establish normal maintenance tasks (e.g., greasing, fluid level checks, etc.) that should be defined through the MSG-3 analysis process. Also, this process is not intended to establish CMRs for the purpose of providing supplemental margins of safety for concerns arising late in the type design approval process. Such concerns should be resolved by appropriate means, which are unlikely to include CMRs not established via normal safety analyses.

5.6 CMRs should not be used as a replacement for required structural inspection programs that are developed by the TC applicant to meet the inspection requirements for damage tolerance, as required by § 25.571 and Appendix H to part 25, H25.4 (Airworthiness Limitations section).

5.7 CMRs should not be used as a replacement for the airworthiness limitations for the Electrical Wiring Interconnect System (EWIS) and fuel tanks. They are defined and managed under specific certification (§ 26.11 and §§ 25.1701 through 25.1733) and operation (14 CFR Part 121.1111, and § 129.111) requirements.

6 DEFINITIONS.

The following terms apply to the system design and analysis requirements of § 25.1309(b) and (c), and to the guidance material provided in this AC. For a complete definition of these terms, refer to the applicable regulations or § 25.4 and their respective guidance materials.

6.1 Candidate Certification Maintenance Requirement (CCMR).

The maintenance tasks derived from safety analysis that are candidates for selection as CMR. The tasks are intended to detect significant latent failures (SLF) and impending failures due to wear out.

6.2 **Certification Maintenance Requirement (CMR).**

Per 14 CFR 25.4(a)(1), a CMR is a required scheduled inspection or maintenance task established during the design certification of the transport category airplane systems as an airworthiness limitation of the type certificate (TC) or supplemental type certificate (STC).

Note: The CMRs are a subset of the Instructions for Continued Airworthiness (ICA) identified during the certification process.

6.3 **Compatible MRBR Task.**

An MRBR task whose intent satisfies the candidate certification maintenance requirement (CCMR) task intent, and whose interval is equal to or lower than the interval that a CMR would require. **Failure Effect and Failure Effect Category (FEC).**

A FEC is an MRBR task interval optimization based on principles that reflect the criticality of airplane systems components identified during MSG-3 analysis. Failure effect is the result of a functional failure.

Note: Failure effect category (FEC) terminology has its origins in the Airlines for America (A4A) Maintenance Steering Group 3 (MSG-3) document. An FEC is an analytical statement of what is the result of a functional failure. FEC 8 for latent failure or FEC 5 task for evident failure may be used for compatibility MRBR task considerations. Refer to AC 121-22D.

6.4 **Event.**

Refer to AC 25.1309-1B.

6.5 **External Event**

Refer to AC 25.1309-1B.

6.6 **Failure.**

Refer to AC 25.1309-1B.

6.7 **Failure Condition.**

Refer to AC 25.1309-1B.

6.7.1 Major Failure Condition.

Refer to § 25.4.

6.7.2 Hazardous Failure Condition.

Refer to § 25.4.

6.7.3 Catastrophic Failure Condition.

Refer to § 25.4.

6.8 **Quantitative Analytical Process.**
Refer to AC 25.1309-1B.

6.9 **Significant Latent Failure.**
A failure is latent until it is made known to the flight crew or maintenance personnel. Per 14 CFR 25.4(a)(2), a significant latent failure is a latent failure that, in combination with one or more specific failures or events, would result in a hazardous or catastrophic failure condition.

6.10 **Task.**
An action or set of actions of what is set to be accomplished by a procedure. (Example: maintenance or operational checks which either restores or maintains or determines the condition of an item).

6.11 **Wear Out (CMR Component).**
A condition where a component has worn beyond a pre-determined limit or pass/fail criterion

7 SYSTEM SAFETY ASSESSMENT (SSA).

7.1 Section 25.1309(b) specifies required safety objectives in qualitative terms. To show compliance with this requirement, applicants may conduct a safety assessment found in AC 25.1309-1B or later revision. AC 25.1309-1B references SAE ARP4761. The safety assessment techniques described in SAE ARP4761, Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment, are considered acceptable. Applicants may use SAE ARP4761 techniques, along with service experience data of similar, previously approved systems, to perform thorough qualitative and quantitative analyses.

7.2 The safety assessment techniques in SAE ARP4761 use a methodical step-by-step approach to analyses to estimate quantitative probabilities, and the development of related criteria based on in-service data caused or contributed to by failures. These criteria, expressed as numerical probability ranges associated with the terms used in § 25.1309(b), became commonly accepted for evaluating the quantitative analyses that are used to support experienced engineering and operational judgment and to supplement qualitative analyses and test data.

8 DESIGN CONSIDERATIONS RELATED TO SIGNIFICANT LATENT FAILURES

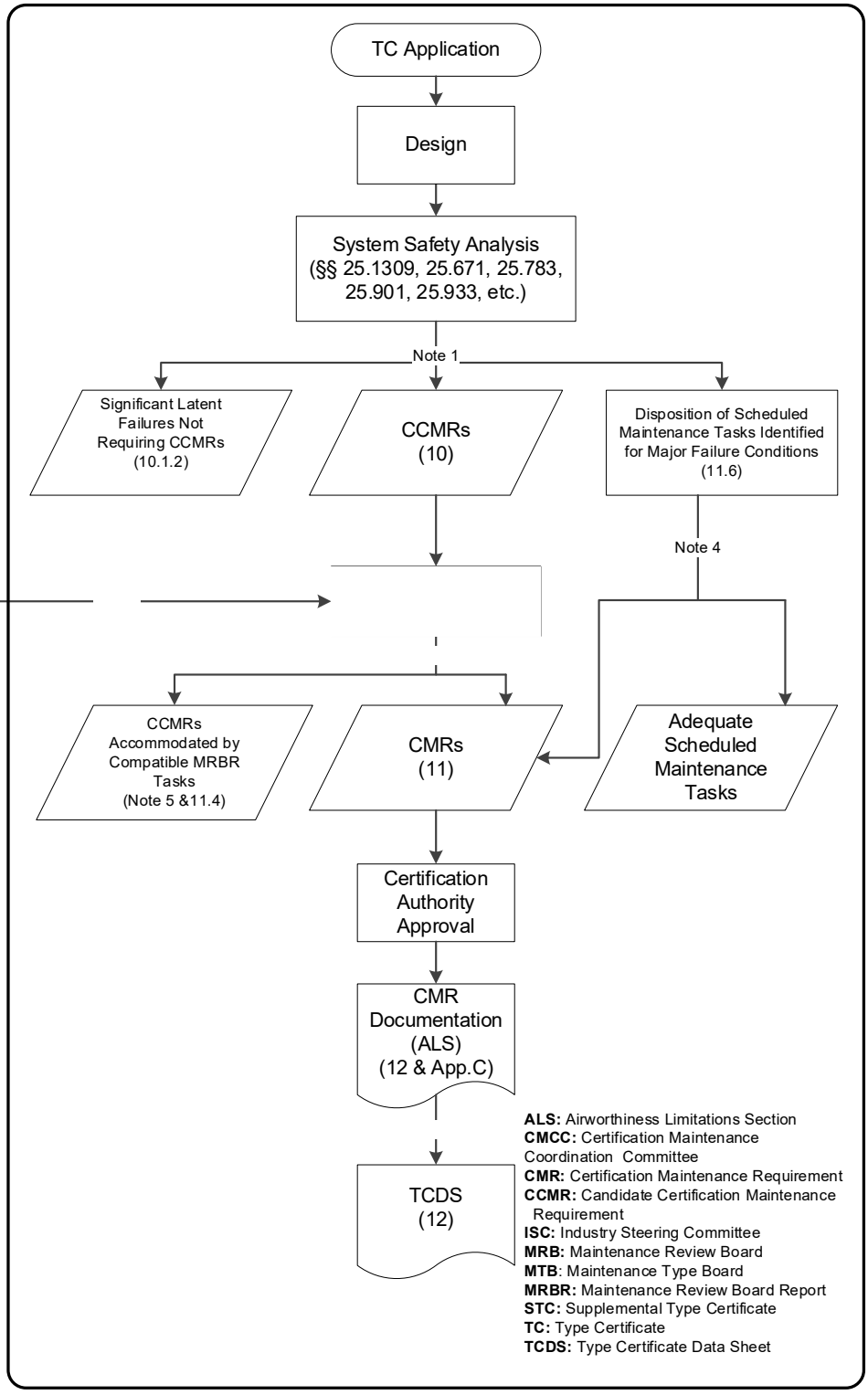
The applicant may use engineering judgment when determining whether failure monitoring and indication systems will be used to detect SLFs. Reliable failure monitoring and indication should maximize the probability of detecting and indicating genuine failures while minimizing the probability of falsely detecting and indicating nonexistent failures. Comparison with similar, previously approved systems is sometimes helpful. Appendix A of this AC outlines design considerations that should

be followed in any decision to minimize the number of SLFs. For specific showings of compliance, you may refer to Failure Conditions involving Significant Failures section 5.3.6 in AC 25.1309-1B for specific showing of compliance to § 25.1309(b)(4) and (b)(5).

9 OVERVIEW OF THE CMR DEVELOPMENT PROCESS

Figure 1 below shows the CMR development process. The details of the process that may be followed in defining, documenting, and handling CMRs are provided in the following sections or paragraphs below.

Figure 1. CMR Development Process



Note 1: As part of the SSA acceptance, the CCMRs should be agreed upon by the FAA.

Note 2: The disposition activity involves the TC/STC holder, FAA, and an optional advisory committee (e.g., CMCC). The disposition of each CCMR and the means in place to ensure that SSA assumptions are protected in service should be accepted by the FAA.

Note 3: Discussion and feedback with the ISC in order to revise, if justified, the MSG-3 analyses and the associated MRBR tasks intents/intervals.

Note 4: Where the SSA identifies the need for a scheduled maintenance task be used to detect a latent failure that would, in combination with one specific failure or event, lead to a major failure condition, such task should be assigned a CMR designation. However, the CMR designation may not be required if there is an equivalent task defined in the ICA derived by other methods than those of the CMR method as described in this AC

Note 5: ISC/MRB manages the task from this point forward

10 IDENTIFICATION OF CANDIDATE CMRS (CCMRS)

10.1 Tasks that are candidates for selection as CMRs usually come from system safety analyses (e.g., SSAs) that establish whether there is a need for tasks to be carried out periodically to comply with § 25.1309, and other requirements requiring this type of analysis (such as §§ 25.671, 25.783, 25.901, and 25.933). The SSA process should address all SLFs as per § 25.1309(b)(4) and (b)(5). In addition, the SSA process should identify CCMRs, the maintenance tasks intended to detect the presence of and thereby limit the exposure time to SLFs. CCMRs may also be identified for tasks that inspect for impending failures due to wear out.

Note: A wear-out related failure can be evident (for example, it causes a mechanism to jam) or it can be latent (for example, a secondary load path is worn out, but it has no immediate effects by itself).

10.1.1 The SSA process should identify a CCMR for each SLF unless otherwise justified per paragraphs 10.1.2 or 10.2. For failure conditions that contain multiple SLFs that are covered by the same CCMR, or where a single MRBR task is identified to cover multiple CCMRs in the same failure condition, the multiple latent failures may be treated as a single SLF. If this results in the equivalent of a catastrophic dual failure, where one failure is latent, then CCMR should be dispositioned as a CMR designation as described in section 11 of this AC.

10.1.2 Credit may be taken for self-initiated performance system checks by flight crew required to show compliance with § 25.1309(b). These checks should restore the system to its intended operational state. For flight crew actions that are not accepted as reasonably anticipated actions, these should be included in the approved airplane flight manual procedures. Reasonably anticipated flight crew actions should be sufficiently specific and detailed in the SSA for credit. Although the applicant does not need to identify CCMRs for the SLFs or wear-outs covered by these self-initiated checks, the SSA should clearly identify where such credit is taken for compliance and traceability. Similarly, credit may be taken from automatic checks (e.g., power-up built-in tests) to detect SLFs.

Note: These checks should be controlled and continuously maintained to ensure proper system function in its operational life.

10.2 For SLF assessed as latent for the life of the airplane, a failure condition might meet the quantitative probability objective, yet contain one or more components that, per the quantitative analysis, do not require periodic maintenance tasks to meet that objective (i.e., they could be left latently failed for the life of the airplane). In those situations, the applicant should include an assessment to determine whether a periodic maintenance task is nevertheless necessary considering factors that influence the outcome of the failure condition, such as the nature of the fault, field experience, or the task characteristics. Unless otherwise substantiated, a CCMR (in the context of latent for life failures) should be identified in those situations to:

- Reduce exposure to a single subsequent failure or event that would cause a hazardous or catastrophic failure condition.

- Ensure availability of emergency equipment or backup systems.
- Ensure availability of systems or equipment as required by certification or operations regulations.

10.3 As the safety analysis may be conducted as a qualitative analytical process or both qualitative analytical and quantitative analytical processes, some task intervals may still be derived in a qualitative manner (e.g., engineering judgment and service experience). As per AC 25.1309-1B, the numerical analysis supplements, but does not replace, qualitative engineering and operational judgments. Therefore, other tasks that are not derived from numerical analysis of SLFs, but are based on properly justified engineering judgment, can also be CCMRs. The justification should include the rationale leading to the identification of CCMRs, and the data and experience base supporting the rationale. A CCMR may also be derived qualitatively to meet system safety related regulations (e.g., a lubrication task intended to address flutter requirements may not be apparent from a numerical analysis).

10.4 For each identified CCMR, the applicant should indicate—

- the scheduled operational and/or maintenance task,
- the task interval (the allowable value determined in the SSA or other relevant analysis),
- the failure mode(s) to be detected, and
- the failure condition(s) of concern.

11 DISPOSITION OF CCMRS

11.1 During the CCMR review process, the applicant justifies whether CCMR should be a CMR or an MRBR task to the FAA Aircraft Certification branch. The applicant should provide sufficient information to enable an understanding of the failure conditions and the failure or event combinations that result in the designation as a CMR or as an MRBR task. All CCMRs should be evaluated in the context of the failure conditions in which they are involved, e.g., whether the latent failure is part of a dual failure, a triple failure, or a larger combination of failures. Where multiple tasks are necessary to support a failure condition, it may be possible to extend a given interval at the expense of one or more other intervals and still meet the safety objectives. The applicant may seek additional input from an advisory committee, as discussed in Appendix B of this AC. The applicant should provide to the FAA Aircraft Certification branch a rationale for the dispositions of all CCMRs. Finally, the applicant submits proposed CMRs to the FAA Aircraft Certification branch for approval. The applicant documents the rationale

used to dispose of CCMRs as part of compliance showing. After the CCMR dispositioning process, it is expected that there are no remaining CCMRs in the TCDS.

11.2 The CMR designation should be applied in the case of catastrophic dual failures where one failure is latent. The CMR designation should also be applied to tasks that address wear-out failures that are part of a catastrophic failure condition with two failures.

11.3 In triple or larger combinations of failures, the CMR designation should also be applied when a single CCMR covers multiple SLFs in a catastrophic failure condition, or where a single compatible MRBR task covers multiple CCMRs in the same catastrophic failure condition. In other words, where the applicant defines a single CCMR to cover multiple SLFs or wear-outs in support of a catastrophic failure condition, the CCMR should be converted or dispositioned, or both, as a single CMR.

11.4 The applicant can propose that the CCMR not be elevated to a CMR designation if there is a compatible MRB FEC 5 or FEC 8 task. Per AC 121-22D, FEC 5 and FEC 8 tasks cannot be deleted. A safety risk can manifest itself if the failure condition probability increases beyond the threshold required for certification (e.g., above $1x10^{-9}$/flt-hr for a catastrophic failure condition). When the applicant proposes to use an FEC 5 or FEC 8, the safety analysis should state that the compatible MRBR task interval, if escalated to the full design life of the aircraft, does not increase the safety risk. This provides assurance that the safety risk has been minimized to an acceptable level. If the FAA Aircraft Certification branch agrees with the applicant's proposal to have a compatible MRBR task accommodate a CCMR, then the industry steering committee (ISC) manages that task from this point forward. Refer to AC 121-22D and the International MRB/MTB Process Standard (IMPS) for information on the MRB process. See Appendix C for an example of acceptable means of documentation and traceability.

11.5 There are cases where the applicant cannot propose that the CCMR be dispositioned through the MSG-3 process to become an MRB FEC 5 or FEC 8 task in lieu of a CMR. Since the MSG-3 analysis used to derive MRB tasks does not consider a failure condition containing three or more failures, the CCMR should be dispositioned as a CMR in order that the risk is mitigated to an acceptable level.

11.6 Where the SSA identifies the need for a scheduled maintenance task for a major failure condition that results from a combination of a latent failure and one other failure or event, or from a qualitative analysis, a CMR should be used for that task. This CMR designation is necessary when there is no equivalent task identified in any other instructions for continued airworthiness. If a compatible MRBR task is identified, then it will be managed or controlled by the ISC process as defined in the above paragraph 11.4.

12 DOCUMENTATION AND HANDLING OF CMRS

12.1 The CMR data location should be referenced in the type certificate data sheet (TCDS). The certification maintenance requirements or CMRs as per § 25.1309(d) should be

included in the ALS of the ICA required by § 25.1529.Since CMRs are based on statistical averages and reliability rates, an "exceptional short-term extension" for CMR intervals may be made on one airplane for a specific period of time without risking safety. Any exceptional short-term extensions to CMR intervals should be defined and fully explained in the CMR document. The local regulatory authority (e.g., a Principal Maintenance Inspector) should concur with any exceptional short-term extension allowed by the CMR document before it takes place using procedures established with the local regulatory authority in the operators' manuals. The exceptional short-term extension process is applicable to CMR intervals. It should not be confused with the operator's "short term escalation" program for normal maintenance tasks described in the operators' manuals and in Order 8900.1, Flight Standards Information Management System, dated May 1, 2007.

12.1.1 The term "exceptional short-term extension" is defined as an increase in a CMR interval that may be needed to cover an uncontrollable or unexpected situation. Any allowable increase should be defined either as a percent of the normal interval, or a stated number of flight hours, flight cycles, or calendar days. If no exceptional short-term extension is to be allowed for a given CMR, this restriction should be stated in the CMR document.

12.1.2 Repeated use of exceptional short-term extensions, either on the same airplane or on similar airplanes in an operator's fleet, should not be used as a substitute for good management practices. Exceptional short-term extensions should not be used for fleet CMR interval escalation.

12.1.3 The CMR documentation should state that the FAA Aircraft Certification branch must approve, prior to its use, any desired exceptional short-term extension not explicitly listed in the CMR document.

12.1.4 The applicant should verify by test and analysis as necessary that each CMR or its equivalent (e.g., a system-initiated check, or an airplane flight manual (AFM) procedure) is effective in generating the intended system failure detection and correction. The ensuing maintenance action should result in the intended system function restoration.

13 POST-CERTIFICATION CHANGES TO CMRS

13.1 CMRs are airworthiness limitations; any change to a CMR is a change to type design. The purpose of a CMR is to limit the exposure time of a significant latent failure or a wear-out type failure. This is part of an engineering system safety analysis. Instances of a CMR task repeatedly finding that no failure has occurred may not be sufficient justification for deleting the task or increasing the time between the repetitive CMR tasks.

13.2 The introduction of a new CMR or any change to an existing CMR should be reviewed by the same entities that were involved in determining the CMRs (see sections 10 and 11, and Appendix B of this AC) at initial certification. To allow the operators to

manage their own maintenance programs, it is important that they be afforded the same opportunity for participation that they received during the original certification of the airplane.

13.2.1 New CMRs may be created by a certification project and should be documented and approved by the FAA Aircraft Certification branch. They may result from certification of design changes, regulation changes, airworthiness directive (AD) actions on similar systems or airplanes, awareness of additional hazardous or catastrophic failure conditions, revised failure rates, consideration of extended service goals, etc.

13.2.2 The new CMR or changes to an existing CMR will apply to the new design only and not be retroactive to the earlier design, unless an AD mandates otherwise.

13.3 If fleet-wide data provides a sufficient basis for the relaxation of a CMR (less restrictive actions or intervals to be required), then the relief should be documented by a revision to the existing CMR document and approved by the FAA Aircraft Certification branch. In general, a CMR task change or interval escalation could only be made if world fleet service experience indicates that certain assumptions regarding component failure rates made early during the engineering analysis were too conservative, and a re-calculation of system reliability with revised failure rates of certain components reveals that the task or interval could be revised.

13.4 If the FAA determines that the requirements of an existing CMR must be more stringent (more restrictive actions or intervals), or that a new CMR is created to address an unsafe condition, then the new requirements will be mandated by an airworthiness directive (AD) and the existing CMR document will be revised to include the change.

Appendix A. Supplemental Guidance for CMR Use

A.1 The FAA requires that the manufacturer choose a system design that minimizes the number of significant latent failures, with the goal to eliminate such failures if it is practical to do so. In other words, designing out significant latent failure conditions. A practical and reliable monitoring and/or alerting system should be considered as the first means to detect the significant latent failure. If the applicant finds that the monitoring and/or alerting system is not appropriate or cannot be incorporated into the design, then using a CMR may be the best solution, provided all applicable regulations are met.

A.2 The decision to create a CMR may include a trade-off between cost, weight, or complexity in providing an alerting mechanism or device that will expose the latent failure, versus the requirement for the operator to conduct a maintenance or inspection task at fixed intervals.

A.3 The following points should be considered in any decision to create a CMR:

A.3.1 What is the magnitude of the changes to the system and/or airplane needed to add a reliable monitoring or alerting device that would expose the hidden failure? What is the tradeoff in added system complexity?

A.3.2 Is it possible to introduce a self-test on power-up? Implementing pilot-initiated checks or self-tests to minimize exposure time should be considered in lieu of scheduled maintenance tasks with long intervals.

A.3.3 Is the monitoring and alerting system reliable? False alerts should be considered, as well as unannounced and incorrect alerts.

A.3.4 Does the monitoring or alerting system itself need a CMR due to its latent failure potential?

A.3.5 Is the CMR task reasonable, considering all aspects of the failure condition that the task is intended to address?

A.3.6 How long (or short) is the CMR task interval?

A.3.7 Is the proposed CMR task labor-intensive or time-consuming? Can it be done without having to “gain access” and/or without work stands? Without test equipment? Can the CMR task be done without removing equipment from the airplane? Without having to readjust equipment? Without leak checks and/or engine runs?

A.3.8 Can a simple visual inspection be used instead of a complex one? Can a simple operational check suffice in lieu of a formal functional check against measured requirements?

A.3.9 Is there “added value” to the proposed task (i.e., will the proposed task do more harm than good if the airplane is continually inspected)?

A.3.10 Have all alternatives been evaluated?

Appendix B. Guidance for the Certification Maintenance Coordination Committee (CMCC)

B.1 The CMCC functions as an advisory committee for the applicant and proposes the disposition of CCMRs as they are presented to the committee. The FAA Aircraft Certification branch is the authority that ultimately approves CMRs as airworthiness limitations of the type certificate under 14 CFR 21.41, Type certificate.

B.2 In order to grant operators the opportunity to participate in the selection of CMRs, and to assess the CCMRs and the proposed compatible MRBR tasks and intervals in an integrated process, the applicant may convene a CMCC. This committee is composed of TC/STC holder representatives (typically maintenance, design, and safety engineering personnel), operator representatives designated by an industry steering committee (ISC) chairperson, FAA Aircraft Certification branch specialist(s), and an MRB chairperson(s). The FAA Aircraft Certification branch specialists' participation in the CMCC is necessary to provide regulatory guidance on the disposition of CCMRs. The CMCC meets as early as possible in the design phase of the airplane program, and at intervals as necessary.

B.3 The CMCC reviews the CCMRs and their purposes, failure conditions and classifications, intended tasks and their intervals, and other relevant factors. Where multiple tasks result from a quantitative analysis, it may be possible to extend a given interval at the expense of one or more other intervals, in order to optimize the required maintenance activity. Once a decision is made to create a CMR, then the CMR interval should be based solely on the results of the SSA or other relevant analysis.

B.4 The CMCC should address all CCMRs. Alternatively, the applicant may coordinate with the FAA Aircraft Certification branch to define a subset of CCMRs for the CMCC to address.

B.5 The CMCC discusses compatible tasks (if any) that the MRB generated with the MSG-3 analysis. The CMCC may select a compatible MRBR task in lieu of a CMR in accordance with the main body of this AC.

B.6 The CMCC requests the ISC to review revision proposals of MRBR tasks and/or intervals that were generated by the MSG-3 process that they become compatible to certain CCMRs. The proposed changes that the ISC accepts are reflected in the MRBR change proposal for the MRB's review and approval. If the ISC does not accept the proposed changes, the CMCC proposes CMRs due to lack of compatible MRBR tasks.

B.7 Following consideration by the ISC, the applicant creates and submits the CMRs and CCMR dispositions to the FAA Aircraft Certification branch for final review and approval.

Appendix C. Example of CMR documentation

C.1 OVERVIEW.

In reference to section 12 of this AC, this appendix provides an example of acceptable means to ensure that the periodic maintenance tasks and intervals intended by the CMRs are properly documented. This example illustrates CMRs and their respective airplane maintenance manual (AMM) task references without the compatible MRBR tasks, given that the MRB process documents and manages the latter tasks.

- Create a CMR for every identified CCMR. Compatible MRBR tasks (even if they exist) are not used in order to balance the CMR tasks.
- Include both the CMRs and associated AMM task references in the ALS or CMR document as shown in Table C-1 below.
- The CMR task and referenced AMM tasks should be identical in intent and intervals.
- The operators may take credit for satisfying the CMR by performing the referenced AMM task within the required interval.

Note: If the referenced AMM task is also used for an MRBR task, then by completing this AMM task, the operator may be able to take credit for satisfying both the CMR and the MRBR tasks simultaneously.

Table C-1. Example of documenting CMRs in the ALS or the CMR document

CMR Task Reference	CMR Interval	AMM Task Reference
CMR task #NN	NX months	AMM task #XX
CMR task #MM	MX flight hours	AMM task #YY

OMB Control Number: 2120-0746
Expiration Date:12/31/2027

Advisory Circular Feedback Form

If you find an error in this Advisory Circular, have recommendations for improving it, or have suggestions for newitems/subjects to be added, you may let us know by emailing this form to the AIR-Directives-Management-Officer at 9-AVS-AIR-Directives-Management-Officer@faa.gov or faxing it to the attention of the LOB/SO AIR-627.

Subject: AC 25-19B Date: _____

Please mark all appropriate line items:

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page be changed as follows:

☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

☐ Other comments:

☐ I would like to discuss the above. Please contact me using the information below.

Submitted by:_____ Date: _____