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1. PURPOSE

The purpose of this Advisory Circular is to provide instructions for the reporting of faults, defects and malfunctions.

2. LEGAL AUTHORITY

This Advisory Circular is issued under the authority of the following legislation:

- (1) CIVIL AVIATION PROCLAMATION NO. 616/2008.
- (2) ECAA Regulation 2013.

3. APPLICABILITY

This Advisory Circular applies to owners, operators and persons maintaining aircraft registered in Ethiopia.

4. REFERENCE


- (1) ECAA Regulation 2013
- (2) AIRWORTHINESS INSPECTOR HAND BOOK
ICAO Annex 8, 4.2.5, ICAO Doc 9389 Attach 4a
ICAO Annex 6, Part I, 11.4
ECAA Form: AWS018

5. DESCRIPTION

5.1 DEFINITIONS

- A. Major Defects in relation to an aircraft, means a defect of such a kind that it may affect the safety of the aircraft or cause the aircraft to become a danger to person or property.
- B. Failure means the lack of expected or satisfactory performance. (Example: the overloading or overstraining of a structure to such an extent that it can no longer perform its required function).
- C. Malfunction means when a part of an aircraft, aircraft engine, propeller, system or component fails to operate in the manner for which it was designed.
- D. Defect means an imperfection that impairs the structure, composition or function of an object or system.

5.2 BACKGROUND

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A. The aim of the defect reporting program is to:


- (1) Permit timely airworthiness control action in the Ethiopia aircraft fleet;
- (2) Assist in long term improvement in design, manufacturing and maintenance standards; and
- (3) Permit the assessment of risk levels in the Ethiopia aircraft fleet.

5.3 REPORTABLE DEFECTS

- A. ECAR Part 5 requires the mandatory reporting of items listed in Appendix A by AOC Holders to the ECAA 3 days after determining that the failure, malfunction or defect require to be reported.
- B. ECAR Part 5 Requires the mandatory reporting of any identified condition that could present a serious hazard to the aircraft.
- C. ECAR Part 5 requires procedures for the reporting of failures, malfunctions, and defects in accordance with ECAR Part 5, to the Authority, State of Registry and the State of Design within 72 hours of discovery.
- D. The AOC / AMO holder's manual shall have a system that tracks and evaluates, on a continuing basis, faults, defects, and malfunctions that are required to be reported.
- E. In addition, CVCAR 9.D.120 (a) (3) requires immediate notification to the authority by telephone or fax and to the organization responsible for the type design of that aircraft reports that concern the following:
 - (1) Primary structural failure,
 - (2) Control system failure,
 - (3) Fire in the aircraft,
 - (4) Engine structure failure, or
 - (5) Any other condition considered an imminent hazard to safety.
- F. The telephone or fax report must follow the format of the malfunction or defect report form and being of an alert nature, must contain the following information when available and relevant:
 - (1) Aircraft owner's name and address;
 - (2) Whether it is accident or incident;
 - (3) Related service bulletins, service letters, airworthiness directives; and
 - (4) Disposition of the defective parts.
- G. The information contained in the telephone/fax report must be entered on the malfunction or defect report form and submitted in the normal manner to the Authority and the organization responsible for the type design of that aircraft as soon as possible after the telephone or fax submission but no later than within 72 hours of discovery.

5.4 DUTY TO REPORT

- A. All faults defects and malfunction in which flight safety was endangered or may have been endangered shall be reported. If it is unclear whether the incident needs to be reported, a report shall always be filed. Any report submitted within the air operator's internal quality or safety management

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system will not remove the obligation to file a report in accordance with this guidance. Where the air operator knows about an incident which must be reported in accordance with this guidance, and it is not certain whether a report has already been filed, the air operator shall submit such a report to the Ethiopian Civil Aviation Authority without delay.

B. The regulations stipulate that those who operate and maintain aircraft registered in Ethiopia must advise the Authority, by means of a defect report, of the existence of a malfunction, failure, or defect related to the aircraft, engine, system or components thereof.

C. The authority requires a report for each malfunction, failure, or defect that occurs under the reportable categories. This includes any such failure that occurs subsequent to a similar failure previously reported.


D. Reporting in accordance with this guidance will not remove the reporter's and operator's obligation to take any necessary corrective action to prevent similar incidents from recurring. Wherever possible, any other persons involved in the incident shall be notified of the intention to file a report.

E. The obligation to report applies to the following:

- (1) Pilot-in-command, aircraft operator and aircraft possessor;
- (2) Holder of any licence or approval for aviation operations;
- (3) Anyone who carries out duties for which permission to act as an air traffic controller or flight information services officer is required;
- (4) Anyone who performs other flight safety-related duties, is employed by an aviation operator, has been appointed as nominated post holder or works in airport administrative or management duties;
- (5) Anyone who carries out aircraft ground handling duties, including refuelling, servicing, Load sheet preparation, loading, de-icing and towing;
- (6) Anyone who carries out duties related to planning, manufacture, maintenance or modification of an aircraft or aircraft component;
- (7) Anyone who signs airworthiness review certificates or maintenance release certificates for aircraft or aircraft components;
- (8) Anyone who carries out duties related to installation, modification, maintenance, repair, overhaul, calibration or inspection of aircraft navigational aids;
- (9) Anyone performing other comparable duties.

5.5 REPORTING GUIDELINES

A. To assist in reporting faults, defects and malfunctions, the authority has produced a fault, malfunction or defect report (ECAA Form AWS018). This form provides a standardized format which facilitates the submission of complete data and reduces the time and cost associated with

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processing the reports. All owners, operators and persons required to submit a report should make the report using the ECAA Form AWS018 provided in Appendix B in accordance with instructions for completing the form.

B. However operators are not bound to any specific reporting format as long as the following information is included:

(1) Aircraft type and registration (including engine type); where defect detected (phase of operation or maintenance); date of occurrence; identification of part and system involved by its make, serial number and part number; total flight time since new and flight time since last fitted; flight time since the last inspection of defective part; total number of flights since new if defect is in a primary structural component; apparent or actual cause of defect; details of damage which indicate the pattern or sequence of failure; action taken to preclude recurrence; brief narrative summary to supply any other pertinent data.

C. Details of the defective part(s) (such as the part's name, number and its total time in service etc.) are important for the purpose of maintaining an accurate database.

D. When reporting a defect, you should provide as much descriptive information as possible on the cause of the problem. Any attachment, such as photographs and sketches of defective parts, are also appreciated. However, you should not submit any physical parts to the Authority.


E. A faults, defects and malfunctions report must be forwarded to the Authority within 3 working days of the discovery of the malfunction, failure, or defect.

E. A defect report should be submitted within the time required by the regulations. However, when all of the required information is not available; or cause of the occurrence cannot be determined due to lack of overhaul/bench check facility within the required time for submitting the report, the submitter should indicate on the defect report that the report is open and a supplementary report shall be submitted detailing the missing data and the action contemplated to prevent recurrence of the defect.

G. The details on ECAA Form AWS018 may be entered by either machine/computer printing or by hand. A duly completed form can be submitted via email or by fax to the Authority.

5.6 DEFECT INVESTIGATION

A. The purpose of investigation is to determine the circumstances and cause of the occurrence/defect with a view to avoid their recurrence, thus raising the standard of airworthiness and enhancing the level of safety of operations. It is not the purpose to apportion blame liability. However, if it is determined during investigation that the occurrence/defect was caused by sheer careless or

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casual attitude or due to willful negligence of personnel, disciplinary action against the erring employees taking into consideration their past performance may be taken in consultation with the AOC/AMO holder.

- B. The operator or the maintenance organization where the occurrence/defect has taken place shall investigate it to determine its cause and take necessary action to prevent recurrence. The result of the investigation of the occurrence/defect shall be reported to the authority.
- C. Defective aircraft components and equipment; which are subject to the report may be required to be available for investigation by officers of the authority. Any such component or equipment removed from an aircraft shall not be dispatched from Ethiopia; nor have any work commenced on them if it would impede any investigation, without the prior approval of the authority.
- D. Depending upon the results of the preliminary investigation, the authority may require the operator or maintenance organization to conduct further investigation, at a place where the requisite facilities for testing/overhaul exist, including inspection for similar defects on other aircraft, components in the fleet.
- E. The AOC/AMO holders shall make a periodic review of all the defects reported by the flight crew including those found during maintenance to assess the adequacy and effectiveness of related rectification and take appropriate remedial measures wherever necessary.


5.7 PRESERVATION OF FLIGHT DATA RECORDER/COCKPIT INFORMATION AND OTHER RECORDED VOICE RECORDER

- A. The operator of an aircraft shall, if he or she has reason to believe that a report has been or will be made in pursuance of this requirement, preserve any data from a flight data recorder or a cockpit voice recorder relevant to the reportable occurrence for fourteen days from the date of which a report of that occurrence is made to the authority or for such longer period as the authority may in particular case direct.
- B. The records associated with the defects and rectification action shall be preserved for a period of two years or such longer periods as the authority requires and may be produced to him or any authorized person for scrutiny at the same time of renewal of Certificate of Airworthiness of an aircraft.

5.8 REPORT TO THE STATE OF MANUFACTURER AND TO THE STATE OF DESIGN

- A. The Inspectorate will evaluate the reported information. If evaluation indicates a serious airworthiness problem, the inspector should immediately contact the appropriate country of registry or design's office responsible for the certification of the aircraft, engine, propeller or component recommending they review the information with a view toward issuing;

(1) Airworthiness Directive;

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- (2) Product modification;
- (3) Revised inspection technique or
- (4) Conduct a safety investigation.

5.9 PROCEDURES FOR REPORTING

A. Operator’s manual must contains the following information:


- (1) Responsibilities and authority for collecting and reporting SDR.
- (2) The procedures must include the elements and the reporting requirement of paragraph 5.5 Subparagraphs C. e D.
- (3) Procedures for providing copies of the SRD to authority and to the organization responsible for the type design of the aircraft.
- (4) The procedures for meeting specific requirements of ECAR Part 5 must be made a part of the owner operators required maintenance control manual. This requirement cannot be transferred to an Approved Maintenance Organization; the owner or operator must make the report.
- (5) All owners, operators and other persons required to submit a report will make the report using the ECAA Form AWS018. AOC holders should place this form along with instructions for filling out and submitting it in a timely manner in their Maintenance Control Manual.



APPENDIX A


EXAMPLES OF FAILURES, MALFUNCTIONS, AND DEFECTS

Listed below are some representative examples of failures, malfunctions and defects. The list is not

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exhaustive and there may be other faults, defects and malfunctions that can be considered. If you have any doubts about whether the defect is in fact a major defect, seek advice from ECAA:

1. Fires during flight and whether the related fire-warning system properly operated;
2. Fires during flight not protected by a related fire-warning system;
3. False fire warning during flight;
4. An engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment, or components;
5. An aircraft component that causes accumulation or circulation of smoke, vapour, or toxic or noxious fumes in the crew compartment or passenger cabin during flight;
6. Engine shutdown during flight because of flameout;
7. Engine shutdown during flight when external damage to the engine or aircraft structure occurs;
8. Engine shutdown during flight due to foreign object ingestion or icing;
9. Shutdown during flight of more than one engine;
10. A propeller feathering system or ability of the system to control over speed during flight;
11. A fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight;
12. An unintended landing gear extension or retraction, or opening or closing of landing gear doors during flight;
13. Brake system components that result in loss of brake actuating force when the aircraft is in motion on the ground;
14. Aircraft structure damage that requires major repair;
15. Cracks, permanent deformation, or corrosion of aircraft structure, if more than the maximum acceptable to the manufacturer or the Authority;
16. Failure or malfunction of any flight control system, flap, slat or spoiler;
17. Any excessive unscheduled removals of essential equipment on account of defects;
18. Aircraft components or systems malfunctions that result in taking emergency actions during flight (except action to shut down an engine);
19. Emergency evacuation systems or components including all exit doors, passenger emergency evacuating lighting systems, or evacuation equipment that are found defective, or that fail to perform the intended functions during an actual emergency or during training, testing, maintenance, demonstration, or inadvertent deployments;
20. Each interruption to a flight, unscheduled change of aircraft en route, or unscheduled stop or diversion from a route, caused by known or suspected technical difficulties or malfunctions;
21. Any abnormal vibration or buffeting caused by a structural or system malfunction, defect, or failure;
22. A failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft;
23. The number of engines removed prematurely because of malfunction, failure or defect, listed by make and model and the aircraft type in which it was installed; or
24. The number of propeller featherings in flight, listed by type of propeller and engine and aircraft

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on which it was installed.

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SERVICE DIFFICULTY REPORT (SDR)

ECAA FORM: AWS018

1. Registration Mark	2. Civil Aviation Authority Aircraft Registration and Airworthiness Certification Directorate Tele:+251116650224 Fax:+251116650281 E-mail: ecaa.airworthiness@ethionet.et			3. Date Of Occurrence	5. Location
				4. Date Submitted	From To
6. Aircraft	Make	Model	Serial No.	7. Comments:	
8. Engine	Make	Model	Serial No.		
	TSN	CSN	SSV		
9. Auxiliary Power Unit	Make	Model	Serial No.		
	TSO	Time Since Last Inspection		11. Correction Action(use reverse side as required)	
12. System/Component(assembly that includes part)				13. Open <input type="checkbox"/> Closed <input type="checkbox"/>	
Name	Make	Model	Serial No	19. Submitted by	

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14. Specific Part(of component)causing trouble				Organization
Name	MNF. Part No		Part/defect Location	
15. ATA Code	16 Part TT	17. Part TSO	18. Part Condition	

20. Phase of operation Ground Taxi Take-off Climb Cruise Landing

Note: a. Prompt notification by telephone or telex is required. This from should be filled with in 72 hours of the occurrence and be submitted to CAA
b. Failure on ETOPS Significant items should be evaluated and cleared before ETOPS operation is commenced and Should Not be left open.

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