CAR Section 8 Series S Part I – Requirements for Extended Diversion Time Operations (EDTO) for Commercial Air Transport is proposed to be amended. The proposed amendments are shown in subsequent effected paragraphs.

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

(a) deleted text is marked with ~~strikethrough~~;

(b) new or amended text is highlighted in grey.

2.2 To be eligible for EDTO, the specified airframe/engine combination should have been certificated to the Airworthiness Standards of Transport Category aeroplanes by FAA (FAR25) of USA or EASA (CS25) or by any other regulatory authority acceptable to DGCA.

~~5.1.2 **Maintenance programme**~~

~~Each operator's maintenance programme shall ensure that:~~

~~(a) the titles and numbers of all airworthiness modifications, additions and changes which were made to qualify aeroplane systems for extended diversion time operations are provided to DGCA;~~
~~(b) any changes to maintenance and training procedures, practices or limitations established in the qualification for extended diversion time operations are submitted to DGCA before such changes are adopted;~~
~~(c) a reliability monitoring and reporting programme is developed and implemented prior to approval and continued after approval;~~
~~(d) prompt implementation of required modifications and inspections which could affect propulsion system reliability is undertaken;~~
~~(e) procedures are established which prevent an aeroplane from being dispatched for an extended diversion time operation after engine shutdown or EDTO significant system failure on a previous flight until the cause of such failure has been positively identified and the necessary corrective action is completed. Confirmation that such corrective action has been effective may, in some cases, require the successful completion of a subsequent flight prior to dispatch on an extended diversion time operation;~~
~~(f) a procedure is established to ensure that the airborne equipment will continue to be maintained at the level of performance and reliability required for extended diversion time operations; and~~
~~(g) a procedure is established to minimize scheduled or unscheduled maintenance during the same maintenance visit on more than one parallel or similar EDTO significant system. Minimization can be accomplished by staggering of maintenance tasks, performing and/or supervising maintenance by a different technician, or verifying maintenance correction actions prior to the airplane entering an EDTO threshold.~~
~~(h) a procedure (through cockpit placard/external marking) is established to indicate to maintenance and flight crew EDTO status of the aeroplane.~~

~~*Note.— The maintenance considerations applicable to extended diversion time operations are provided in the* Airworthiness Manual *(Doc 9760).*~~

~~5.1.3 **Propulsion system reliability**~~

~~The operator should establish firm criteria as to what action has to be taken when adverse trend in propulsion system conditions are detected. When the propulsion system IFSD (computed on 12 month rolling average) exceeds 0.05/1000 engine hours for a 120 minute operation or exceeds 0.02/1000 engine hours for a 180 minutes operation, an immediate evaluation should be accomplished and a report on problems identified and corrective action taken must be forwarded to DGCA to consider additional corrective action or~~

~~operational restriction. Further the operator should compile necessary data on propulsion system reliability which should include;~~

~~(a) A list of all engine shutdown events both on ground and in flight (excluding normal training events) for all causes including flame out.~~
~~(b) Unscheduled engine removal rate and summary~~
~~(c) Total engine hours and cycles.~~
~~(d) Mean time between failures of propulsion system components that affect reliability.~~
~~(e) IFSD rate based on 6 and 12 months rolling average.~~
~~(f) Any other relevant data.~~

5.1.2 **Continuous Airworthiness maintenance programme (CAMP)**

In order to conduct an EDTO flight, the Operator shall develop and comply with the EDTO continuous airworthiness maintenance programme, as approved by DGCA and endorsed in Operator's operations specifications, for each aeroplane-engine combination used in EDTO. The Operator shall develop the EDTO CAMP by supplementing the manufacturer's maintenance program or the CAMP currently approved for the Operator. The EDTO CAMP shall include the following elements:

(a) ***EDTO manual.*** The Operator shall have an EDTO manual for the use by each person involved in EDTO.

(1) The manual shall -

(i) List each EDTO significant system (Refer para 5.1.3),

(ii) Refer to or include all of the EDTO maintenance elements in this section,

(iii) Refer to or include all supportive programs and procedures,

(iv) Refer to or include all duties and responsibilities, and

(v) Clearly state where referenced material is located in the Air Operator's document system.

(b) ***EDTO pre-departure service check.*** The Operator shall develop a pre-departure check tailored to their specific operation.

(1) The Operator shall complete the pre-departure service check immediately before each EDTO flight.

(2) At a minimum, this check must -

(i) Verify the condition of all EDTO Significant Systems;

(ii) Verify the overall status of the aeroplane by reviewing applicable maintenance records; and

(iii) Include an interior and exterior inspection to include a determination of engine and APU oil levels and consumption rates.

(3) An appropriately trained maintenance person, who is EDTO qualified, shall accomplish and certify by signature EDTO specific tasks. Before an EDTO flight may commence, an EDTO pre-departure service check (PDSC) Signatory Person, who has been authorized by the Operator, shall certify by signature, that the EDTO PDSC has been completed.

(4) For the purposes of this paragraph (b) only, the following definitions apply:

(i) EDTO qualified person: A person is EDTO qualified when that person satisfactorily completes the operator's EDTO training programme and is authorized by the Operator.

(ii) EDTO PDSC Signatory Person: A person is an EDTO PDSC Signatory Person when that person is EDTO qualified and that person:

(A) When certifying the completion of the EDTO PDSC:

(*1*) Works for an operator authorized to engage in Scheduled/ Non-Scheduled operation or works for a CAR 145 organisation; and

(*2*) Holds an AME licence with airframe and powerplant ratings.

(B) When certifying the completion of the EDTO PDSC for an aircraft of an Indian Air Operator outside India, the person shall have the requisite experience or training to return aircraft to service on behalf of an EDTO maintenance entity.

(iii) EDTO maintenance entity: An entity authorized to perform EDTO maintenance and complete EDTO PDSC and that entity is:

(A) a Scheduled/ non-Scheduled Air Operator;

(B) an approved/ accepted CAR 145 Organisation; or

(C) a maintenance organisation approved by local regulatory authority (in case a CAR 145 approved/ accepted organisation is not available at the location).

Note: When the maintenance is sub-contracted, the operator must ensure that;

(i) The maintenance personnel of the sub-contractor involved are qualified for EDTO.

(ii) All airworthiness flight dispatch procedures and additional maintenance requirements as identified in the Operator’s CAME is complied with.

(c) ***Limitations on dual maintenance.***

(1) Except as specified in paragraph (c)(2), the Operator may not perform scheduled or unscheduled dual maintenance during the same maintenance visit on the same or a substantially similar EDTO Significant System listed in the EDTO Manual, if the improper maintenance could result in the failure of an EDTO Significant System.

(2) In the event dual maintenance as defined in paragraph (c)(1) of this para cannot be avoided, the Operator may perform maintenance provided:

(i) The maintenance action on each affected EDTO Significant System is performed by a different AME, or

(ii) The maintenance action on each affected EDTO Significant System is performed by the same AME under the direct supervision of a second qualified individual; and

(iii) For either paragraph (c)(2)(i) or (ii) of this para, a qualified individual conducts a ground verification test and any in-flight verification test required under the program developed pursuant to paragraph (d) of this para.

(d) ***Verification programme.*** The Operator shall develop and maintain a programme for the resolution of discrepancies that will ensure the effectiveness of maintenance actions taken on EDTO Significant Systems. The verification program must identify potential problems and verify satisfactory corrective action. The verification program must include ground verification and in-flight verification policy and procedures. The Operator shall establish procedures to indicate clearly who is going to initiate the verification action and what action is necessary. The verification action may be performed on an EDTO revenue flight provided the verification action is documented as satisfactorily completed upon reaching the EDTO Entry Point.

(e) ***Task identification.*** The Operator shall identify all EDTO-specific tasks. An appropriately trained AME who is EDTO qualified must accomplish and certify by signature that the EDTO-specific task has been completed.

(f) ***Centralized maintenance control procedures.*** The operator conducting EDTO (regardless of the size of its EDTO fleet) shall have a centralized entity responsible for monitoring of the EDTO maintenance activities. The Operator shall develop and clearly define in its EDTO manual specific procedures, duties, and responsibilities for involvement of their centralized maintenance control personnel in their EDTO operation.

(g) ***Parts control program.*** The Operator shall develop an EDTO parts control program to ensure the proper identification of parts used to maintain the configuration of aeroplanes used in EDTO. The programme must include rocedures to verify that the parts installed on EDTO aeroplanes during part borrowing or pooling arrangement

as well as those parts used after repair or overhaul maintain the required EDTO configuration.

(h) ***Reliability program.*** The Operator shall have an EDTO reliability program. This programme must be event-oriented and include procedures to report the events listed below, as follows:

(1) The Operator shall report the following events within 72 hours of the occurrence to the concerned regional/sub-regional office:

(i) IFSDs, except planned IFSDs performed for flight training.

(ii) Diversions and turnbacks for failures, malfunctions, or defects associated with any aeroplane or engine system.

(iii) Uncommanded power or thrust changes or surges.

(iv) Inability to control the engine or obtain desired power or thrust.

(v) Inadvertent fuel loss or unavailability, or uncorrectable fuel imbalance in flight.

(vi) Failures, malfunctions or defects associated with EDTO Significant Systems.

(vii) Any event that would jeopardize the safe flight and landing of the airplane on an EDTO flight.

(2) The Operator shall investigate the cause of each event listed in para (h)(1) above and submit findings and a description of corrective action to the concerned regional/ sub-regional office. The report must include the information specified in CAR Section 2 Series C Part I (Appendix II). The corrective action must be acceptable to the concerned regional/ sub-regional office.

(i) ***Propulsion system monitoring.***

(1) If the IFSD rate (computed on a 12-month rolling average) for an engine installed as part of an aeroplane-engine combination exceeds the following values, the Operator shall do a comprehensive review of its operations to identify any common cause effects and systemic errors. The IFSD rate must be computed using all engines of that type in the Operator's entire fleet of aeroplanes approved for EDTO.

(i) A rate of 0.05 per 1,000 engine hours for EDTO up to and including 120 minutes.

(ii) A rate of 0.02 per 1,000 engine hours for EDTO beyond 120-minutes up to and including 180 minutes.

(2) In case the above rates are exceeded, the Operator shall carry out an immediate evaluation and submit a report to concerned regional/sub-regional office on problems identified and corrective action taken to consider additional corrective action or operational restriction. Further the operator should compile necessary data on propulsion system reliability which should include;

(f) A list of all engine shutdown events both on ground and in flight (excluding normal training events) for all causes including flame out.
(g) Unscheduled engine removal rate and summary
(h) Total engine hours and cycles.
(i) Mean time between failures of propulsion system components that affect reliability.
(j) IFSD rate based on 6 and 12 months rolling average.
(k) Any other relevant data.

(j) ***Engine condition monitoring.***

(1) The Operator shall have an engine condition monitoring program to detect deterioration at an early stage and to allow for corrective action before safe operation is affected.

(2) This program must describe the parameters to be monitored, the method of data collection, the method of analyzing data, and the process for taking corrective action.

(3) The program must ensure that engine-limit margins are maintained so that a prolonged engine-inoperative diversion may be conducted at approved power levels and in all expected environmental conditions without exceeding approved engine limits. This includes approved limits for items such as rotor speeds and exhaust gas temperatures.

(k) ***Oil-consumption monitoring.*** The Operator shall have an engine oil consumption monitoring program to ensure that there is enough oil to complete each EDTO flight. APU oil consumption must be included if an APU is required for EDTO. The operator's oil consumption limit may not exceed the manufacturer's recommendation. Monitoring must be continuous and include oil added at each EDTO departure point. The programmme must compare the amount of oil added at each EDTO departure point with the running average consumption to identify sudden increases.

(l) ***APU in-flight start program.*** If the aeroplane type certificate requires an APU but does not require the APU to run during the EDTO portion of the flight, the Operator must develop and maintain a programme acceptable to DGCA for cold soak in-flight start-and-run reliability.

(m) ***Maintenance training.*** For each aeroplane-engine combination, the Operator shall develop a maintenance training program that provides training adequate to support EDTO. It must include EDTO specific training for all persons involved in

EDTO maintenance that focuses on the special nature of EDTO. This training must be in addition to the operator's maintenance training program used to qualify individuals to perform work on specific aeroplanes and engines.

(n) ***Configuration, maintenance, and procedures (CMP) document.*** If an aeroplane-engine combination has a CMP document, the Operator must use a system that ensures compliance with the applicable FAA/EASA-approved CMP document.

(o) ***Procedural changes.*** Each substantial change to the maintenance or training procedures that were used to qualify the Operator for EDTO, must be submitted to DGCA for review. The Operator cannot implement a change until the concerned regional/ sub-regional office notifies the Operator that the same is approved/ accepted.

~~5.1.4~~ 5.1.3 EDTO significant systems