KINGDOM OF BAHRAIN
Ministry of Transportation
and Telecommunications

مملكة البحرين
وزارة المواصلات والاتصالات

CIVIL AVIATION PUBLICATION

CAP 04

EXTENDED DIVERSION TIME OPERATIONS (EDTO)

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Bahrain BCAA Publication Revisions Highlight Sheet

☒ CAP: 04 ☐ TPM: ____

The following pages have been amended to Revision 05 dated 17 September 2024.

Item	Section/Paragraph number	Page(s)	Reason
1.	Revision Highlight	1	To reflect the current revision highlights.
2.	Revision Record	iii	To indicate the record of revision.
3.	LEP	iv	To indicate the affected pages.
4.	6.2.1(e)	23	Introduction of the Application Form Number
5.	6.2.3	25	Introduction of the Application Form Number
6.	6.2.5	27	Introduction of the Application Form Number
7.	7.6	31	Introduction of the Application Form Number
8.	8.2	32	Introduction of the Application Form Number
9.	9.1	36	Introduction of the Application Form Number
10.	Appendices		Deletion of Appendix1 & 2 from the CAP. Appropriate form numbers referred at the respective places instead.

CAP 04

EXTENDED DIVERSION TIME OPERATIONS (EDTO)

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REVISION RECORD

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LIST OF EFFECTIVE PAGES

CAP 04

Appendices

1. INTRODUCTION

1.1 General

The purpose of initial ETOPS regulations were to provide very high level of safety while facilitating the use of twin engines on routes, which were previously Restricted to three or four engine aeroplanes. ETOPS has now evolved to EDTO (Extended Diversion Time Operations) to encompass two or more engine Aeroplanes and the intent of the current regulation is to avoid a diversion and if it Occurs, to ensure that the diversion is safe. EDTO may be referred as ETOPS in some documents (AFM etc).

This CAP is provided to address processes and requirements for operations beyond thestated threshold times of ANTR OPS 1.245 to an en-route alternate aerodrome for all aeroplanes with turbine engines. All extended diversion time operations require BCAA approval.

It should be understood that the threshold time established in accordance with ANTR OPS 1.245 is not an operating limit. It is a flight time to an en-route alternate aerodrome, which is established as being the EDTO threshold beyond which the operation is considered to be an extended diversion time operation and particular consideration should be given to the aeroplane capability as well as the operator's relevant operational experience, before granting an EDTO approval. BCAA consider that the maximum diversion time capability of two-engine aeroplanes not certified for EDTO is limited to 60 minutes, therefore the threshold time for such EDTO operations is set at 60 minutes.

Note: Previously issued approvals for ETOPS programs continue to be valid; requests for new EDTO authorizations or changes to existing programs will be assessed under the criteria outlined in ANTR OPS 1.246 and this CAP.

1.2 Diversion Times

Diversion times may be influenced by operator experience, propulsion system reliability and operational requirements and the content of this CAP is related to diversion time as follows:

(a) greater than 60 but less than or equal to 90 minutes;

(b) greater than 90 minutes but less than or equal to 120 minutes; and

(c) greater than 120 minutes up to a maximum of 180 minutes.

(d) greater than 180 minutes up to a maximum of 330 minutes.

2. REFERENCES

(a) ICAO Document 9760
(b) ICAO Document 10085 – EDTO Manual
(c) ICAO Annex 6, Part1
(d) ANTR-OPS 1.245 & 1.246

3. DEFINITIONS

(a) **Aerodrome**

(1) Adequate. For the purpose of this CAP, an adequate aerodrome is an aerodrome, which the operator and the Authority consider to be adequate, having regard to the performance requirements applicable at the expected landing weight or mass. In particular, it should be anticipated that at the expected time of use:

(i) The aerodrome will be available, and equipped with necessary ancillary services, such as ATC, sufficient lighting, communications, weather reporting, Nav. Aids, and emergency services. Rescue andFire Fighting Services (RFFS) equivalent to ICAO category 4 (for RFFS not located on the aerodrome; capable of meeting the aeroplanewith 30 minutes notice) or the relevant aeroplane category if lower, is acceptable for planning purposes only, when being considered as an EDTO en-route alternate; and

(ii) At least one letdown aid (ground radar would so qualify) will be available for an instrument approach.

(b) **Alternate Aerodrome.** An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met, and which is operational at the expected time of use. Alternate aerodromes include the following:

(i) Take-off alternate. An alternate aerodrome at which an aircraft would be able to land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

(ii) En-route alternate. An alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en-route.

(iii) Destination alternate. An alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing.

(c) **Extended diversion time operations (EDTO).** Any operation by an aeroplane with two or more turbine engines where the diversion time to an en-route alternate aerodrome is greater than the threshold time established by the BCAA.

(d) **EDTO Entry Point**. The first point on the route of an EDTO flight; determined using a one-engine inoperative cruise speed under standard conditions in still air that is more than the threshold from an enroute alternate airport for airplanes with two engines and more than two engines.

(e) **EDTO critical fuel**. The fuel quantity necessary to fly to an en-route alternate aerodrome considering, at the most critical point on the route, the most limiting system failure.
Note: Attachment D to ICAO Annex 6 Part I contains guidance on EDTO critical fuel scenarios.

(f) **EDTO-significant system.** An aeroplane system whose failure or degradation could adversely affect the safety particular to an EDTO flight, or whose continued functioning is specifically important to the safe flight and landing of an aeroplane during an EDTO diversion.

(g) **Isolated aerodrome**. A destination aerodrome for which there is no destination alternate aerodrome suitable for a given aeroplane type.

(h) **Maximum diversion time**. Maximum allowable range, expressed in time, from a point on a route to an en-route alternate aerodrome.

(i) **Approved One-Engine Inoperative Cruise Speed**

(1) The approved one-engine-inoperative cruise speed for the intended area of operation shall be a speed, within the certificated limits of the aeroplane, selected by the operator and approved by the BCAA.

(2) The operator shall use this speed for;

(i) establishing the outer limit of the area of operation and any dispatch limitation

(ii) calculation of single engine fuel requirements; and

(iii) establishing the level off altitude (net performance) data. This leveloff altitude (net performance) must clear any obstacle en route by margins as specified in ANTR-OPS 1.

(j) **Point of no return**. The last possible geographic point at which an aeroplane can proceed to the destination aerodrome as well as to an available en route alternate aerodrome for a given flight.

(k) **Threshold time.** The range, expressed in time, established by the State of theOperator to an en-route alternate aerodrome, whereby any time beyond requires an EDTO approval from the State of the Operator.

Note 1: The threshold time for EDTO established by BCAA, BAHRAIN is 60 minutes for two engine turbine powered aeroplanes.

(l) **Auxiliary Power Unit (APU).** A gas turbine engine intended for use as a power source for driving generators, hydraulic pumps and other aeroplane accessories,equipment and/or to provide compressed air for aeroplane pneumatic system.

If the APU fails to start in-flight on the first attempt, subsequent start attempts may be made within the limit's airframe and APU manufacture design limitation/specifications.

All occurrences of an EDTO configured APU in-flight unsuccessful start attempts (which exceed the airframe and APU manufacture design specification) have to be reported to BCAA within 72 hours. The report should include corrective actions taken and the status of the fleet.

An APU in-flight start attempt should be classified as "successful" when the APU is started within three start attempts

(m) **In - Flight Shutdown (IFSD)**. When an engine ceases to function in flight and is shutdown, whether self-induced, crew initiated or caused by some other external influence (i. e. IFSD for all cases; for example due to flameout, internal failure, crew initiated shutoff, foreign object ingestion, icing, inability to obtain and/or control desired thrust etc.).

(n) **Propulsion System**. A system consisting of power unit and all other equipment utilized to provide those functions necessary to sustain, monitor and control the power/thrust output of any one-power unit following installation on the airframe.

(o) **EDTO Configuration, Maintenance and Procedures (CMP) Standard**. The aeroplane configuration minimum requirements including any special inspection, hardware life limits, master minimum equipment list (MMEL) constraints and maintenance practices found necessary to establish the suitability of an airframe engine combination for an Extended Diversion Time Operation (EDTO).

(p) **Engine.** The basic engine assembly as supplied by the engine manufacturer.

(q) **Extended diversion range Operations.** For the purpose of this CAP, extended range operations are those flights with two or more turbine engines conducted over a route that contains a point further than one hour flying time (greater than the established threshold time) at the approved one-engine-inoperative cruise speed (under standard conditions in still air) from an adequate aerodrome.

(r) **Maintenance Personnel.** Mechanics, Licensed Ground Engineers, Maintenance Support Personnel.

4. GENERAL REQUIREMENTS FOR EXTENDED DIVERSION TIME OPERATIONS (EDTO)

4.1 Unless the operation has been specifically approved by BCAA, an aeroplane with two or more turbine engines shall not be operated on a route where the diversion time from any point on the route, calculated in ISA and still air conditions at the one-engine inoperative cruise speed for aeroplanes with two turbine engines and at the all-engine operating cruise speed for aeroplanes with more than two turbine engines, to an en-route alternate aerodrome exceeds a threshold time established for such operations by the BCAA.

Note 1: When the diversion time exceeds the threshold time, the operation is considered to be an extended diversion time operation (EDTO).

Note 2: For the purpose of EDTO, the take-off and/or destination aerodromes may be considered en-route alternate aerodromes.

4.2 Although propulsion system reliability is a critical factor, it is not the only factor which should be seriously considered in evaluating extended diversion time operation. Cargo compartment fire suppression/containment capability could be a significant factor, or operational/maintenance practices may invalidate certain determinations made during the aeroplane type design certification or the probability of system failures could be a more significant problem than the probability of propulsion system failures. Any decision relating to extended diversion time operation with two-engine aeroplanes should also consider the probability of occurrence of any conditions which would reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions.

When approving the appropriate maximum diversion time for an operator for a particular aeroplane type engaged in extended diversion time operations, BCAA shall ensure that:

(a) for all aeroplanes: the most limiting EDTO significant system time limitation, if any, indicated in the Aeroplane Flight Manual (directly or by reference) and relevant to that particular operation is not exceeded; and

(b) for aeroplanes with two turbine engines: the aeroplane is EDTO certified.

4.3 The maximum diversion time, for an operator of a particular aeroplane type engaged in extended diversion time operations shall be approved by BCAA.

Note: Guidance on the conditions to be used when converting diversion times to distances are contained in Attachment D to ICAO Annex 6 Part I.

4.4 For aeroplanes engaged in EDTO, the additional fuel required shall include the fuel necessary to comply with the EDTO critical fuel scenario as established in this CAP.

A flight shall not proceed beyond the threshold time in accordance with Para 4.1 above unless the identified en-route alternate aerodromes have been re-evaluated for availability and the most up to date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the operator's established aerodrome operating minima for the operation. If any conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action shall be determined.

4.5 BCAA shall, when approving maximum diversion times for aeroplanes with two turbine engines, ensure that the following are considered in providing the overall level of safety intended by the provisions of ICAO Annex 8:

(a) reliability of the propulsion system;

(b) airworthiness certification for EDTO of the aeroplane type; and

(c) EDTO maintenance program.

Note: The Airworthiness Manual (Doc 9760) contains guidance on the level of performance and reliability of aeroplane systems.

4.6 Human Factors, Operators should be aware of the human factor issues regarding maintenance and operations generally and must apply human factor principles specifically for EDTO‟s maintenance, dispatch and operations. System failures or malfunctions occurring during extended diversion time operation could affect flight crew workload and procedures. Since the demands on the flight crew may increase, an assessment should be made to ensure that morethan average piloting skills or crew co-ordination are not required.

4.7 SMS and Quality Involvement, the operator's Safety Management System would normally conduct the initial feasibility studies and once approved for EDTO, conduct continuing operational and maintenance assessments. The operator's Quality System must be involved in the application process andon-going assessment of EDTO operations and maintenance.

5. EDTO SPECIAL REQUIREMENTS

5.1 EDTO Significant Systems

In addition to the standard flight planning and requirements, flights undertaking EDTO operation requires a special consideration with respect to EDTO significant systems:

(a) EDTO significant systems may be the aeroplane propulsion system and any other aeroplane systems whose failure or malfunctioning could adversely affect safety particular to an EDTO flight, or whose functioning is specifically important to continued safe flight and landing during an aeroplane EDTO diversion.

(b) Many of the aeroplane systems which are essential for non-extended diversion time operations may need to be reconsidered to ensure that the redundancy level and/or reliability will be adequate to support the conduct of safe extended diversion time operations.

(c) The maximum diversion time shall not exceed the value of the EDTO significant system limitation(s), if any, for extended diversion time operations identified in the Aeroplane's Flight Manual directly or by reference, reduced with an operational safety margin specified as 15 minutes by BCAA.

(d) When planning or conducting, extended diversion time operations, an operator and pilot in command, shall ensure that:

(i) the minimum equipment list, the communications and navigation facilities, fuel and oil supply, en-route alternate aerodromes or aeroplane performance, are appropriately considered;

(ii) if an aeroplane engine shutdown, proceed to and land at the nearest (in terms of the least flying time) en-route alternate aerodrome where a safe landing can be made; and

(iii) in the event of a single or multiple failure of an EDTO significant systems or systems (excluding engine failure), proceed to and land at the nearest available en-route alternate aerodrome where a safe landing can be made unless it has been determined that no substantial degradation of safety results from any decision made to continue the planned flight.

Note: If no more than one engine is shut down for an aeroplane with more than two engines, the pilot-in-command may elect to continue beyond the nearest en-route alternate aerodrome (in terms of time) if he determines that it is safe to do so. In making this decision the pilot-in-command should consider all relevant factors.

5.2 Operational approval to conduct EDTO

While approving an operator with a particular aeroplane type for extended diversion time operations, BCAA will establish an appropriate threshold time and approve a maximum diversion time in addition to the requirements previously set forth in this CAP and ensure that:

(a) specific operational approval is granted by BCAA.

(b) the operator's past experience and compliance record is satisfactory, and the operator establishes the processes necessary for successful and reliable extended diversion time operations and shows that such processes can be successfully applied throughout such operations;

(c) the operator's procedures are acceptable based on certified aeroplane capability and adequate to address continued safe operation in the event of degraded aeroplane systems;

(d) the operator's crew training programme is adequate for the proposed operation;

(e) documentation accompanying the authorization covers all relevant aspects; And

(f) it has been shown (e.g., during the EDTO certification of the aeroplane) that the flight can continue to a safe landing under the anticipated degraded operating conditions which would arise from:

(i) the most limiting EDTO significant system time limitation, if any, for extended diversion time operations identified in the Aeroplane's Flight Manual directly or by reference; or

(ii) total loss of engine generated electric power; or

(iii) total loss of thrust from one engine; or

(iv) any other condition which BCAA considers to be equivalent in airworthiness and performance risk

6. EDTO APPROVAL CONSIDERATIONS ON AIRWORTHINESS AND OPERATIONS PERSPECTIVES

6.1 Airworthiness Consideration

6.1.1 Airframe Systems

Several airframe systems influence the safety of extended diversion time operation; therefore, the type design certification of the aeroplane should be reviewed to ensure that the design of these systems is acceptable for the safe conduct of the intended operation.

6.1.2 Propulsion Systems

To maintain a level of safety consistent with the overall safety level achieved by modern aeroplanes, it is necessary for two-engine aeroplanes used in extended diversion time operation to have an acceptably low risk of significant loss of power/thrust for all design and operation related causes.

The target IFSD rate versus diversion time used by the BCAA is in Figure 1.

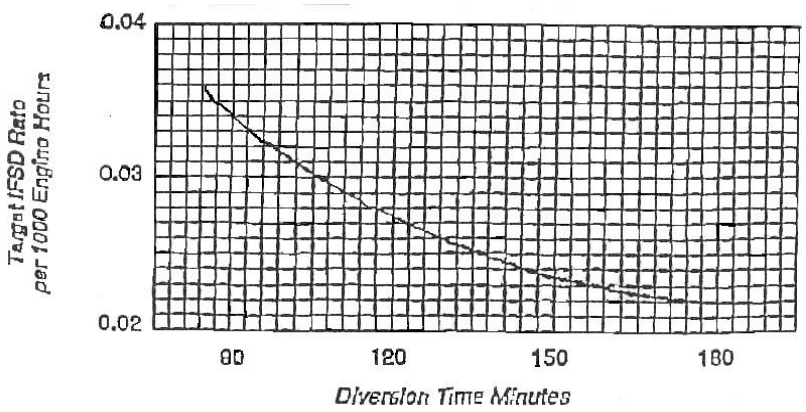

Figure 1: Target IFSD Rate versus Diversion Time

6.1.3 Propulsion System Reliability Contents

The operator should establish firm criteria as to what action must be taken when adverse trend in propulsion system conditions is detected. When the propulsion system IFSD(computed on 12 months rolling average) exceeds the target IFSD rate, an immediate evaluation should be accomplished and a report on problems identified, and corrective actiontaken must be forwarded to BCAA 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.

6.1.4 Maintenance Programme

The maintenance programme should contain the standards, guidance and direction necessary to support the intended operations. Maintenance personnel and other personnel involved should be made aware of the special nature of EDTO and have the knowledge, skills and ability to accomplish the requirements of the programme. Many airworthiness considerations for flight dispatch may have already been incorporated into approved programmes for other aeroplanes or non-EDTO aircraft/fleet, whereas the nature of EDTO necessitates a re-examination of these programmes to ensure that they are adequate for this purpose.

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 BCAA.

(b) any changes to maintenance and training procedures, practices or limitations established in the qualification for extended diversion time operations are submitted to BCAA 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).*

6.1.5 Maintenance and Reliability Programme Definition

Since the quality of maintenance and reliability programmes can have an appreciable effect on the reliability of the propulsion system and the airframe systems required for extended diversion time operation, an assessment should be made on the proposed maintenance and reliability programme's ability to maintain a satisfactory level of propulsion and airframe system reliability for the particular airframe-engine combination.

Although these considerations are normally part of the operator's continuing airworthiness programme including that of Maintenance Programme explained in Para 6.1.4, the maintenance and reliability programme may need to be supplemented in consideration of the special requirements of extended diversion time operation The following items, as part of the operator's programme must be reviewed to ensure that they are adequate for extended diversion time operations:

(a) Maintenance Procedures

After Approval of the changes in the maintenance and training procedures, any changes to maintenance and training procedures, practices, or limitations established to qualify for extended diversion time operations should be submitted to the Authority for approval at least two months before such changes may be adopted. Maintenance Procedure shall include the following but not limited to:

(i) EDTO training for maintenance personnel;

(ii) maintenance procedures to ensure the same aircraft technician does not perform maintenance on the same element of identical but separate EDTO significant systems during the same check or visit;

(iii) maintenance procedures to preclude identical action being applied to multiple similar elements in any EDTO significant system; and

(iv) parts control procedures;

(v) procedure to review due to changes to the existing standards and specification requirement to substantiate the incorporation of the CMP requirement in the aeroplanes used in EDTO.

(b) Reliability Reporting

The reliability reporting programme as supplemented and approved, should be implemented prior to, and continued after approval of extended diversion time operation.

Data from this process should result in a suitable summary of problem events, reliability trends and corrective actions and be provided regularly to the Authority and to the relevant airframe and engine manufacturers.

(c) Modification and Inspection Implementation

Approved modifications and inspections which would maintain the reliability objective for the propulsion and airframe systems as a consequence of Airworthiness Directive (AD) actions, updated instruction for continued airworthiness and revised CMP standards should be promptly implemented.

Note: In principle, the CMP does not repeat Airworthiness Directives. An operator thus needs to ensure compliance with both the applicable ADs and the CMP standards when operating EDTO flight.

Other recommendations made by the engine and airframe manufacturers should also be considered for prompt implementation. This would apply to both installed and spare parts. The EDTO operational approval of each EDTO operator will require it tokeep its EDTO fleets in conformity with the current CMP standards, considering implementation delays.

(d) Aeroplane Dispatch & Verification Procedure (Control Process)

Procedures and a centralised control process should be established which would preclude an aeroplane being released for extended diversion time operation after propulsion system shutdown or primary airframe system failure on a previous flight, or significant adverse trends in system performance, without appropriate corrective action having been taken.

Confirmation of such action as being appropriate, in some cases, may require the successful completion of one or more non-revenue or non-EDTO revenue flights (as appropriate) prior to being released on an extended diversion time operation. If such verification is to be conducted on a regular scheduled revenue flight with EDTO, then the verification of the affected system should be satisfactorily completed prior to reaching the extended diversion time entry point. The operator should establish verification flight procedures;

(e) Maintenance Programmes

The maintenance programme used for EDTO aeroplanes/EDTO intended aeroplanes, will ensure that the airframe and propulsion systems will continue to be maintained at the level of performance and reliability necessary for extended diversion time operation, including such programmes as engine condition monitoring, engine oil consumption monitoring and APU inflight start monitoring programme.

(f) Considerations affecting contracted maintenance.

Maintenance personnel involved in EDTO should be aware of any potential additional requirements of the maintenance programme associated with it and shouldbe trained accordingly. When maintenance is contracted, the operator should ensure that the maintenance and all airworthiness flight dispatch procedures are performedto the requirement as defined in the operator's MCM, and personnel are trained in accordance with its training programme.

6.1.6 Maintenance and Reliability Programme Implementation

Following a determination that the airframe systems and propulsion systems are designed to be suitable for extended diversion time operation, an in-depth review of the applicant's training programmes, operations and maintenance and reliability programmes should be carried out to show ability to achieve and maintain an acceptable level of systems reliability to safely conduct these operations. Additional modifications or maintenance actions generated by an operator or manufacturer to enhance or maintain the continued airworthinessof the aeroplane must be made through the normal approval process. The operator should thoroughly evaluate such changes to ensure that they do not adversely affect reliability or conflict with requirements for EDTO approval.

6.1.7 Approval Basis

Each applicant for extended diversion time approval should show that the particular airframe-engine combination is sufficiently reliable. Systems required for extended diversion time operation should be certified by the manufacturer to be designed to a fail-safe criteria and should be ensured by the operator to be continuously maintained and operated at levels of reliability appropriate for the intended operation.

Note: Evidence that the type design of the aeroplane is approved for extended diversion time operation is normally reflected by a statement in the Aeroplane Flight Manual (AFM) and Type Certificate Data Sheet which references the CMP standard requirements for extended diversion time operations.

Further the EDTO operator shall ensure that the Flight Manual contains atleast the following minimum information:

(a) The maximum flight time with one power–unit inoperative, for which the systems reliability has been approved in accordance with the airworthiness requirements established for EDTO;

(b) A list of additional equipment installed to meet the airworthiness requirements for EDTO.

(c) Additional performance data, including limitations, and flight procedures appropriate to EDTO.

The BCAA will only accept an application if the EDTO approval basis is reflected in the AFM or supplement, and Type Certification Data Sheet or Supplemental Type Certificate.

6.1.8 Minimum Equipment List (MEL)

The operator is required to submit its MEL, designed in accordance with the Master Minimum Equipment List (MMEL) from the State of Design appropriate to the requested level of EDTO. An operator's MEL may be more restrictive than the MMEL, considering the kind of EDTO proposed and the equipment and service problems unique to the operator. System redundancy levels appropriate to EDTO should be reflected in the MMEL.

Systems considered to have a fundamental influence on flight safety may include, but are not limited to the following:

(a) Electrical, including battery,

(b) Hydraulic,

(c) Pneumatic,

(d) Flight instrumentation,

(e) Fuel,

(f) Flight control,

(g) Ice protection,

(h) Engine start and ignition,

(i) Propulsion system instruments,

(j) Navigation and communications,

(k) Auxiliary power units,

(l) Air conditioning and pressurization,

(m) Cargo fire suppression,

(n) Emergency equipment, and

(o) Any other equipment necessary for EDTO

6.1.9 Communications Equipment (VHF/HF, Data Link, Satellite Communications)

For all routes where voice communication facilities are available, the communication equipment required by operational requirements should include at least one voice-based system. At normal conditions of propagation and normal one engine inoperative cruise altitude, reliable two-way voice communications between aeroplane and appropriate ATC unit and dispatch center over the planned route should be available.

6.1.10 Maintenance Training

The Maintenance training should focus on the special nature of EDTO. This programme should be included in the normal maintenance training and approved by BCAA. The goal of this programme is to ensure that all personnel involved in EDTO are provided with the necessary training so that the EDTO maintenance tasks are properly accomplished and to emphasise the special nature of EDTO maintenance requirements. Qualified maintenance

personnel are those who have completed the operator's extended diversion time training programme and have satisfactorily performed extended diversion time tasks under supervision, within the framework of the operator's approved procedures for Personnel Authorisation.

When maintenance is contracted the operator should ensure that the maintenance and all airworthiness flight dispatch procedures are performed to the requirement as defined in the operator's MCM, and personnel are trained in accordance with its training programme. Operators should develop and incorporate annual EDTO refresher training programmes for maintenance personnel qualified for EDTO maintenance requirements.

6.1.11 EDTO Manual

EDTO Manual should include procedures and guidelines for the maintenance program and other requirements for EDTO. In addition, all EDTO requirements, including supportive programs, procedures, duties and responsibilities, actions to be taken in case of adverse trend, IFSD rate, reliability level etc. should be identified and documented. This manual should be submitted three months in advance to BCAA before seeking approval of EDTO flight. The operator should lay special emphasis on the program described below.

The programs listed below may not require inclusion in the EDTO Manual, but this EDTO manual shall at least give reference to the existing operator's manual system covering these aspects and the operator seeking EDTO approval shall adhere to the same for a safe EDTO operation.

A. EDTO MAINTENANCE PROGRAMME

The basic maintenance programme for the aeroplane being considered for EDTO is the continuous airworthiness maintenance schedule currently approved for that operator, for the make and model airframe-engine combination. This programme should be reviewed toensure that it provides an adequate basis for development of EDTO maintenance requirements.

These should include maintenance procedures to preclude common cause of human failure without proper verification process or operational testing prior to EDTO. The maintenance system shall preclude identical action being applied to multiple similar elements in any EDTO significant system (e.g., fuel control change on both engines). For two-engine aeroplanes, the same person should not perform maintenance action on the same element of identical, but separate, maintenance significant systems during the same routine or non- routine visit. If such dual maintenance actions cannot be avoided, the State of the Operator may allow use of adequate ground tests, inspection procedures, a verification flight or other approved maintenance procedures to preclude common cause human failure modes.

(i) EDTO related tasks should be identified and included on the operator's routine work forms and related instructions.

(ii) EDTO related procedures, such as involvement of centralised maintenance control, should be clearly defined in the operator's programme.

(iii) An EDTO service check should be developed to verify that the status of the aeroplane and certain critical items are acceptable. This check should be accomplished by an authorised and trained person prior to each EDTO flight as documented in EDTO Manual / MOE and approved.

(iv) Log books should be reviewed and documented, as appropriate to ensure proper MEL procedures, deferred items and maintenance checks, and those system verification procedures have been properly performed.

B. OIL CONSUMPTION PROGRAMME

The operator's oil consumption programme should reflect the manufacturer's recommendations and be sensitive to oil consumption trends. It should consider the amount of oil added at the departing EDTO stations with reference to the running average consumption; i.e., the monitoring must be continuous up to, and including, oil added at the EDTO departure station. Oil analysis program such as routine quality control check/SOAP check if applicable to the make & model shall be included to this program. If the APU is required for EDTO operation, it should be added to the oil consumption programme.

C. ENGINE CONDITION MONITORING

This programme should describe the parameters to be monitored, method of data collection and corrective action process. The programme should reflect manufacturer's instructions and industry practice. This monitoring shall be used to detect deterioration at an early stage to allow for corrective action before safe operation is affected. The programme should ensure that engine limit margins are maintained so that a prolonged single-engine diversion may be conducted without exceeding approved engine limits (i.e., rotor speeds, exhaust gas temperature) at all approved power levels and expected environmental conditions. Engine margins preserved through this programme should account for the effects of additional engine loading demands (e.g., anti-icing, electrical, etc.) which may be required during the single-engine flight phase associated with the diversion.

D. RELIABILITY PROGRAMME

An EDTO reliability programme shall be developed or the existing reliability programme supplemented. This programme should be designed with early identification and prevention of EDTO related problems as the primary goal. The programme should be event orientated and incorporate reporting and rectification procedures for significant events detrimental to EDTO flights. This information should be readily available for use by the operator and BCAA to help establish that the reliability level is adequate, and to assess the operator's competence and capability to safely continue EDTO. The operator shall notify within **72** hours of events reportable through this programme.

An EDTO reporting programme must be established which ensures that the Operator is notified by the programme, at least monthly, of the previous month’s activities or more often if adverse trends reportable through this programme are identified.

Procedures for the reduction of the EDTO diversion time must be established and implemented if:

a) a significant event is identified on any flight, including non-EDTO flights, involving the air operator’s EDTO-certified aircraft type; or

b) an adverse trend is identified through the reliability programme; or

c) the root cause of an EDTO significant reliability issue is not identified and/or if there is no identified corrective action.

The person responsible for maintenance, who ensures that all maintenance is carried out in accordance with the Operator's Maintenance Control, must have the authority to initiate the reduction of the approved EDTO diversion time.

Where reliability data indicate that the propulsion system reliability (monitored as per the subsequent paragraphs) is no longer being met, the BCAA must be notified of the corrective measures taken. Where the "minimum criteria" are no longer being met, the air operator must reduce the EDTO diversion time to that specified level as determined by BCAA for the particular in-flight shut down (IFSD) rate noted. An IFSD could be discounted pursuant to conditions such as:

a) the IFSD is not the result of any action or inaction on the part of the air operator; or

b) the IFSD is not the result of any action or inaction on the part of the maintenance provider; or

c) the IFSD is the result of an operational incident such as a bird strike at low altitude.

When discounting of IFSD, the operator shall obtain consent from BCAA for each such discount applied. Failure of an operator to reduce the maximum diversion time when required constitutes grounds for removal of EDTO approval.

However, the IFSD rate may be affected by a failure of a specific engine airframe combination that globally reduces or removes that aeroplane from EDTO operations.

Reporting information:

(a) The items required to be reported by the operator to BCAA are as follows:

(i) in-flight shutdowns;

(ii) diversion or turn back;

(iii) un-commanded power changes or surges;

(iv) inability to control the engine or obtain desired power; and

(v) problems with systems critical to EDTO.

(b) The report should identify the following:

(i) aeroplane identification;

(ii) engine identification (make and serial number);

(iii) total time, cycles and time since last shop visit;

(iv) for systems, time since overhaul or last inspection of the defective unit;

(v) phase of flight; and

(vi) corrective action.

E. PROPULSION SYSTEM MONITORING

The operator's assessment of propulsion systems reliability for the extended diversion time fleet should be made available to the Authority (with the supporting data) on at least a monthly basis, to ensure that the approved maintenance programme continues to maintain a level of reliability necessary for extended diversion time operation. The assessment should include, as a minimum, engine hours flown in the period, in flight shut-down rate for all causes and engine removal rate, computed on a 12 month rolling average basis.

Where the combined extended diversion time fleet is part of a larger fleet of the same airframe-engine combination, data from the operator's total fleet will be acceptable. However, the reporting requirements of paragraphs 6.1.4, 6.1.5 & 6.1.11.D of this CAP must still be observed for the extended diversion time fleet. Any adverse sustained trend would require an immediate evaluation to be accomplished by the operator in consultation with the Authority. The evaluation may result in corrective action or operational restrictions being applied.

Note: Where statistical assessment alone may not be applicable, e.g., when the fleet size is small, the operator's performance will be reviewed on a case by case basis.

F. THE APU INSTALLATION

APU, if required, for EDTO, should meet all the requirements necessary to demonstrate its ability to perform the intended functions and if certain EDTO necessitate in flight start and run of the APU after prolonged cold soaking, it must be substantiated that the APU has adequate reliability for that operation.

G. VERIFICATION PROGRAMME AFTER MAINTENANCE

The operator should develop a verification programme or procedures should be established to ensure corrective action following an engine shutdown, primary system failure or adverse trends or any prescribed events which may require a verification flight or other action and establish means to assure their accomplishment. A clear description of who must initiate verification actions and the section or group responsible for the determination of what action is necessary should be identified in the programme. Primary systems or conditions requiring verification actions should be described in the operator's EDTO section of the Exposition.

H. MAINTENANCE TRAINING

EDTO manual should define the maintenance training requirement as given in Para 6.1.10 above

I. CENTRALIZED CONTROL PROCESS

The operator conducting EDTO (regardless of the size of its EDTO fleet) must have a centralized entity responsible for monitoring of the EDTO maintenance activities. The certificate holder must develop and clearly define in its EDTO maintenance documentspecific procedures, duties, and responsibilities for involvement of their centralized maintenance control personnel in their EDTO operation.

J. *SPECIFC MAINTENACE RELEASE FOR EDTO FLIGHTS*

An EDTO maintenance release statement should therefore be provided to the flight crew to confirm that:

a) the aircraft condition has been checked and confirmed to comply with the applicable EDTO dispatch requirements set forth in the company policies and applicable MEL;

b) the EDTO items of the applicable maintenance line check have been accomplished;

c) the aircraft configuration has been checked and confirmed to comply with the applicable configuration standards set forth in the EDTO CMP document (as applicable); and

d) the capability of relevant TLS(s) has been assessed.

K. EDTO PARTS CONTROL

The operator should develop a parts control programme with support from the manufacturer, that ensures the proper parts and configuration are maintained for EDTO. The programme includes verification that parts placed on an EDTO certified aeroplane during parts borrowing or pooling arrangements, as well as those parts used after repair or overhaul, maintain the necessary EDTO configuration for that aeroplane. A list of EDTO significant parts shall be established and the parts identified as EDTO significant when received and stored for use on EDTO certified aeroplanes.

6.1.12 Exposition

The operator should amend the Exposition for use by personnel involved in EDTO. This manual need not include, but should at least reference, the maintenance programme and other requirements described by this Appendix, and clearly indicate where they are located in the operator's document system. All EDTO requirements, including supportive programmes, procedures, duties, and responsibilities, should be identified and be subject to revision control.

The amendment to the Exposition should be submitted to the BCAA at least two months before implementation of EDTO flights.

6.2 Operational Consideration

6.2.1 Flight Preparation and In-flight Considerations

(a) General

The flight release considerations specified in this section are in addition to, or amplify, the requirements contained in ANTR-OPS 1 and specifically apply to extended diversion time operations. Although many of the considerations in this CAP are currently incorporated into approved programmes for other aeroplanes or route structures, the unique nature of extended diversion time operations with two-engine aeroplanes necessitates a re-examination of these operations to ensure that the Approved programmes are adequate for this purpose.

(b) Communication and Navigation Facilities

An aeroplane should not be released on an extended diversion time operation unless:

(1) Communications facilities are available to provide under normal conditions of propagation at the appropriate one-engine-inoperative cruise altitudes, reliable two-way voice communications between the aeroplane and the appropriate air traffic control and dispatch unit over the planned route of flight and the routes to any suitablealternate to be used in the event of diversion.

(2) Non-visual ground navigation aids are available and located so as to provide, taking account of the navigation equipment installed in the aeroplane, the navigation accuracy necessary for the planned route and altitude of flight, and the routes to any alternate and altitudes to be used in the event of an engine shutdown; and

(3) Visual and non-visual aids are available at the specified alternates for the anticipated types of approaches and operating minima.

(c) Fuel and Oil Supply

(1) General

An aeroplane should not be released on an extended diversion time operation unless it carries sufficient fuel and oil to meet the requirements of ANTR-OPS 1 and any additional fuel that may be determined in accordance with sub-paragraph (2) below – Critical Fuel Reserves. In computing fuel requirements, at least the following should be considered as applicable:

(i) Current forecast winds and meteorological conditions along the expected flight path at the appropriate one-engine-inoperative cruise altitude and throughout the approach and landing;

(ii) Any necessary operation of ice protection systems and performance loss due to ice accretion on the unprotected surfaces of the aeroplane;

(iii) Any necessary operation of Auxiliary Power Unit (APU);

(iv) Loss of aeroplane pressurisation and air conditioning; consideration should be given to flying at an altitude meeting oxygen requirements in the event of loss of pressurisation;

(v) An approach followed by a missed approach and a subsequent approach and landing;

(vi) Navigational accuracy necessary; and

(vii) Any known Air Traffic Control (ATC) constraints.

Note: APU oil consumption should also be considered as necessary.

(2) Critical Fuel Reserves/EDTO Critical Fuel

In establishing the critical fuel reserves, the applicant is to determine the fuel necessary to fly to the most critical point and execute a diversion to a suitable alternate under the conditions outlined in sub-paragraph (3) below the 'Critical Fuel Scenario'. These critical fuel reserves should be compared to the normal

applicable operational rule requirements for the flight. If it is determined by this comparison that the fuel to complete the critical fuel scenario exceeds the fuel that would be on board at the most critical point, as determined by applicable operational rule requirements, additional fuel should be included to the extent necessary to safely complete the critical fuel scenario. In consideration of the items listed in sub-paragraph (1) above, the critical fuel scenario should allow for a contingency figure of 5% added to the calculated fuel burn from the critical point to allow for potential errors in wind forecasts, a 5% penalty in fuelmileage (or operator's demonstrated value for in-service deterioration in cruise fuel mileage), any Configuration Deviation List items, both airframe and engine anti-icing; and account for ice accumulation on unprotected surfaces if icing conditions are likely to be encountered during the diversion. If an operatoris not using the actual forecast wind, a wind aloft forecast distributed worldwide by the World Area Forecast System (WAFS) is an example of a wind model acceptable to the BCAA. If the APU is a required power source, then its fuel consumption should be accounted for during the appropriate phase(s) of flight.

(3) Critical Fuel Scenario

The following describes a scenario for a diversion at the most critical point. The applicant should confirm the scenario to be used when calculating the critical fuel reserve necessary. It is operationally the most critical when considering both time and aeroplane configuration (e.g., two-engine versus one-engine at 10,000 feet non-standard aeroplane configuration):

(i) Assuming a rapid decompression at the most critical point followed by descent to a safe altitude in compliance with the oxygen supply requirements, or at the critical point, consider simultaneous failure of one propulsion system and the pressurisation system (critical point based on time to a suitable alternate at the approved one-engine- inoperative cruise speed).

(ii) Immediate descent to and continued cruise at 10 000 feet at the relevant one-engine-inoperative cruise speed or continued cruise above 10 000 feet if the aeroplane is equipped with sufficient supplemental oxygen in accordance with ANTR-OPS 1 or at the approved one-engineinoperative cruise speed assuming an engine failure at the most critical point followed by descent to the one-engine inoperative cruise altitude.

(ii) Upon approaching the EDTO en-route alternate, descent to 1,500 feet above destination, hold for 15 minutes, initiate an approach followed by a missed approach and then execute a normal approach and landing.

a. The effect of airframe icing during 10 percent of the time during which icing is forecast (including ice accumulation on unprotected surfaces, and the fuel used by engine and wing anti-ice during this period).Unless a reliable icing forecast is available, icing may be presumed to occur when the total air temperature at the approved one-engine cruise speed is less than +10 degrees Celsius, or if the outside air temperature is between 0 degrees Celsius and -20 degrees Celsius with a relative humidity of 55 percent or greater.

b. Fuel for engine anti-ice, and if appropriate wing anti-ice, for the entire time during which icing is forecast

Unless the operator has a program established to monitor aeroplane in-service deterioration in cruise fuel burn performance, and includes in fuel supply calculations fuel sufficient to compensate for any such deterioration, increase the final calculated fuel supply by 5 percent to account for deterioration in cruise fuel burn performance. If the APU is a required power source, then its fuel consumption must be accounted for during the appropriate phases of flight.

In computing the EDTO critical, advantage may be taken of drift down computed at the approved one-engine inoperative cruise speed. Accounting of wing anti-ice as in paragraph (a)(iv) above may apply to some models of aeroplane based on their characteristics and the manufacturer's recommended procedures.

Note 1: For aeroplanes with more than two engines simultaneous engine failure and depressurization or depressurization alone, whichever is more limiting will be considered.

Note 2: The speed selected for the all-engine-operative diversion(i. e. depressurization alone) may be different from the approved one-engine inoperative speed used to determine the EDTO threshold and maximum diversion distance;

Note 3: The speed selected for the one-engine-inoperative diversions(i. e. engine failure alone and combined engine failure and depressurization) should be the approved one-engine-inoperative speed used to determine the EDTO threshold and maximum diversion distance;

(d) Enroute Alternate Aerodromes

An aeroplane should not depart on an extended diversion time operation unless the required take-off, destination and alternate aerodromes, including suitable en-route alternate aerodromes, to be used in the event of propulsion system failure or aeroplane system failure(s) which require a diversion, are listed in the cockpit documentation (e. g. computerised flight plan). Suitable en-route alternates should also be identified and listed in operational flight plan for all cases where the planned route of flight contains a point more than one hour flying time at the one-engine-inoperative speed from an adequate aerodrome.

Since these suitable en-route alternates serve a different purpose than the destination alternate aerodrome and would normally be used only in the event of an engine failure or the loss of primary aeroplane systems, an aerodrome should not be listed as a suitable en-route alternate unless:

(1) The landing distances required as specified in the AFM for the altitude of the aerodrome, for the runway expected to be used, considering wind conditions, runway surface conditions, and aeroplane handling characteristics, permit the aeroplane to be stopped within the landing distance available as declared by the aerodrome authorities and computed in accordance with ANTR-OPS 1.

(2) In addition to the en-route alternate aerodrome provisions described above the following apply:

(i) for route planning purposes, identified en-route alternate aerodromes need to be located at a distance within the maximum diversion time from the route and which could be used if necessary; and

(ii) in extended diversion time operations, before an aeroplane crosses its threshold time during flight, there should always be an en-route alternate aerodrome within the approved maximum diversion time whose conditions will be at or above the operator's established aerodrome operating minima for the operation during the estimated timeof use.

If any conditions, such as weather below landing minima, are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action should be determined such as selecting another en-route alternate aerodrome within the operator's approved maximum diversion time.

During flight preparation and throughout the flight the most up-to-date information should be provided to the flight crew on the identified en-route alternate aerodromes, including operational status and meteorological conditions.

Note: En-route alternate aerodromes may also be the takeoff and/or destination aerodromes.

For the purpose of converting diversion times to distances, an "approved one-engine-inoperative (OEI) speed" or "approved all-engine-operative (AEO) speed" is any speed within the certified flight envelope of the aeroplane.

For determining whether a point on the route is beyond threshold time (60/90 minutes for a twin engine aeroplane as applicable and 120/180 minutes for an aeroplane with more than two engines) to an en-route alternate, the operator should select an approved one-engine-inoperative (OEI) speed or an approved all-engine-operative (AEO) speed, as the case may be. The distance is calculated from the point of the diversion followed by cruise for 60/90/120/180 minutes, in ISA and still air conditions. For the purposes of computing distances, credit for drift down may be taken.

(3) The aerodrome services and facilities are adequate to permit the conduct of an instrument approach procedure to the runway expected to be used while complying with the applicable aerodrome operating minima.

(4) The latest available forecast weather conditions for a period commencing one hour before the established earliest time of landing and ending one hour after the established latest time of landing at that aerodrome, equals or exceeds the authorised weather minima for en-route alternate aerodromes. In addition, for the same period, the forecast crosswind component, including gusts, for the landing runway expected to be used should not exceed the maximum permitted crosswind for single engine landing taking into account the runway condition (dry, wet or contaminated).

(5) During the course of the flight, the flight crew are to continue to remain informed of any significant changes in conditions at designated en-route alternates. Prior to proceeding beyond the extended diversion time entrypoint, the forecast weather for the required time periods, aeroplane status,fuel remaining, runway surface conditions, landing distances and aerodrome services and facilities at designated en-route alternates should be evaluated. If any conditions are identified (such as weather forecast below landing minima) which would preclude safe approach and landing, then the pilot should take an appropriate course of action.

(6) In addition, the operator's programme should provide flight crews with information on adequate aerodromes appropriate to the route to be flown which are not forecast to meet ANTR-OPS 1, Subpart D en-route alternate weather minima. Aerodrome facility information and other appropriate planning data concerning these aerodromes should be provided to flight crewsfor use when executing a diversion.

Note: The alternate aerodromes should be chosen to make it possible for the aeroplane to reach the alternate while complying with the requirements, especially with regard to performance (flight over obstacles) and/or oxygen considerations.

(e) Aeroplane Performance Data

No aeroplane should be released on an extended diversion time flight unless the operator's makes performance data available to its flight crew members and dispatchers that support all phases of EDTO operations, including divert scenarios. Further, the Operations Manual (Part II of the Application-cum-Compliance Form ALD/OPS/F048 for manual guideline) contains sufficient data to support the critical fuel reserve and area of operations calculation. The following data should be based on Authority approved information or referencedin the Aeroplane Flight Manual (AFM).

(1) Detailed one-engine-inoperative performance data including fuel flow for standard and non-standard atmospheric conditions and as a function of airspeed and power setting, where appropriate, covering:

(i) drift down (includes net performance);

(ii) cruise altitude coverage including 10 000 feet;

(iii) holding;

(iv) altitude capability (includes net performance); and

(v) missed approach.

(2) Detailed all-engine-operating performance data, including nominal fuel flow data, for standard and non-standard atmospheric conditions and as a function of airspeed and power setting, where appropriate, covering:

(i) Cruise (altitude coverage including 10 000 feet); and

(ii) Holding.

(3) Details of any other conditions relevant to extended diversion time operation which can cause significant deterioration of performance, such as ice accumulation on the unprotected surfaces of the aeroplane, Ram Air Turbine (RAT) deployment, thrust reverser deployment, etc.

(4) The altitudes, airspeeds, thrust settings, and fuel flow used in establishing the EDTO area of operations for each airframe-engine combination must be used in showing the corresponding terrain and obstruction clearances in accordance with ANTR-OPS 1.

6.2.2 Flight Dispatch

Flight dispatch procedures refer to the method of control and supervision of flight operations. This does not imply a specific requirement for approved flight dispatchers or a full flight following system. In applying the general flight dispatch requirements, particular attention should be paid to the conditions which might prevail any time that the operation is beyond threshold time to an en-route alternate aerodrome, e.g. systems degradation, reduced flight altitude, etc. For compliance with the EDTO requirement, at least the following aspects must be considered:

(a) identify en-route alternate airports;

(b) ensure that prior to departure the flight crew is provided with the most upto-date information on the identified en-route alternate aerodromes, including operationalstatus and meteorological conditions and, in flight, make available means for the flight crew to obtain the most up-to-date weather information;

(c) methods to enable two-way communications between the aeroplane and the operator’s operational control centre;

(d) ensure that the operator has a means to monitor conditions along the planned route including the identified alternate airports and ensure that procedures are in place so that the flight crew are advised of any situation that may affect the safety of flight;

(e) ensure that the intended route does not exceed the established aeroplane threshold time unless the operator is approved for EDTO operations

(f) pre-flight system serviceability including the status of items in the minimum equipment list;

(g) communication and navigation facilities and capabilities;

(h) fuel requirements;

(i) availability of relevant performance information for the identified en-route alternate aerodrome(s); and

(j) If at least 30 minutes notice is given to the aerodrome operator prior to the arrival of the aeroplane, a minimum of RFFS Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg, and RFFS Category 1 for other aeroplanes.
If less than 30 minutes notice can be given to the aerodrome operator prior to the arrival of the aeroplane:
Two categories below the aeroplane RFFS category, or
Three categories below the aeroplane RFFS category in the case of a temporary downgrade of 72 hours or less but not lower than aerodrome RFFS Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg and not lower than Category 1 for other aeroplanes. provided the State of Authorityapproved/accepted.

(k) The following items must be listed in the dispatch or flight release for all EDTO flights;

(1) EDTO alternates; and

(2) The authorized EDTO diversion time under which the flight is dispatched or released.

6.2.3 Operational Procedures

(a) Operating procedures refer to the specification of organization and methods established to exercise operational control and flight dispatch procedures in the appropriate manual(s) (Part II of the Application-cum-Compliance Form ALD/OPS/F048 for manual guideline) and should cover at least a description of responsibilities concerning the initiation, continuation, termination or diversion of each flight as well as the method of control and supervision of flight operations In addition, an operator shall develop unique EDTO flight crew procedures for each of the flight operations requirements pertaining to EDTO covered in this CAP. These procedures should be contained in the applicable manual (Part II of the Application-cum-Compliance Form ALD/OPS/F048 for manual guideline) or information provided to the flight crew. The manual or information provided to the flight crew should also contain procedural information necessary to interface with EDTO maintenance requirements such as;

(1) Fuel cross feed valve operational check (if applicable);

(2) Special EDTO MEL requirements ;

(3) APU in-flight start procedures (if applicable);

(4) Engine Condition Monitoring (ECM) data recording procedures; and

(5) In-flight verification of EDTO significant systems.

(b) The reliability of the propulsion system for the aeroplane-engine combination being certified is such that the risk of double engine failures from independent causes is assessed and found acceptable to support the diversion time being approved. For all operations beyond the EDTO threshold as determined by the Authority, the operator should consider, at time of dispatch and as outlined below, the EDTO certified capability of the aeroplane and the most limiting EDTO significant system time limitation, if any, indicated in the Aeroplane's Flight Manual (directly or by reference) and relevant to that operation. The operator should check that from any point on the route, the maximum diversion time at the approved speed does not exceed the most limiting EDTO significant system time limitation, other than the cargo fire suppression system, reduced with an operational safety margin of 15 minutes. The operator should check that from any point on the route, the maximum diversion time, at all engine operating cruise speed, considering ISA and still air conditions, does not exceed the cargo fire suppression system time limitation reduced with an operational safety margin of 15 minutes.

6.2.4 Operational Limitations

(a) Area of Operation

(1) An operator may be authorised to conduct extended diversion time operations within an area where the diversion time, at any point along the proposed route of flight to an adequate aerodrome, is up to a maximum of 180 minutes in still air at the approved one-engine-inoperative cruise speed. Appendices 1 and 4 provide criteria for such operations.

(2) In the case of operations cleared up to 120 minutes maximum diversion time, small increases in the diversion time for specific routes may be approved as needed, if it can be shown that the resulting routing will provide an enhancement of overall safety.

Such increases:

(i) will require the Authority to assess overall type design including time limited systems, demonstrated reliability; and

(ii) to establish an appropriate MEL related to the diversion time required; and

(iii) will not be more than 15 per cent of the original maximum diversion time approved in accordance with paragraph 10.f.

(b) Flight Release Limitation

The flight release limitation should specify the maximum diversion time from a suitable aerodrome for which an operator can conduct a particular extended diversion time operation.

(1) Use of Maximum Diversion Time:

The procedures established by the operator should ensure that extended diversion time operation is limited to flight plan routes where the approved maximum diversion time to suitable aerodromes can be met under standard conditions in still air. Operators should provide for:

(i) Company procedures to state that upon occurrence of an in-flight shutdown of an engine, the pilot should promptly initiate diversion to fly to and land at the nearest aerodrome, in terms of time, determined to be suitable by the flight crew.

(ii) A practice to be established such that in the event of a single or multiple primary system failure, the pilot will initiate the diversion procedure to fly to and land at the nearest aerodrome in terms of time, determined to be suitable by the flight crew, unless it has been justified that no substantial degradation of safety results from continuation of the planned flight.

Note: If no more than one engine is shut down for an aeroplane with more than two engines, the pilot-in-command may elect to continue beyond the nearest en-route alternate aerodrome (in terms of time) if he determines that it is safe to do so. In making this decision the pilot-in-command should consider all relevant factors.

(c) Contingency procedures should not be interpreted in any way which prejudices the final authority and responsibility of the pilot in command for the safe operation of the aeroplane.

6.2.5 Flight Crew Training, Evaluation, and Operating Manuals

(a) Adequacy of Flight Crew Training and Operating Manuals

The Authority will review in-service experience of significant aeroplane systems. The review will include system reliability levels and individual event circumstances, including crew actions taken in response to equipment failures or unavailabilities. The Authority will use the information resulting from these reviews to modify or update flight crew training programmes, operating manuals and checklists, as necessary.

Note: *Refer to* Part II of the Application-cum-Compliance Form ALD/OPS/F048 *for EDTO Operations Manual Guide.*

(b) Flight Crew Training and Evaluation Programme

The operator's training programme in respect to extended diversion time operations shall be approved by BCAA and accordingly the operator should provide initial training for flight crew members followed by subsequent evaluations and proficiency checks as well as refresher training in the following areas:

(1) Introduction to EDTO regulations / concept of diversion time operation.

(2) Routes and aerodromes intended to be used in the EDTO area of operations

(3) Performance:

(i) Flight planning, preparation including all contingencies.

(ii) Flight performance progress monitoring.

(4) Procedures:

(i) Criteria for diversion, Diversion Procedures and Diversion 'Decision making'. Special initial and recurrent training to prepare flight crews to evaluate probable propulsion and airframe systems failures should be conducted. The goal of this training should be to establish crew competency in dealing with the most probable operating contingencies.

(ii) Use of appropriate navigation and communication systems, appropriate flight management devices.

(iii) The flight crew should be provided with detailed initial and recurrent training which emphasises abnormal and emergency procedures to be followed in the event of foreseeable failures for each area of operation, including:

a. Procedures for single and multiple failures in flight that would precipitate go/no-go and diversion decisions. If standby sources of electrical power significantly degrade cockpit instrumentation to the pilots, then approved training which simulates approach with the standby generator as the solepower source should be conducted during initial and recurrent training.

b. Operational restrictions associated with these failuresincluding any applicable Minimum Equipment List (MEL) considerations.

c. Procedures for air start of the propulsion systems, including the APU, if required.

d. Crew incapacitation

(iv) Use of emergency equipment including protective breathing and ditching equipment.

(v) Procedures to be followed if there is a change in conditions at designated en-route alternates which would precludesafe approach and landing.

(vi) Understanding and effective use of approved additional or modified equipment required for extended diversion time operations.

(vii) Fuel Management

Flight crew should be trained on the fuel management procedures to be followed during the en-route portion of the flight. Theseprocedures should provide for an independent cross-check of fuelquantity indicators. For example fuel flows could be used to calculate fuel burned and compared to indicated fuel remaining.

(viii) Operators should develop and incorporate annual EDTO refresher training programmes for flight crew qualified for EDTO operations.

(c) Flight Dispatchers Training

Operator should develop a training programme covering all applicable aspects of EDTO dispatcher's scope and incorporate annual EDTO refresher training programmes for them before they could be deployed for such function. Training program for flight dispatchers should ensure requirements of are complied with such as but not limited to:

(1) route qualification;

(2) flight planning and preparation;

(3) concept of extended diversion time operations;

(4) criteria for diversions; and

(5) diversion decision making.

(d) EDTO Check Programme

The objective of the EDTO check programme should be to ensure standardised flight crew practices and procedures and also to emphasis the special nature of EDTO operations. Only pilots with a demonstrated understanding of the uniquerequirements of EDTO should be designated as check pilots for EDTO.

7. EDTO OPERATIONAL APPROVAL – IN SERVICE EXPERIENCE METHOD

7.1 General

"In-service EDTO Approval", based on a pre-requisite amount of prior in-service experience with the candidate airframe/engine combination. Elements from the "accelerated EDTO approval" method may be used to reduce the amount of prior in- service experience. An in-service experience program is one method of obtaining EDTO operational approval. As a prerequisite to obtaining any operational approval, the operator needs to show that an acceptable level of propulsion system reliability has been achieved in service by the world fleet for that particular airplane-engine combination. The operator also should obtain sufficient maintenance and operation familiarity with the particular airplane-engine combination. Each operator requesting approval to conduct EDTO by the in-service method should have operational experience appropriate to the operation proposed.

7.1.1 The following paragraphs contain requirements for requisite in-service experience. These may be reduced or increased following review and concurrence on a case-by-case basis by BCAA. Any reduction or increase in in-service experience requirements will be based on an evaluation of the operator's ability and competence to achieve the necessary reliability for theparticular airplane-engine combination in EDTO. For example, a reduction in in-service experience may be considered for an operator who can show extensive in-service experience with a related engine on another airplane that has achieved acceptable reliability. In contrast, an increase in in-service experience may be considered for those cases where heavy maintenance has yet to occur and/or abnormally low numbers of take-offs have occurred.

7.2 75/90 minutes operation

Approval to carry out EDTO with 75 minutes diversion time may be granted by BCAA to an operator with minimal or no in-service experience with airframe engine combination. This approval will be based on such factors as the proposed areas of operation, the operators demonstrated ability to successfully introduce aircraft into operation, and the quality of the proposed maintenance and operation program. Special case by case operational approval may be granted beyond 75 minutes diversion time (in steps of 15 minutes) with limited evaluation of service experience at the time of the application. For this approval, the service experience of Airframe-engine combination may be less than 2, 50,000 hours in the world fleet.

7.3 More than 75/90 minutes - 120 minutes operation

Each operator requesting approval to conduct EDTO with a maximum diversion time of 120 minutes (in still air) should have minimum of 12 consecutive months of operational in service experience with the specified airframe engine combination. Normally the accumulation of at least 2, 50,000 engine hours in the world fleet (not necessarily on a particular airframe) will be necessary before the proposal is considered. Where the engine experience on another type of aeroplane is applicable to the candidate aeroplane, the candidate aeroplane should normally obtain a significant portion of the 2, 50,000 engine hours experience. This number of engine hours may be reduced if sufficient data is available to prove reliability of the engine. In the event that a particular engine is derived from an existing engine the required operational experience is subject to establishing the degree of hardware commonalties and operating similarities.

7.4 More than 120 minutes - 180 minutes operation

Each operator requesting approval for maximum diversion time of 180 minutes (in still air) should have held current approval for 120 minutes EDTO for a minimum period of 12 months with a corresponding high level of demonstrated propulsion system reliability.

7.5 Procedure for seeking approval for EDTO (In Service Method)

Any operator requesting approval for EDTO should submit the request with the supporting data to BCAA at least three months prior to the proposed start of EDTO with the specific airframe/engine combination. Each operator requesting approval to conduct EDTO should have operational in service experience as given above appropriate to the operation proposed. This data shall include the details of compliance of modifications, additions, and changes in the maintenance practices, which were made to qualify the aeroplane system for EDTO. It should also be shown that an acceptable level of propulsion system reliability has been achieved in service by the world fleet for that airframe-engine combination. The operator must obtain sufficient maintenance and operations familiarity with the particular airframe engine combination in question before seeking approval.

Each applicant/operator for EDTO approval should show that the airframe/engine combination is sufficiently reliable. Systems required for EDTO should be shown by the operator to be continuously maintained and operated at levels of reliability appropriate for intended operation.

EDTO approval of an aeroplane by the manufacturer/Regulatory Authority of the country of manufacture is normally reflected by a statement in the approved Aeroplane Flight Manual (AFM)/Type Certificate Data Sheet (TCDS) or Supplemental Type Certificate (STC), which specifies the Configuration, Maintenance and Procedures (CMP) Standard requirements for suitability. The CMP standards shall be of latest revision. The standards and its revisions may require priority actions to be implemented before the next EDTO flight and other actions to be implemented according to a schedule acceptable to BCAA.

7.6 Application for approval

An applicant seeking approval for EDTO shall submit the proposal on the prescribed application-cum-compliance checklist (ALD/OPS/F048). The operator should furtherfurnish details of the procedure/instructions and methodology for continued capability to adhere to conditions laid down at the time of grant of approval in a separate EDTO Manual (Part II of the Application-Cum-Compliance Form ALD/OPS/F048 for manual guideline) for use by personnel involved in EDTO. Any amendment to the EDTO manual requires BCAA approval.

8. EDTO OPERATIONAL APPROVAL – ACCELERATED METHOD

8.1 General

"Accelerated EDTO approval", does not require prior in-service experience with the candidate airframe/engine combination. An operator may initiate EDTO when the operator establishes the processes necessary for successful and reliable EDTO operations and provesto the BCAA that such processes can be successfully applied throughout the applicant's EDTO operations. This may be achieved by thorough documentation and analysis of processes and process validation, or demonstration on another airplane/validation (as described under process validation in this section, below) or a combination of these processes.

8.2 EDTO Processes

The airplane-engine combination for which the operator is seeking accelerated EDTO operational approval must be EDTO (EDTO) type design-approved (except for two-engine EDTO at 75-minute) and be capable of operating at a satisfactory level of reliability before commencing EDTO. The operator seeking accelerated EDTO operational approval must demonstrate to the BCAA that it has an EDTO program in place that consists of all the following applicable EDTO process elements:

(a) The applicable process elements defined as the EDTO maintenance and operations requirements in this CAP.

(b) Documentation of the following elements as appropriate:

(1) Technology new to the operator and significant difference in primary and secondary power (engines, electrical, hydraulic, and pneumatic) systems between the airplanes currently operated and the airplane for which the operator is seeking EDTO operational approval.

(2) The plan to train flight and maintenance personnel to the differences identified in the maintenance subparagraph above.

(3) The plan to use proven manufacturer-validated training and maintenance and operations manual (Part II of the Application-cum-Compliance Form ALD/OPS/F048 for manual guideline) procedures relevant to EDTO for the two-engine airplane for which the operator is seeking accelerated EDTO operational approval.

(4) Changes to any previously proven validated training, maintenance or operations manual procedures used in previous non-EDTO operations or in previous EDTO with a different airplane-engine combination and/or geographic area of operations. Depending on the nature and extent of any changes, the operator may be required to provide a plan for validating such changes.

(5) The validation plan for any additional operator unique training andprocedures relevant to EDTO.

8.3 Process validation methodology

(a) Paragraph 9.2 identifies those process elements that should be proven before EDTO approval is granted by the BCAA under the accelerated EDTO approval program. For a process to be considered proven, the process should first be defined. Typically, this will include a flow chart showing the various elements of the process. Roles and responsibilities of the personnel who will be managing this process should be defined including any EDTO training requirement. The operator should demonstrate that the process is in place and functions as intended. The operator may accomplish this by thorough documentation and analysis, or by demonstrating on an aeroplane, that the process works and consistently provides the intended results. The operator should define the necessary evaluation duration to validate the process and also show that a feedback loop exists to illustrate need for revision of the process, if required, based on in-service experience.

(b) Normally the choice to use or not to use demonstration on an aeroplane as a means of validating individual processes should be determined by the operator. Process validation may be done with the airframe-engine combination that will be used in EDTO. It can also be done with a different aeroplane type from that for which EDTO approval is being sought, including an aeroplane with more than two engines, if it can be shown that the particular airplane-engine combination in the operator's EDTO program is not necessary to validate a complete process. With sufficient preparation and dedication of resources, such validation may not be necessary to assure processes that produce acceptable results.

However, if the plan proposed by the operator to prove processes is determined by the BCAA to be inadequate or the plan does not produce acceptable results, validation of the processes with an aeroplane will be required.

(c) If an operator currently is conducting EDTO with a different airplane engine combination, it may be able to document that it has proven EDTO processes in place with only minimal further validation required. If the operator has similar non-EDTO operations and can simulate or demonstrate proven EDTO processes in such operations, credit can be given for such successful evaluations. In either case, the operator should demonstrate that the means are in place to assure equivalent results with the airplane-engine combination being proposed for EDTO operational approval. The following elements may aid in justifying a reduction in the validation requirement of EDTO processes:

(1) Experience with other airframes and/or engines,

(2) Previous EDTO experience,

(3) Experience with long range, overwater operations with two-, three-, or four-engine airplanes, and

(4) Experience gained by flight crew members and maintenance and flight dispatch personnel while working with other EDTO-approved operators.

8.4 Procedure for seeking approval for EDTO (Accelerated Method)

The operator seeking accelerated EDTO operational approval should submit an Accelerated EDTO operational approval plan to the BCAA six months before the proposed start of EDTO. This will provide sufficient time for the operator and the BCAA to validate the effectiveness ofall EDTO process elements ("proven process"). The operator's application for EDTO should:

(a) State the EDTO time category requested. Define proposed routes and the EDTO diversion time necessary to support these routes and the aeroplane engine combination to be flown.

(b) Define processes and related resources being allocated to initiate and sustain EDTO operations in a manner that demonstrates commitment by management and all personnel involved in EDTO maintenance and operational support.

(c) Provide a documented plan for compliance with requirements listed in this section for Accelerated EDTO.

(d) Define Review Gates. A review gate is a milestone- tracking plan to allow for the orderly tracking and documentation of specific provisions of this CAP. Each review gate should be defined in terms of the process elements to be validated.

Normally, the review gate process will start six months before the proposed start of EDTO and should continue until at least six months after the start of EDTO. The review gate processwill help ensure that the proven processes comply with the provisions of this CAP and are capable of continued EDTO operations.

8.5 Validation of Process Elements

When the operators accelerated EDTO plan receives approval by the BCAA, a validation of theprocess elements of the accelerated EDTO plan should begin. Close coordination between theoperator and the BCAA is necessary for a successful validation of the EDTO plan. All process elements required should be validated.

(a) Before the start of the validation of the process elements, the following information should be part of the Accelerated EDTO plan submitted to the BCAA:

(1) Validation periods, including start dates and proposed completion dates.

(2) Definition of airplane(s) to be used in the validation. List should include registration numbers, manufacturer and serial number and model of the airframes and engines.

(3) Description of the areas of operation (if relevant to validation objectives) proposed for validation and actual EDTO.

(4) Definition of designated EDTO validation routes. The routes should be of duration necessary to ensure process validation occurs.

(b) Process validation reporting. The operator should compile results of EDTO process validation. The operator should:

(1) Document how each element of the EDTO process was utilized during the validation.

(2) Document any shortcomings with the process elements and measures in place to correct such shortcomings.

(3) Document any changes to EDTO processes that were required after an IFSD, unscheduled engine removals, or any other significant operational events.

(4) When there is concurrence between the operator and the BCAA that a process element has been successfully proven, the review gate should be closed and confirmation documented.

(5) Provide periodic process validation reports to the BCAA. This should be addressed during the review gates.

(c) The operator should include a final review gate prior to final EDTO approval that is the validation flights carried out. This review gate should ensure that all EDTO processes have been proven.

(d) Any validation program should address the following:

(1) The operator should show that it has considered the impact of the EDTO validation program with regard to safety of flight operations. The operator should state in its application any policy guidance to personnel involved in the EDTO process validation program. Such guidance should clearly statethat EDTO process validation exercises should not be allowed to adversely impact the safety of operations especially during periods of abnormal, emergency, or high cockpit workload operations. It should emphasize that during periods of abnormal or emergency operation or high cockpit workloadEDTO process validation exercises may be terminated.

(2) The validation scenario(s) should be of sufficient frequency and operational exposure to validate maintenance and operational support systems not validated by other means.

(3) A means must be established to monitor and report performance with respect to accomplishment of tasks associated with EDTO process elements. Any recommended changes to EDTO maintenance and operational process elements should be defined.

8.6 Final approval for accelerated EDTO Authority

At the successful completion of the operator's accelerated EDTO validation program all process elements should have been validated and appropriate review gates closed. Report of a

successful completion of review gates will be forwarded to the BCAA. Upon final concurrence and approval, the applicant should forward to the BCAA a plan for final validation flights to beconducted over proposed routes in the EDTO area of operation and in the airframe-engine combination listed in the operator's application. This BCAA witnessed EDTO validation flight or flights will be conducted over the proposed initial route without revenue passengers. The carriage of cargo is permitted. The purpose of these flights is for the operator to demonstrate to the BCAA that it has the competence and capability to safely conduct and adequately support the intended EDTO operation.

9. APPLICATION & APPROVAL PROCESS

9.1 Application

Any operator requesting approval for extended diversion time operations with two or more than two engine aeroplanes should submit the application-cum-compliance checklist (ALD/OPS/F048), with the required supporting data, to the Authority at least 3 months prior to the proposed start of extended diversion time operation with the specific airframe-engine combination.

The BCAA will require an operator to be able to demonstrate the ability to maintain and operate the aeroplane to achieve the necessary reliability and to train its personnel to achieve the competence in EDTO operations.

9.2 Supporting Documentation

The following supporting documentation is required with the application;

(a) Aircraft Flight Manual or Supplement indicating EDTO

(b) Type Certification Data Sheet or Supplemental Type Certificate

(c) MMEL/MEL

(d) Exposition (amendment) including;

(1) Specific procedures;

(2) Engineer certification requirements;

(3) Oil Consumption Programme

(4) Engine Condition monitoring

(5) Verification Programme after maintenance

(6) Reliability programme

(7) Propulsion system monitoring

(8) Maintenance training

(9) EDTO parts control

(e) Maintenance Programme (amendment)

(f) Technical Log (if amended)

(g) In-flight Shut down rate for airframe/engine combination (from Manufacturer)

(h) Operations Manual amendments (OMA, OMB, OMC and OMD)

(1) SOPs

(2) Checklists

(3) Area of operations including EDTO alternates

(4) Training and checking

9.3 Assessment

In considering an application from an operator to conduct extended diversion time operations, an assessment will be made by the BCAA of the operator's overall safety record, past performance, flight crew training and experience, and maintenance programme. The operator's past record of propulsion system reliability with related types of engines should bereviewed, as well as its record of achieved systems reliability with the airframe-enginecombination for which authorization is sought to conduct EDTO. For operators with past experience, this assessment / review / determination should include trend comparisons of the operator's data with other operators as well as the world fleet average values and theapplication of a qualitative judgments that considers all of the relevant factors. The data provided with the request should substantiate the operator's ability and competence to safely conduct and support these operations and should include the means used to satisfy theconsiderations outlined in this paragraph. The operator without such experience should establish a programme that results in a high degree of confidence that the operator is able to safely conduct and support these operations and should include the means used to satisfy the considerations outlined in this CAP.

Once the BCAA is satisfied with the documentation review, training aspects - proving flight(s) will be conducted on non-EDTO revenue flights to confirm dispatch and operational procedures.

10. OPERATIONS SPECIFICATIONS

An operator's aircraft should not be operated on an EDTO flight unless approved by BCAA for both maintenance and operations and endorsed on the Air Operators Permit as part of the operations specifications. The operators shall, therefore, evolve an Operations Specification for EDTO, which should cover at least the following before seeking approval;

(a) Airframe-engine combination

(b) Authorised area of operation

(c) Maximum diversion time at the approved one engine cruise speed.

(d) Threshold time

Note: The threshold time and maximum diversion time may also be listed in distance (NM).

11. FLIGHT MANUAL INFORMATION

Operators holding EDTO approval shall ensure that the applicable flight manual contain at least the following information:

(a) The maximum flight time with one power–unit inoperative, for which the systems reliability has been approved in accordance with the airworthiness requirements established for EDTO;

(b) A list of additional equipment installed to meet the airworthiness requirements for EDTO.

(c) Additional performance data, including limitations, and flight procedures appropriate to EDTO; and

(d) Statement to the effect that the aeroplane systems associated with EDTO meet the required airworthiness and performance criteria but that the meeting of such criteria does not by itself constitute approval to conduct EDTO.

12. OPERATIONS APPROVAL

When the operational proving flight has been evaluated and found acceptable then theoperator may be authorized to conduct EDTO with the specified airframe engine combinations. Approval to conduct EDTO is made by the issuance of operation specification by the BCAA containing appropriate limitations.

13. CONTINUING SURVEILLANCE

13.1 Reliability

The BCAA will monitor all aspects of the extended diversion time operations that it has authorised, to ensure that the levels of reliability achieved in extended diversion time operations remain at the necessary levels and that the operation continues to be conducted safely. In the event that an acceptable level of reliability is not maintained, if significant adverse trends exist, or if significant deficiencies are detected in the type design or the conduct of the EDTO operation, then the BCAA may need to initiate a special evaluation, impose operational restrictions, if necessary, and stipulate corrective action for the operator to adopt in order to resolve the problems in a timely manner. The EDTO operation may be suspended, in absence of appropriate corrective action acceptable to BCAA.

13.2 Operator Responsibilities

It is incumbent upon each operator to take immediate action to rectify the conditions that cause an error, whether it be maintenance, dispatch or operations. The operator shouldalso report the event to the BCAA within 72 hours, through the appropriate channels, with initial analysis of causal factors and measures taken to prevent further events. The SMS Manager and Quality Manager must be involved.

Causes of engine in-flight shutdown or other engine/propulsion system problems may be associated with design problems and/or maintenance and operation procedures applied to the aeroplane. It is important to identify the root cause of events so that the appropriate corrective

action is implemented. An operator is not considered responsible for the occurrence of a design-related event in its fleet. However, maintenance or operational problems may be wholly or partially the responsibility of the operator. If an operator has an unacceptable engine in-flight shutdown rate attributed to maintenance or operational practices, then action tailored to that operator may be required by BCAA. The Operator should alert the State of Design when a special evaluation is initiated and provide for its participation independent of the determined cause.

13.2.1 Continuing analysis and surveillance programme

The operator must conduct regular surveillance on the extended range operation programme. This programme should be used by the operator as a means to ensure the integrity of the programme and to adjust the EDTO programme. The programme shall cover each element of the EDTO scope.

Note: This programme should be part of the operator's Quality System with input from the operator's SMS, especially in respect to risk management.

13.3 BCAA Action

The BCAA may consider revoking EDTO operational approval if IFSD becomes an issue or if the operator response to incidents is not effective or timely. The BCAA will also consider the operator's past performance record in determining the action to be taken. If an operator shows a history of operational and/or airworthiness errors, then approval may be revoked until the root causes of these errors are shown to be eliminated and EDTO programmes and procedures effective.

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