



Civil Aviation Safety Authority Suriname

CASAS Advisory Pamphlet

Subject: Guidance For AOC holders related to Category II/III Landing Weather Minima (Airworthiness)

CASAS ADVISORY PAMPHLET 014

Date: 13-10-2004

1. INTRODUCTION - Maintenance Program General Provisions.

As required by CARS Part 9.4.1.3, each AOC holder shall maintain the aircraft operated by her i.a.w. an approved continuous airworthiness maintenance program.

For CAT II and/or CAT III operations, the approved Maintenance Program should include any necessary provisions to address lower landing minima (LLM), or low visibility takeoff, iaw the operator's intended operations and the manufacturers recommended maintenance program. An LLM program may be an extension of a Maintenance Program or may form an integral part thereof.

For CAT II/III operations, the maintenance program shall take into account any applicable MRB requirements or equivalent requirements (e.g., AD's, mandatory service bulletins) that may relate to low visibility operations. Emphasis should be on maintaining and ensuring total system performance, accuracy, availability, reliability, and integrity for the intended low visibility operations.

2. Maintenance Program Requirements.

The maintenance program should be compatible with an operator's organization and it's ability to implement and supervise the program. Maintenance personnel should be familiar with the Operators approved program, their individual responsibilities in accomplishing that program, and availability of any resources within or outside of the maintenance organization that may be necessary to ensure program effectiveness (e.g., getting applicable information related to the manufacturer's recommended maintenance program, getting information referenced in this Advisory Pamphlet such as service bulletin information).

As noted in the introduction section of this Advisory Pamphlet, provisions for low visibility operations may be addressed as a specific program or may be integrated with the general maintenance program.

Regardless of whether the maintenance program is integrated, or is designated as a specific program for LLM, the maintenance program should at least address the following:

- (1) Maintenance procedures necessary to ensure continued airworthiness relative to low visibility operations.
- (2) A procedure to revise and update the maintenance program.
- (3) A method to identify, record, or designate personnel currently assigned responsibility in managing the program, performing the program, maintaining the program, or performing quality assurance for the program. This includes identification of any contractor or sub-contractor organizations, or where applicable, their personnel.
- (4) Verification should be made of the lower landing minima systems and configuration status for each aircraft brought into the maintenance or lower minimum program. Unless otherwise accepted by CASAS, each aircraft should meet relevant criteria specified by the applicable aircraft manufacturer or avionics manufacturer for associated systems and equipment (e.g., Valid U.S. Type Certificate (TC), appropriate Supplementary Type Certificate (STC) records and compliance, assessment of status of any engineering orders, Airworthiness Directives (AD), service bulletins or other compliance).
- (5) Identification of modifications, additions, and changes which were made to qualify aircraft systems for the intended operation or minima, if other than as specified in the AFM, TC or STC.
- (6) Identification of maintenance requirements and log entries necessary to change minima status.
- (7) Any discrepancy reporting procedures that may be unique to the low visibility program. If applicable, such procedures should be compatibly described in maintenance documents and operations documents.
- (8) Procedures that identify, monitor, and report lower minimum system and component discrepancies for the purpose of quality control and analysis.
- (9) Procedures that define, monitor, and report chronic and repetitive discrepancies.
- (10) Procedures that ensure aircraft remain out of lower minimum status until successful corrective action has been verified for chronic and repetitive discrepancies.

- (11) Procedures that ensure the aircraft system status is placarded properly and clearly documented in the aircraft log book, in coordination with maintenance control, engineering, flight operations, and dispatch, or equivalent.
- (12) Procedures to ensure the downgrade of an aircraft low visibility capability status, if applicable, when maintenance has been performed by persons other than those trained, qualified, or authorized to use or approve procedures related to low visibility operations.
- (13) Procedures for periodic maintenance of systems ground check, and systems flight check, as applicable. For example, following a heavy maintenance, suitable checks may need to be performed prior to return to service.
- (14) Provisions for an aircraft to remain in a specific low visibility capability status (e.g., Category 11, FailOperational, Fail Passive) or other designated operational status used by the operator.
- (15) Provision should be made for periodic operational sampling of suitable performance. Typically, at least one satisfactory approach should have been accomplished within a specified period approved for that operator, unless a satisfactory systems ground check has been accomplished. A recording procedure for both satisfactory and unsatisfactory results should be included. Fleet sampling is not typically acceptable in lieu of specific aircraft assessment. Typically at least one satisfactory low visibility system operational use, or a satisfactory systems ground check, should be accomplished within 6 months, or within a period as specified by the aircraft or avionics manufacturer for an aircraft to remain in Category 11 status.

NOTE: Approved Maintenance programs meeting requirements for Category III operations are typically also considered acceptable for Category II. Aircraft low visibility systems status, however, must be clearly identified for pilots, maintenance, and dispatch, when combined programs are used.

3. Maintenance Personnel Training Requirements.

- a. Maintenance personnel should be knowledgeable regarding the information contained in this Advisory Pamphlet and CASAS related to any significant aspects of LLM that may pertain to maintenance. Operator and contract maintenance personnel including mechanics, maintenance controllers, avionics technicians, personnel performing maintenance inspection or quality assurance, or other engineering personnel if applicable, should receive initial and recurrent training as necessary for an effective program. The training curriculum should include specific aircraft systems and operator policies and procedures applicable to low visibility operations. Recurrent training should typically be accomplished at least annually, or when a person has not been involved in the maintenance of the

specified aircraft or systems for an extended period (e.g., greater than 6 months). Training may lead to a certification or qualification (e.g., for lower landing minima "LLM") if the operator so designates such qualification in that operator's approved program.

b. The training should at least include, as applicable:

(1) An initial and recurrent training program for appropriate operator and contract personnel. Personnel considered to be included are maintenance personnel, quality and reliability groups, maintenance control, and incoming inspection and stores, or equivalent organizations. Training should include both classroom and at least some "hands-on" aircraft training for those personnel who are assigned aircraft maintenance duties. Otherwise, training may be performed in a classroom, by computer based training, in simulators, in an airplane or in any other effective combination of the above consistent with the approved program, and considered acceptable to

CASAS.

(2) Subject areas for training should include: Operational concepts, aircraft types and systems affected, aircraft variants and differences where applicable, procedures to be used, manual or technical reference availability and use, processes, tools, or test equipment to be used, quality control, methods for testing and return to service, signoffs required, proper Minimum Equipment List (MEL) application, general information about where to get technical assistance as necessary, necessary coordination with other parts of the operator's organization (e.g., flight operations, dispatch), and any other maintenance program requirements unique to the operator or the aircraft types or variants flown (e.g., human factors considerations, problem reporting).

(3) Procedures for the use of outside vendors or vendor's parts that ensures compatibility to program requirements and for establishing measures to control and account for parts overall quality assurance.

(4) Procedures to ensure tracking and control of components that are "swapped" between systems for trouble shooting when systems discrepancies can not be duplicated. These procedures should provide for total system testing and/or removal of aircraft from lower minimum status.

(5) Procedures to assess, track, and control the accomplishment of changes to components or systems pertinent to low visibility operations (e.g., ADs, service bulletins, engineering orders, CARS requirements).

(6) Procedures to record and report lower minimum operation(s) that are discontinued/interrupted because of system(s) malfunction.

(7) Procedures to install, evaluate, control, and test system and component software changes, updates, or periodic updates.

(8) Procedures related to the minimum equipment list (MEL) remarks section

use, which identify low visibility-related systems and components, specifying limitations, upgrading, and downgrading.

- (9) Procedures for identifying and addressing performance assurance for any necessary low visibility-related components and systems, such as for use of "built in test" features, for required inspection items, and for providing quality assurance, whether performed in-house or by contract vendors.

4. Test Equipment/Calibration Standards.

Test equipment may require periodic re-evaluation to ensure it has the required accuracy and reliability to return systems and components to service following maintenance. A listing of primary and secondary standards used to maintain test equipment that relate to low visibility operations should be maintained. It is the operator's responsibility to ensure these standards are adhered to by contract maintenance organizations. Traceability to a national standard or the manufacturer's calibration standards should be maintained.

5. Return To Service Procedures.

- a. Procedures should be included to upgrade or downgrade system status concerning low visibility operations capability. The method for controlling operational status of the aircraft should ensure that flightcrews, maintenance and inspection departments, dispatch, and other administrative personnel as necessary are appropriately aware of aircraft and system status.
- b. The appropriate level of testing should be specified for each component or system. The manufacturer's recommended maintenance program or maintenance instructions should be considered when determining the role built-in-test-equipment (BITE) should play for return to service (RTS) procedures, or for use as a method for low visibility status upgrade or downgrade.
- c. Contract facilities or personnel should follow the operator's approved maintenance program to approve an aircraft for return to service. The operator is responsible for ensuring that contract organizations and personnel are appropriately trained, qualified, and authorized.

6. Periodic Aircraft System Evaluations.

- a. The operator should provide a method to continuously assess or periodically evaluate aircraft system performance to ensure satisfactory operation for those systems applicable to Category II/III operations. An acceptable method for assuring satisfactory performance of a low visibility flight guidance system (e.g., autoland or HUD) is to periodically use the system and note satisfactory performance. A reliable record such as a logbook entry or computer ACARS

record showing satisfactory performance within the previous 6 months for Category II operations is typically an acceptable method for assuring satisfactory system operation.

b. Periodic flight guidance system/autoland system checks should be conducted IAW procedures recommended by the airframe or avionics manufacturer, or by an alternate procedure approved by the CASAS. For periodic assessment, a record should be established to show when and where the flight guidance/autoland system was satisfactorily used, and if performance was not satisfactory, to describe any remedial action taken.

c. Use of the flight guidance/automatic landing system should be encouraged to assist in maintaining its availability and reliability.

7. Reliability Reporting And Quality Control.

i. Reliability Reporting - Category I. No special "Reliability Reporting or Quality Control" requirements are applicable to Category 1.

ii. Reliability Reporting - Category II. For a period of 1 year after an applicant has been authorized for Category II, a monthly summary should be submitted to CASAS.

The following information should be reported:

- a. The total number of approaches tracked, the number of satisfactory approaches tracked, by aircraft/system type, and visibility (RVR), if known or recorded.
- b. The total number of unsatisfactory approaches, and reasons for unsatisfactory performance, if known, listed by appropriate category (e.g., poor system performance, aircraft equipment problem/failure; ground facility problem, ATS handling, lack of critical area protection, or other).
- c. The total number of unscheduled removals of components of the related avionics systems.
- d. Reporting after the initial period should be IAW the Operators established reliability and reporting requirements.

8. Configuration Control/System Modifications.

The operator should ensure that any modification to systems and components approved for low visibility operations are not adversely affected when incorporating software changes, service bulletins, hardware additions, or modifications. Any changes to system components should be consistent with the aircraft manufacturer's, avionics manufacturer's, industry, or CASAS accepted criteria or processes.

9. Records.

a. The operator should keep suitable records (e.g., both the operator's own records and access to records of any applicable contract maintenance organization). This is to ensure that both the operator and CASAS can determine the appropriate airworthiness configuration and status of each aircraft intended for Category II/III operations.

b. Contract maintenance organizations should have appropriate records and instructions for coordination of records with the operator.
