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PERATURAN DIREKTUR JENDERAL PERHUBUNGAN UDARA
NOMOR : KP. 363 TAHUN 2012

TENTANG

PETUNJUK PELAKSANAAN PERATURAN KESELAMATAN PENERBANGAN SIPIL BAGIAN 8900-4.6 *(STAFF INSTRUCTION)* TENTANG PENERBITAN DAN PENGAWASAN UNTUK OTORISASI *EXTENDED OPERATIONS (ETOPS) (ISSUANCE AND SURVEILLANCE FOR EXTENDED OPERATIONS (ETOPS) AUTHORIZATIONS)*

DENGAN RAHMAT TUHAN YANG MAHA ESA

DIREKTUR JENDERAL PERHUBUNGAN UDARA,

Menimbang :

a. bahwa dalam Peraturan Menteri Perhubungan Nomor PM 5 Tahun 2012 tentang Perubahan Kelima Atas Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2002 Tentang Persyaratan –Persyaratan Sertifikasi Dan Operasi Bagi Perusahaan Angkutan Udara Yang Melakukan Penerbangan Dalam Negeri, Internasional Dan Angkutan Udara Niaga tidak Berjadwal;

b. bahwa untuk melaksanakan hal sebagaimana dimaksud pada huruf a, perlu ditetapkan Petunjuk Pelaksanaan Peraturan Keselamatan Penerbangan Sipil Bagian 8900-4.6 (Staff Instruction) Tentang Penerbitan dan Pengawasan Untuk Otorisasi Extended Operations (Etops) (Issuance and Surveillance for Extended Operations (Etops) Authorizations) dengan Peraturan Direktur Jenderal Perhubungan Udara;

Mengingat :

1. Undang-Undang Nomor 1 Tahun 2009 tentang Penerbangan (Lembaran Negara Republik Indonesia Tahun 2009 Nomor 1, Tambahan Lembaran Negara Republik Indonesia Nomor 4956);

2. Peraturan Pemerintah Nomor 3 Tahun 2001 tentang Keamanan dan Keselamatan Penerbangan (Lembaran Negara Tahun 2001 nomor 9, Tambahan Lembaran Negara Nomor 4075);

3. Peraturan Presiden Nomor 47 Tahun 2009 tentang Pembentukan dan Organisasi Kementerian Negara;

4. Peraturan Presiden Nomor 24 Tahun 2010 tentang Kedudukan, Tugas dan Fungsi Kementerian Negara serta Susunan Organisasi, Tugas dan Fungsi Eselon 1 Kementerian Negara;

5. Peraturan Menteri Perhubungan Nomor PM 5 Tahun 2012 tentang Perubahan Kelima Atas Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2002 Tentang Persyaratan–Persyaratan Sertifikasi Dan Operasi Bagi Perusahaan Angkutan Udara Yang Melakukan Penerbangan Dalam Negeri, Internasional dan Angkutan Udara Niaga Tidak Berjadwal;

6. Peraturan Menteri Perhubungan Nomor KM 60 Tahun 2010 tentang Organisasi dan Tata Kerja Kementerian Perhubungan;

M E M U T U S K A N

Menetapkan : PETUNJUK PELAKSANAAN PERATURAN KESELAMATAN PENERBANGAN SIPIL BAGIAN 8900-4.6 *(STAFF INSTRUCTION)* TENTANG PENERBITAN DAN PENGAWASAN UNTUK OTORISASI *EXTENDED OPERATIONS (ETOPS) (ISSUANCE AND SURVEILLANCE FOR EXTENDED OPERATIONS (ETOPS) AUTHORIZATIONS)*

Pasal 1

Petunjuk Pelaksanaan Peraturan Keselamatan Penerbangan Sipil Bagian 8900-4.6 *(Staff Instruction)* Tentang Penerbitan dan Pengawasan Untuk Otorisasi *Extended Operations (ETOPS) (Issuance and Surveillance for Extended Operations (ETOPS) Authorizations),* sebagaimana tercantum dalam Lampiran Peraturan ini.

Pasal 2

Direktur Kelaikan Udara dan Pengoperasian Pesawat Udara, mengawasi pelaksanaan Peraturan ini.

Pasal 3

Peraturan ini mulai berlaku pada tanggal ditetapkan.

Ditetapkan di : Jakarta
Pada tanggal : 12 September 2012

DIREKTUR JENDERAL PERHUBUNGAN UDARA

ttd

HERRY BAKTI

SALINAN Peraturan ini disampaikan kepada:
1. Sekretaris Jenderal Kementerian Perhubungan;
2. Inspektur Jenderal Kementerian Perhubungan;
3. Sekretaris Direktorat Jenderal Perhubungan Udara;
4. Para Direktur di Lingkungan Direktorat Jenderal Perhubungan Udara.

Salinan sesuai dengan aslinya

KEPALA BAGIAN HUKUM DAN HUMAS

ISRAFULHAYAT

LAMPIRAN PERATURAN DIREKTUR JENDERAL PERHUBUNGAN UDARA
Nomor : KP. 363 Tahun 2012
Tanggal : 12 September 2012

Staff Instruction

SI 8900-4.6
Issuance and Surveillance for Extended Operations (ETOPS) Authorizations

Amendment : 0
Date : 12 September 2012

REPUBLIC OF INDONESIA – MINISTRY OF TRANSPORTATION
DIRECTORATE GENERAL OF CIVIL AVIATION
JAKARTA - INDONESIA

FOREWORD

1. PURPOSE : This Staff Instruction has been prepared to guide and assist all Directorate of Airworthiness and Aircraft Operation personnel, Indonesian Operators, or applicants in properly discharging their responsibilities and efficiently accomplishing their assigned tasks.

2. REFERENCE : This Staff Instruction handbook should be used in accordance with the applicable regulations.

3. REVISION : The revision of this Staff Instruction hand-book will be approved by the Director General of Civil Aviation.

DIRECTOR GENERAL OF CIVIL AVIATION

ttd

HERRY BAKTI

Salinan sesuai dengan aslinya

KEPALA BAGIAN HUKUM DAN HUMAS

ISRAFULHAYAT

TABLE OF CONTENTS

CHAPTER 1 GENERAL

1.1. Purpose

This section provides operations and airworthiness guidance for a DAAO Inspector to perform an evaluation of CASR part 121 or 135 applicant's request for authorization to conduct ETOPS, per AC 120-42 and—contains operations and airworthiness surveillance and oversight requirements for existing ETOPS operations.

The ETOPS supplemental maintenance programs described in this chapter are not applicable to three or more engine aircraft operated under either part.

1.2. Definition

For CASR part 121 and part 135 transport category turbine-powered airplanes with two engines, ETOPS are operations conducted over a route containing a point further than 60 minutes flying time at an approved one-engine-inoperative cruise speed under standard conditions (in still air) from an adequate airport.

For CASR part 121 turbine-powered airplanes with more than two engines, ETOPS are passenger-carrying operations conducted over a route containing a point further than 180 minutes at an approved one-engine-inoperative cruise speed under standard conditions (in still air) from an adequate airport.

It is important to read and understand the definitions found in CASR part 121, section 121.7 before continuing with the guidance in this chapter.

1.3. Types of Authorization

The approves ETOPS in accordance with the requirements and limitations contained in CASR part 121 appendix section 121.161 and part 135, section 135.161.

- CASR Part 121 and part 135. The DGCA may authorize ETOPS with two-engine airplanes over a route that contains a point farther than 60 minutes flying time from an adequate airport at an approved one-engine-inoperative cruise speed under standard conditions in still air.
- CASR Part 121. For passenger-carrying aircraft with more than two engines, section121.161 may grant authorization to conduct ETOPS operations over a route that contains a point greater than 180 minutes flying time from an adequate airport at an approved one-engine-inoperative cruise speed under standard conditions in still air.

To Be Granted ETOPS Authorizations, the Certificate Holder Must Demonstrate:
Part CASR part 121 and 135: Compliance with the requirements of the applicable rules in accordance with AC 120-42.

1.4. Points of Contact (POC).

For questions regarding an ETOPS authorization, contact:
Directorate of Airworthiness and Aircraft Operation
Directorate General of Civil Aviation
Gedung Karya Lt. 22
Jalan Medan Merdeka Barat No. 8
Jakarta 10110

Phone : +62-21-3506664
Fax : +62-21-3506663

CHAPTER 2 APPLICATION PROCESS

2.1. Initial Contact.

The application process usually begins with the application letter from the prospective certificate holder (applicant) and submitted to DAAO, DGCA.

2.2. Preparation for the Initial Meeting.

a. The DGCA will send invitation letter to applicant for the initial meeting.

b. The Deputy Director for Engineering assigns team leaders and members for certification process. The team members shall be include the:
- Principal operations inspector (POI) (Operations).
- Principal maintenance inspector (PMI) (Airworthiness).
- Other resources (if required)

2.3. Conduct the Initial Meeting.

a. Initial Meeting.
At the initial meeting, the applicant should officially request ETOPS authorization and present the DAAO with the letter of intent (LOI) and the application package outlined in subparagraph 2.4.

b. Notes. Review any notes from the applicant initial contact (phone call, face-to-face, or e-mail).

c. Discussion. During the initial meeting, discuss the following items with the applicant :

1) POCs. Identify all of the POCs for the applicant and DAAO. For example, Deputy Director for Engineering should appoint the team for ETOPS certification, as POC. The applicant should also appoint a POC.

2) Program Deficiencies. If applicable, identify any existing program deficiencies the applicant may have. If the applicant has existing ETOPS authorization, present any existing ETOPS program deficiencies to the applicant. The applicant must address these deficiencies prior to applying for ETOPS authorization. For example, if the applicant has a marginal Continuing Analysis and Surveillance System (CASS), the applicant must correct it before the DGCA grants ETOPS authority.

3) Identify Appropriate Regulations and Guidance Materials. Identify all of the Civil Aviation Safety Regulation. Manufacturer's guidance material may also be available.

4) Methods. There are two methods to gain ETOPS authorization: accelerated and in-service. Inform the applicant of the 6-month minimum notification requirement prior to the anticipated start date for the accelerated method, and the 60-day minimum notification requirement for the in-service method. The applicant must understand that these times are not negotiable.

i. CASR part 121 applicants may choose to use either method. Depending on the circumstances, discuss the applicable method(s) and be prepared to discuss the pros and cons of each method. Although either method is available for CASR part 121 applicants rarely use the in-service method.

ii. CASR part 135 applicants must use the in-service method. An applicant can enhance safety when, before conducting ETOPS, an applicant gains operational experience in the type of airplane capable of ETOPS, and with the operational environment typically encountered on longer range flights in areas where there are limited airports available for an en route diversion. Typically, this involves prior operational experience on overwater flights to international areas of operation in accordance with the CASR part 135 regulations and AC.

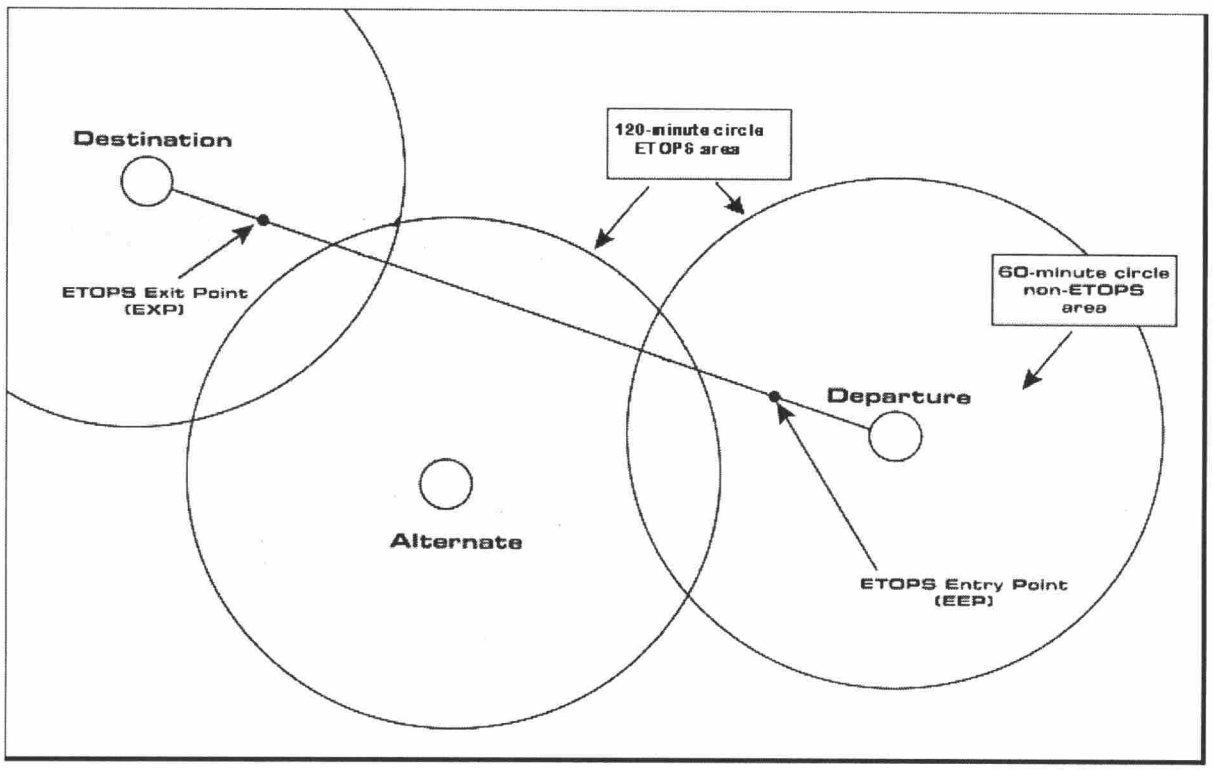
Note: When the in-service method is used, the applicant must understand that all training, processes, and procedures required for ETOPS must already be in place prior to submitting their application.

5) ETOPS Flight Operations Requirements. Brief the applicant on the following:

i. CASR Part 121 and Part 135 Operations. Certificate holders applying for ETOPS authorization must present to the DAAO to show that they have policies, procedures, and training programs for pilots, dispatchers, and flight followers (as applicable) to conduct ETOPS. The applicant must provide manuals and a training program curriculum to the DAAO for approval. Refer to AC 120-42 for specific requirements. The application must also include the policies and processes that the applicant will use to collect, monitor, evaluate, and maintain records for their ETOPS operations.

ii. CASR Parts 121 and 135 Applicants. The engine-out speed that applicants will submit for approval will be the basis for ETOPS calculations. In addition, the applicant should provide a graphical display in the form of range circles for the proposed area of operation (see Figure 2.1. Range Circles).

Figure 2.1. Range Circles



6) ETOPS Maintenance Requirements. Ask the applicant various questions concerning the ETOPS maintenance requirements to gather additional information.

7) Formal LOI. Inform the applicant that ETOPS authorization requires a formal LOI. The applicant may submit this separately, or it may be part of the application package (discussed later). The formal LOI should include the following information at a minimum:
   - Proposed ETOPS operating start date.
   - Airplane/engine combination.
   - Intended areas of operation.
   - Type of ETOPS authorization requested.
   - Existing operating certificate information, if applicable.

   i. Inform the applicant that after the DAAO reviews the formal LOI; the DAAO will provide a written response. This response should acknowledge receipt of the letter and should specify acceptance of the LOI, or specify what required information is missing.
   ii. After the initial meeting with the applicant when they have officially requested ETOPS authorization, the DAAO will ensure that the appropriate ETOPS track record form, are made for the evaluation of an ETOPS program.
   iii. The 6-month notification period for the accelerated method and the 60-day notification period for the in-service method begin upon DAAO acceptance of the formal LOI. When the applicant uses the in-service method, the applicant must understand that all training, processes, and procedures required for ETOPS must already be in place prior to DAAO acceptance of their formal LOI.

2.4. Application Package.

The applicant must submit an application. The applicant may submit the package at the same time as the LOI; however, the applicant may also submit it later. The application package is the heart of the ETOPS authorization process. It must contain detailed information on the following:

a. As stated earlier, the application package may contain the formal LOI.

b. Defined processes, procedures, and related resources being allocated to initiate and sustain ETOPS operations. These processes, procedures, and related resources are typically referred to as the applicant ETOPS program. The applicant must demonstrate a commitment by management and all personnel involved in ETOPS flight operations and Maintenance. The applicant must describe in detail how they will address the applicable flight operations requirements as defined in the applicable CASRs and ACs. The applicant must describe in detail how they will address each of the maintenance elements as defined in the applicable CASRs and ACs.

c. ETOPS authorization requested (e.g., 120 or 180 minutes).

d. Proposed routes.

e. Dispatch policies and procedures.

f. Requested method of approval (in-service or accelerated).

Note: The method the applicant chooses requires the identification of a formal timeline.

g. Documented plan for compliance with requirements of accelerated ETOPS (if applicable).

h. An approved airplane/engine combination, including engine-out speed, those ETOPS calculations will be based on.

i. Detailed review gates or equivalent. You can find further information about review gates later in this section.

j. Validation process. The validation process requires the applicant to identify a formal timeline.

2.5. DAAO Review Process.

The DAAO validates whether the applicant included all of the required elements in their application package. A review gate process, normally captured in the form of a matrix, may identify all of these elements and can facilitate tracking them throughout the validation process. If the applicant included all of the elements in the application package, then the DAAO will continue with the evaluation process and proceed to evaluate the application package including all of the elements. If there are missing or incomplete elements, the DAAO sends written notification to the applicant describing the shortfalls.

Note: As an aid to effectively validate the applicant's proposed ETOPS operations and maintenance program, see Chapter 7 of this Staff Instruction.

2.6. Review Gates.

Note: The review gate process, as defined in AC 120-42, is not detailed or required for the in-service method; however, it is a proven process that is useful in both application methods.

a. The review gate process will help ensure that the applicant's processes comply with the provisions of the applicable rules and AC 120-42, and are capable of continued ETOPS operations. Normally, the review gate process will start 6 months, at a minimum, before the proposed start of ETOPS and should continue until at least 6 months after the start of ETOPS.

b. Review gates, or an equivalent method, are helpful to track every aspect of an ETOPS approval and to be able to see the status of the project at a glance. Review gates or milestones should be in a matrix form. The method used should:

   1) Include dates of pertinent meetings, data submittals, and DAAO reviews and/or approvals.

   2) Identify each applicable maintenance and flight operations milestone.

   3) Include a "process validation plan."

c. Table 7.1, Extended Operations Authorization Review Gate Matrix Example, found in Chapter 7 of this Staff Instruction, includes what experience has shown to be a "best-practices" example of a review gate matrix. While we cannot mandate that the applicant complete their information in this format, or in any particular format, a matrix is a proven tool that you can share and you should encourage its use.

2.7. Process Validation Plan.

The process validation plan must include how the applicant intends to validate each of the process elements required to attain ETOPS authorization. This plan will spell out in sufficient detail how the applicant intends to ensure that each required process works. Note that this is a living document and it can change many times.

a. The process validation plan must ensure that each ETOPS process is:
   1) Defined,
   2) Demonstrated,
   3) Analyzed,
   4) Amended (if required),
   5) Revalidated, and
   6) Proven (prior to ETOPS authorization).

b. The process validation plan may include validation through simulation; however, the regulations require final validations be conducted in the aircraft/engine combination that the prospective certificate holder proposes be used in their ETOPS operation.

c. After the DAAO accepts the completed application package and the defined ETOPS processes it contains, inform the applicant to begin the execution of their process validation plan. The applicant will complete the process validation plan under DAAO observation.

d. The final step in the process validation plan is the validation flights. The applicant cannot institute the validation flight portion of the validation until the DAAO develops scenarios. Upon concurrence, DAAO will send a letter to the applicant to conduct validation flights.

Note: For a new entrant applicant part 121, it will typically require six non-revenue legs to complete the ETOPS validation process. For a new entrant applicant part 135, it will typically require two non-revenue legs to complete the ETOPS validation process. Proving runs, ditching, and evacuation exercises may be conducted concurrently with ETOPS flights provided these exercises do not interfere with the ETOPS validation.

e. Prior to initiation of ETOPS validation flights, the applicant must have all aspects of their ETOPS program successfully validated with one exception, that is the physical inspection of all the applicant proposed ETOPS stations/facilities. For new ETOPS operators, DAAO Team Members may conduct ETOPS station/facility inspections in conjunction with the ETOPS validation flights. It is understood that it may not be possible for DAAO Team Members to visit all of the operator's ETOPS station/facilities during the validation flight process. Ideally, a DAAO Team Member should accomplish an ETOPS station/facility inspection prior to an operator conducting revenue ETOPS operations at all of its stations. In the event that this course of action is not practical, DAAO Team Member must ensure that all of the operator's ETOPS stations/facilities are evaluated within 90 days after the commencement of revenue ETOPS service. The DAAO Team Member must ensure the accomplishment of these evaluations to make certain that every ETOPS station/facility contains all of the elements required to sustain successful ETOPS operations. In addition, DAAO Team Member must reevaluate existing ETOPS stations/facilities at a minimum of every 3 years to ensure the operator continues to maintain all of the elements required to sustain successful ETOPS operations.

f. If the validation flight process is successful, then the applicant may be granted ETOPS authorization.

CHAPTER 3 ETOPS VALIDATION FLIGHTS

The DAAO, after receiving the certificate holder's application, will validate the submitted processes and procedures. The validation process will conclude with validation flights. This ensures that the applicant policies, procedures, and training will enable the applicant to safely conduct ETOPS operations. For initial ETOPS approval, a CASR part 121 certificate holder required to fly one non-revenue flight leg. CASR part 135 certificate holder required to fly one flight leg under revenue, non-revenue, or carrying cargo only.

If the applicant has existing ETOPS approval with operational experience for at least 6 months, and is adding a new aircraft/engine combination, a change to their existing authorization (e.g. 120 minutes to 180 minutes), or a new geographic area of operation to its ETOPS approval, the applicant may be required to fly two flight legs (revenue service may be appropriate).

Prior to the initiation of validation flights, the DAAO will issue appropriate Authorizations, Conditions, and Limitations (ACL) that are restricted to validation flights only (see Chapter 5 of this Staff Instruction).

3.1. Validation Flight Emphasis Areas.

The following areas should be given special focus by the DAAO team during the approval process.

Note: Unless noted otherwise, all items are identical for both parts 121 and 135 operations.

a. Airplane and Flight Planning Data. The DAAO should ensure that the applicant is utilizing the appropriate airplane manufacturer's performance for the calculation of the ETOPS performance data. This information must be available for use by flightcrew members, dispatchers, flight followers, and flight locators and must include the following:

1) One-engine-inoperative level off (gross) fuel planning.

2) One-engine-inoperative level off fuel planning at 10,000 feet.

3) All-engine operating fuel planning to comply with oxygen requirements of Section 121.333.

4) The applicant must show it can obtain the appropriate winds aloft data for the area of operation in which they are planning to conduct operations. The wind forecasts model utilized in the flight planning system must be World Area Forecast System (WAFS) Gridded In Binary (GRIB) data wind forecasts. The GRIB forecast must have a minimum of 140 kilometers (km) horizontal resolution (1.25 degrees) or equivalent accepted by DGCA. This data must then be biased (increased) by 5 percent of the wind speed to correct for possible variations in the actual winds aloft could result in an increase in headwind or a decrease in tailwind.

Note: The 5-percent increase cannot be added to the tail wind component to improve the fuel burn calculation.

5) The flight planning system utilized by the applicant must base all ETOPS fuel calculations required by Section 121.646 on aircraft-specific performance data in accordance with their approved program for each aircraft type. If the applicant does not have an approved program to monitor the in-flight performance of each aircraft it operates and adjust fuel calculations accordingly, then each ETOPS fuel calculation utilized by the applicant must include a 5 percent fuel penalty to account for engine degradation and airframe drag.

6) The in-flight aircraft performance data and ETOPS fuel calculations must consider the additional fuel burn required to account for the use of engine and wing anti-ice for the entire time icing is forecast or ice accretion plus wing and engine anti-ice for 10 percent of the time icing is forecast, whichever is greater.

7) The ETOPS fuel calculations must also include fuel for auxiliary power unit (APU) use, if the APU is a required power source during the flight, and fuel to account for holding, approach, and landing.

b. ETOPS Area of Operation. The applicant must show before validation testing that the altitudes and airspeeds used in establishing the ETOPS area of operations for each airplane/engine combination comply with the terrain and obstruction clearance, as well as the critical fuel scenario associated with the applicable ETOPS equal-time point (Section 121.646) and the time-limited system requirements of Section 121.633 are not exceeded.

c. En Route Airport Information. Section 121.7 requires the applicant to assemble a list of airports for the proposed ETOPS area of operation. This list should be reviewed by the DAAO to determine that the applicant is able to access and maintain current information on the operational capabilities of the airports. The applicant's program should provide flightcrew members, dispatchers, flight followers, and flight locators with current and forecasted weather, field conditions, Notices to Airmen (NOTAM), rescue and fire fighting services (RFFS), and any other information that may affect the safe operation of the aircraft into the airport with one engine inoperative. See Figure 3.1, Foreign Airport Assessment Aid.

1) Adequate Airports. Section 121.7 allows an applicant to list an adequate airport, with DAAO approval. An adequate airport must meet the requirements of CASR part 139 or be an active and operational military airport. In order to be considered adequate for a specific ETOPS operation (flight), the airport must be open and the applicant should be able to show that they can land at the airport in accordance with the performance requirements of Section 121.197. Unless operating in North Atlantic oceanic airspace in accordance with OpSpec paragraph B041, the weather at an adequate airport does not have to meet the landing minimums specified in the applicant OpSpecs.

2) ETOPS Alternate Airports. Section 121.7 requires the applicant to list ETOPS alternate airports in their ACL. The applicant's may list these airports as being strictly for use as ETOPS alternate airports or they may also use any regular, provisional, or refueling airport that is listed in their ACL C70 for use as an ETOPS alternate.

3) Alternate Requirements. ETOPS alternate airports must meet the alternate requirements contained in the applicant's ACL C55 prior to takeoff. Once the

flight is en route, the weather minimums at an ETOPS alternate airport may fall below the minimums contained in ACL C55 but they must remain at or above the landing minimums prescribed in the applicant's ACL.

Note: Any time the weather at the designated ETOPS alternate drops below alternate minimums, the DAAO team must ensure that the applicant has procedures in place that indicate they shall make every effort to change the alternate to another approved airport within the maximum diversion time of the aircraft.

4) Operations Beyond 180 Minutes or in the North or South Polar Area. For operations conducted in the North or South Polar Area, the applicant must provide a specific passenger recovery plan for the designated ETOPS alternate airports (diversion airports).

Figure 3.1. Foreign Airport Assessment Aid

Foreign Airport Assessment Aid:				
Date of Assessment:				
Assessment Conducted by:				
Airport ICAO/IATA Identification:			Airport Name:	
Hours of Operation:				
Area	Regulation	Regulation	Details	Remarks
1	Personnel	CASR 139 *	Staffing hours	
			Operations phone number	
2	Airport Overview	CASR 121	Runways	
			Taxiways	
			Airport Qualification	
		CASR 139 *	Airport Obstacle Assessment ****	
			Restrictions	
3	Airport Lighting and Navigation Aids	CASR 121	Category III markings and ground surface movement area	
			Instrument Approaches Available	
4	Snow and Ice Control Plan	CASR 139 *	Prompt Removal	
			Access to Field Condition Reports	
5	Airport Rescue and Fire Fighting (ARFF)	CASR 121 **	Category and hours of operation	
		CASR 139	Personnel Trained	
			Hours of Operation	
			Storage of ARFF Vehicles	
			Contact phone number	
6	Aircraft Fueling		Type of fuel	
			Fuel auditing	
			Contact phone number	
7	Airport Emergency Plan	CASR 139 *	Contact information for aircraft or medical emergency	
8	Airspace			
		CASR 139 *	Airspace category	
			Controlled airspace hours of operation	
			Air traffic control tower or CTAF	
			Segmented circle and lighted wind indicator ***	
		CASR 121	Weather reporting access to metars	
			Availability of a TAF	
9	Public Protection	CASR 121 *		
		CASR 139	Security program to restrict access to aircraft movement	
	Note:			
	* Required for airport to be considered "Adequate" IAW 121.7			
	** ARFF ICAO Index 7 required for airports which the air carrier utilizes for operations beyond 180 minutes			
	*** Required only if the airport does not have a 24 hour tower operation.			
	**** Obstacles within the airport boundaries are accounted for by the assessment and properly illuminated.			

d. One-Engine-Inoperative Speed Selection. The one-engine-inoperative cruise speed is a speed that is within the certified operating limits of the airplane that the applicant specifies and the DAAO approves. The speed selected is used to determine the still air (no wind), 60-minute range (distance) centered on the adequate airports identified in subparagraph 3.1(c). If the route of flight takes the aircraft out of this area, the operation must be conducted in accordance with the approved ETOPS program (see Figure 2.1). The applicant makes the calculation for the ETOPS maximum diversion times (e.g., 120 or 180 minutes); utilizing the approved one-engine-inoperative speed. The ETOPS operation must remain within the maximum no-wind distance (based on the maximum diversion time) of the selected ETOPS alternate airports. Normally, the certificate holder will produce a planning chart (paper or electronic) that shows the normal one-engine-inoperative cruise range in the form of circles (Figure 2.1).

Note: ETOPS fuel calculations must take into account and comply with terrain clearance, Section 121.191, and oxygen requirements contained in Section 121.329 and Section 121.333. If the rule required for ETOPS in accordance with 121.646 exceeds the fuel required by Section 121.645, then the flight is considered to be "ETOPS Fuel Critical." The certificate holder must carry the greater of the fuel required by Section 121.645 and Section 121.646.

e. Recalculation of Flight Plan While En Route.

1) The applicant should have the capability to recalculate the flight plan after departure (in-flight reanalysis). Depending on the route of flight, the ETOPS Entry Point (EEP) can be many hours after departure. Section 121.631(c) requires a reanalysis of the weather at each ETOPS Alternate Airport prior to entry into the ETOPS airspace. An analysis of the current status of the aircraft systems should also be conducted to ensure all ETOPS significant systems are functioning normally. If the weather at any ETOPS alternate airport falls below landing minimums or any ETOPS significant system becomes inoperative prior to reaching the EEP, the certificate holder must evaluate the impact and take appropriate actions, which may require an in-flight reanalysis of the route of flight, fuel calculations, or any other elements of the flight plan.

2) In addition, the certificate holder should have the capability to re-calculate the flight plan in the event of an en route deviation or reroute to ensure that the aircraft remains within the maximum diversion time of the ETOPS alternate airports, or an appropriate adequate airport, if the new route of flight takes the aircraft out of the maximum diversion range of the listed ETOPS alternate airports.

f. Computer Flight Plan (CFP) System. The applicant should substantiate that the CFP and dispatch/flight release system is capable of providing the following information to the pilot and dispatcher:

1) Flight planning based on latitude/longitude as well as air traffic system routings in the event of an in-flight diversion.

2) Dynamic graphic display of ETOPS circles, based on speed selected during preplanning.

3) Depending on the aircraft type, the aircraft must be able to carry additional fuel for stronger-than-planned winds and additional fuel for icing.

4) A database with a list of suitable en route (ETOPS) alternates where the dispatcher would select from the list based on type of operation and aircraft; e.g., 120 or 180 minutes with a two- or four-engine aircraft.

5) Accuracy of internal computer calculations for the all critical fuel scenario calculations.

6) Ability to apply minimum equipment list (MEL)/Configuration Deviation List (CDL) restrictions and penalties unique to ETOPS operations.

7) Automated equal time point (ETP) calculations. (The certificate holder should maintain the ability to calculate and plot the ETP manually.)

8) Ability to plan a random route flight plan and depending on the operation, select the best route of flight based on a GRIB wind forecast.

9) Calculation of flight information region (FIR) entry and exit points.

10) EEP and ETOPS Exit Point (EXP) calculations and display on the computer flight plan.

11) Ability to display to the dispatcher and list on the CFP the forecast valid time of integrated GRIB wind data.

12) ARINC-424 navigation data to show consistency between the CFP and the Navigation Database (NDB) utilized in the airplane.

13) International duty/rest time calculations.

Note: The applicant should substantiate all values in the CFP system against aircraft manufacturer data prior to validation flights. The CFP values will be validated during the ETOPS validation flights.

g. Weather Information System. The applicant should substantiate that the weather information system that it uses can be relied on to forecast terminal and en route weather, including icing forecasts, with a reasonable degree of accuracy and reliability in the proposed areas of operation. Factors such as staffing, dispatcher, training, sources of weather reports and forecasts and, when possible, a record of forecast reliability should be evaluated.

h. Alternate Weather Minimums. Alternate weather minimums will be those listed in the applicant's Authorizations, Conditions, and Limitations (ACL) No. C55. These minimums must reflect the current requirements of 121.625 or 135.625, as applicable. Although no consideration is given for the use of Global Positioning System (GPS)/Area Navigation (RNAV) approaches, certificate holders may obtain authorization to use these approaches from the DAAO, who will authorize the approaches in the certificate holder's OpSpecs.

i. Communications. The applicant must have a communications system in place that complies with 121.99, 121.122, or 135.309, as applicable. The communication system is usually two-way very high frequency (VHF) radio, but alternate means such as VHF data link, high frequency (HF) voice or data link, or the applicant might

substitute a satellite communication (SATCOM) if approved by the DAAO. Refer to MEL considerations, limitations, and restrictions in accordance with 135.309 for part 135 operations.

Note: Currently the regulations do not permit SATCOM for North Atlantic operations.

j. Navigation. The applicant must show the availability of navigation facilities adequate for the operation, taking into account the navigation equipment installed on the airplane, the navigation accuracy required for the planned route and altitude of flight, and the routes and altitudes to the airports designated as ETOPS alternates.

k. Dispatch or Flight Release (Part 121 Only). For all ETOPS operations, the dispatch or flight release must list all ETOPS alternates and the planned ETOPS diversion time under which the flight is dispatched or released. (Sections 121.687 and 121.689)

1) The DAAO grants approval to conduct ETOPS greater than 180 minutes. In selecting ETOPS alternate airports, the applicant must make every effort to plan ETOPS with maximum diversion distances of 180 minutes or less, if possible. If conditions necessitate using an ETOPS alternate airport beyond 180 minutes, the route may be flown only if the requirements for the specific operating areas contained in part 121 appendix P, Section 1, paragraph (h) or (i) are met.

2) Two-hundred-and-seven-minute ETOPS in the North Pacific (NOPAC) area of operation and 240-minute ETOPS in the North Polar Area of the NOPAC, north of the equator, may be granted by the DAAO as an exception that may be used on a flight-by-flight basis. This exception may only be used when an ETOPS alternate airport is not available within 180 minutes.

Note: In accordance with section 121.633(b), any operation that is authorized beyond 180 minutes must be approved in accordance with the aircraft time-limiting systems, corrected for wind and temperature. In addition, the airplane must remain within the ETOPS-authorized diversion time from an adequate airport that is RFFS-equivalent to International Civil Aviation Organization (ICAO) Category 7 or higher.

3) The certificate holder must inform the flightcrew each time an airplane is proposed for dispatch for greater than 180 minutes and tell them why the route was selected. The reason for the route selection must be included in, or attached to, the dispatch or flight release.

Note: AC 120-42 should be reviewed for the specific criteria required for ETOPS operations greater than 180 minutes.

l. Public Protection.

1) Protection from the Elements. If the certificate holder is applying for ETOPS operations beyond 180 minutes and for operations in the North Polar Area and South Polar Area, dispatch/flight release policies and procedures must be included for facilities at each airport, or in the immediate area, sufficient to protect the passengers and cargo from the elements.

2) Passenger Recovery Plan. The applicant must provide training to flightcrew members and dispatchers relative to their perspective roles in the applicant's passenger recovery plan.

m. Potential Diversion Airports After Departure. The applicant must demonstrate that the pilot, dispatcher (domestic and flag operations), or the person authorized to exercise operational control (supplemental operations), typically known as a flight follower, is able to monitor the airports within the ETOPS area of operation.

1) The applicant must make information regarding weather, airport field conditions, and airport facilities readily available and should communicate this information to the pilot in command (PIC) in the event changes in these conditions would render an airport unsuitable for landing. For certificate holders operating under part 121 domestic or flag rules, this information will be communicated to the flightcrew by a dispatcher. For certificate holders operating under part 121 supplemental rules, this information will typically be communicated by a person authorized to exercise operational control by the certificate holder.

2) Prior to reaching the EEP, the PIC and the dispatcher or flight follower must ensure the capability and availability of all en route alternates to support any en route contingencies. Weather from the earliest to latest time of arrival (TOA) at an ETOPS alternate as well as the landing distances, airport services, and facilities must be evaluated. If changes to any of these conditions since the time of departure would preclude a safe approach and landing, the dispatcher or flight follower will notify the PIC and will select a new ETOPS alternate where a safe approach and landing can be made.

n. Emergency Conditions. DAAO team will ensure the following emergency conditions are simulated during the ETOPS validation flights:
1) Total loss of thrust of one engine (throttle at idle),
2) Total loss of engine-generated (or normal) electrical power,
3) Any other condition considered more critical in terms of airworthiness, crewmember workload, or performance risk.

Note: The critical scenario will result in an actual diversion to an alternate airport. Planned diversions must be coordinated with the applicable air traffic control (ATC) facility.

4) For a part 121 domestic and/or flag applicant, if a scenario requires the changing of en route alternates, a dispatcher must issue a new dispatch release. If the flight is en route, a dispatcher must communicate this revised release by voice or data link to the PIC for concurrence. If the flight is on the ground, the dispatcher may use any approved method to transmit flight documentation to deliver the amended release. The revised release should have current weather and any appropriate information for the new ETOPS alternate to it.

o. Diversion and Failure Scenarios. PIs should be sure that there was an assessment of scenarios for system failure and partial system failure. The DAAO should also include other diversion scenarios such as medical emergencies, onboard fire and loss of pressurization, or security threats.

p. Air Operator Certificate (AOC). Whenever the applicant conducts a flight to a destination outside the Indonesia, DAAO team should ensure that the aircraft has

an original, certified copy of the AOC on board the aircraft as required by ICAO Annex 6.

3.2. After Flight Reviews (Parts 121 and 135).

After the conclusion of each validation flight, the DAAO team and the applicant should conduct an in-depth review of the flight. All active participants in the validation flight should participate in the review. If there are any areas of concern to the DAAO team regarding the conduct or operation of the flight, the applicant must offer remedies prior to initiation of the next validation flight or final approval process.

CHAPTER 4 AUTHORIZATION TO CONDUCT ETOPS OPERATIONS

4.1. ETOPS Authorizations.

As stated earlier in this chapter, the DAAO determines the final decision on whether the certificate holder has demonstrated the appropriate qualifications to receive ETOPS authorization, the DAAO will issue ACL B42. This letter will be a reference for issuing OpSpec.

4.2. ETOPS Heightened Surveillance.

Although the certificate holder now has the authority to begin ETOPS revenue flights, heightened surveillance by the DAAO team will continue for 6 months.

CHAPTER 5 ISSUE OF AUTHORIZATIONS, CONDITIONS, and LIMITATIONS B42, ETOPS UNDER PARTS 121 AND 135 (AS APPLICABLE).

5.1. ETOPS Authority.

The DAAO may grant a certificate holder the authority to conduct ETOPS in accordance with part 121 appendix P and section 121.161 or part 135. Authority to conduct ETOPS is granted through the issuance of OpSpecs. ACL B42 is issued to certificate holders who have been granted approval to conduct ETOPS with two-engine airplanes, and with passenger-carrying airplanes with more than two engines.

5.2. Additional ACL.

In addition to the ETOPS ACL, the type of operation conducted may require additional ACL, such as:

- B36 for Class II Navigation, B37 if the operation involves Central East Pacific (Airspace) (CEPAC).
- B38 if the operation involves NOPAC airspace.
- B39 if the operation involves NAT/MNPS airspace.
- B40 if the operation involves AMU.
- B43 and/or B44 if the certificate holder has authorization to use these fuel reserves in ETOPS.
- If the operation involves transatlantic flight in the North Atlantic, these operations can also receive authorization under B41 if the capabilities of the aircraft permit North Atlantic Operations (NAT/OPS) under the 60-minute rule.

CHAPTER 6 ISSUE OF AUTHORIZATIONS, CONDITIONS, and LIMITATIONS D86 (MAINTENANCE)

6.1. Authorizations, Conditions, and Limitations D86.

Authorizations, Conditions, and Limitations D86 contains information on the aircraft, authorized diversion time in minutes, their maintenance programs, and the Configuration Maintenance Procedures (CMP) documents (as applicable) for the airplanes the certificate holder will use in parts 121 and 135 ETOPS.

6.2. Table 6.1.

Table 6.1 from ACL D86 contains information that identifies the aircraft and the number of minutes authorized diversion time.

Table 6.1

Registration No.	Airplane M/M/S	Maximum Diversion Time In Minutes
Enter registration mark of the authorized aircraft; i.e., PK-ABC	Enter the Make, Model, and Series of this aircraft; i.e., A 330-200	Enter the authorized maximum diversion time, in minutes; i.e., 180

6.3. Table 6.2.

Table 6.2 from ACL D86 contains information about the maintenance and reliability programs for each make, model, and series (M/M/S) of aircraft and engine combination used in ETOPS service.

Table 6.2

Airplane M/M/S	Program Name	Program Number	Program Date	Powerplant M/M/S	Program Name	Program Number	Program Date
Enter airplane M/M/S; i.e.,	Enter the name of the maintenance and/or reliability program for this M/M/S; i.e.,	Enter the program number if applicable; i.e.,	Enter the current revision date for this document; i.e.,	Enter Engine M/M/S for this aircraft; i.e.,	Enter the name of the maintenance and/or reliability program for this engine M/M/S; i.e.,	Enter the program number if applicable; i.e.,	Enter the current revision date for this document; i.e.,
B-767-332	CAMP	D003561	10/21/08	PW4060	CAMP	D003561	10/21/08

6.4. Table 6.3.

Table 6.3 from ACL D86 identifies the CMP documents that may be applicable to the aircraft/engine combination. These documents include non-optional service information such as Service Bulletins (SB), Service Letters (SL), manual revisions, etc., that must be incorporated into the aircraft and Continuous Airworthiness Maintenance Program (CAMP) prior to entry into ETOPS service.

Part 135 aircraft may not have an applicable CMP document. In these cases, enter "NONE" in the "CAA approved CMP Document Name/Number" block, leaving the rest of the blocks blank.

Table 6.3

Airplane M/M/S	Powerplant M/M/S	CAA-Approved CMP Document Name/Number	Document Date	CAA-Approved Amendment No.
Enter airplane M/M/S; i.e.,	Enter engine M/M/S for this aircraft; i.e.,	Enter the applicable CMP document number or name for the listed airplane-engine combination (if applicable); i.e.,	Enter the current revision date for this document; i.e.,	Enter the DGCA-approved amendment No. for the document; i.e.,
B-767-332	PW4060	D003561	10/21/08	P

6.5. Certificate Holders with Existing ETOPS Authority.

Recognize that once a certificate holder has authorization to conduct ETOPS, procedures and systems should be in place to support any additional ETOPS authority. Therefore, the application package for a certificate holder who is experienced in ETOPS and who is requesting a new aircraft/engine combination, a change to their existing authorization (120 minutes to 180 minutes), or a new geographic area of operation may not need to be as complex as an application package from a certificate holder who has never held ETOPS authority.

For certificate holders with existing ETOPS authority wishing to add a new ETOPS destination, an inspection of the new ETOPS station/facility must be conducted by an Airworthiness Inspector from the DAAO no later than 90 days after initial start-up. Additionally, for existing ETOPS stations that have never had a facility inspection or have not had an inspection within the last 24 months, a station/facility inspection by an Airworthiness Inspector and, if appropriate, an Operations Inspector should be conducted within 120 days of issuance of this guidance. The DAAO should make every effort to schedule complementary inspections during the same station/facility visit. For example, also conduct contract maintenance, fuel facility, CAMP requirements inspections, etc., as applicable.

CHAPTER 7 ETOPS SURVEILLANCE

7.1. Objective

a. **Surveillance Activities.** The objective of Extended Operations (ETOPS) surveillance is to ensure that the certificate holder continually maintains the highest possible level of safety in its ETOPS operation. Since extended-range programs have such a great potential for adverse safety impact if not properly administered, DAAO inspector with oversight responsibility for an ETOPS certificate holder must place special emphasis on surveillance activities. Surveillance consists of the following:

1) Trend analysis,
2) Problem identification and resolution, and
3) Implementation of corrective action.

b. **Daily Oversight.** In addition to the normally scheduled surveillance, daily oversight of the certificate holder's ETOPS program is essential to ensure the continued highest possible level of safety required for an effective ETOPS operation. Examples may include, but are not limited to, reviewing the certificate holder's daily fleet performance, event reports, adverse trends, and pilot reports. Daily oversight will lead to constant process improvement. Process improvement can only be achieved if good communications exist between the certificate holder and the DAAO.

Note: Additional information on the ETOPS surveillance process can be found in the current editions of Advisory Circular (AC) 120-42, Extended Operations (ETOPS and Polar Operations).

7.2. General

a. Phases of Oversight.

There are generally two distinct phases of ETOPS oversight. They are:

1) Initial Period. The initial period usually encompasses a heightened period of surveillance during the first 6 months after a certificate holder receives its ETOPS authorization. This is further broken down into two 3-month segments.

i. The first segment is a period of time where the DAAO and the certificate holder evaluate the new ETOPS programs in action. This is the "wring out" phase to identify any program weaknesses or potential problem areas missed during the validation process.

ii. The second segment of time is used to address issues found in the first segment. The certificate holder and the DAAO make adjustments or fine-tune the ETOPS programs. This ensures they consistently meet the requirements of the applicable rules, and the objective of ensuring the highest possible level of safety in the certificate holder's ETOPS operation.

Note: During the first 6 months of ETOPS operations many newly authorized certificate holders request additional ETOPS authority, such as an increase from 120 minutes to 180 minutes and/or the addition of new areas of ETOPS operation. Such requests illustrate another reason why the heightened surveillance period is particularly important.

2) Normal Surveillance. Normal surveillance follows the initial period. During normal surveillance, the inspectors must ensure that the certificate holder maintains their ETOPS program in accordance with the authorizations granted and continues to follow the policies and procedures contained in their program, including any revisions. Normal surveillance also includes required ETOPS reporting. You can find more information regarding ETOPS reporting later in this section.

b. **Types of Oversight.** There are two types of oversight:

1) Proactive Oversight. Proactive oversight focuses on prevention. It should include observation of actual ETOPS operations as they are being conducted, as well as thorough review of the certificate holder's ETOPS policies, procedures, documents, and manuals for deficiencies. In addition, ETOPS reports, flight records, training, facilities, and human factors should all be evaluated whenever possible. The focus here is prevention by actively and constantly looking for latent hazards that may exist in the ETOPS programs or the organization.

2) Reactive Oversight. This typically occurs after the fact when the ETOPS event has already occurred. These events include: in-flight shut downs (IFSD) of engines, diversions, and/or turn backs, lack of auxiliary power unit (APU) in-flight start reliability, and ETOPS significant systems reliability. Obviously, this list is not all-inclusive. In reactive oversight, you review and analyze ETOPS event reports to determine the root cause of an event and ensure the certificate holder has taken appropriate corrective action.

7.3. Operations Oversight

a. **Requirements.** In addition to the requirements of AC 120-42 (as applicable), the emphasis areas listed in this Staff Instruction for the validation flights are also applicable for flight operations surveillance and oversight. Additionally, the DAAO should ensure that the certificate holder is adhering to the time limitations authorized in their ACL B42

b. **Advance Notification.** The CASR 135 certificate holder should request advance notification of ETOPS operations during the first 6 months following ETOPS approval. This will allow the DAAO to observe these operations as they occur.

7.4. Maintenance Oversight.

Due to the critical nature of maintenance on a certificate holder's ETOPS program and its relationship to safety, place special emphasis on surveillance of the authorized ETOPS maintenance program.

a. **The Intent of ETOPS.** The intent of ETOPS is to preclude a diversion and (if it does occur) to have programs in place to protect that diversion. DAAO inspector should ensure that the certificate holder follows their ETOPS maintenance programs as outlined in the maintenance manual sections referenced in the ACL. The DAAO inspector should closely monitor any revisions to the certificate holder's program that could adversely affect the ETOPS program.

b. **ETOPS Culture.** Oversight should include conformation of a positive ETOPS culture at all levels of the organization. Surveillance and oversight will provide evidence that the corporate culture and infrastructure to support the ETOPS operation continues to exist. Additionally, surveillance will ensure the maintenance program continues to provide safe ETOPS operations.

Note: If the certificate holder's reliability program (Continuing Analysis and Surveillance System (CASS) (as applicable)) is marginal, an effective ETOPS program is questionable.

7.5. ETOPS Reporting

The principal inspector (PI) accomplishes ETOPS should make the reports directly to Director.

a. **Reporting an ETOPS Event.**

1) In addition to the reporting requirements in part 121, section 121.703 and section 121.705 and part 135, section 135.703 and section 135.705 , the certificate holder must report the following items on their ETOPS airplanes (regardless of ETOPS or non-ETOPS operation) within 96 hours to its DAAO:

i. IFSDs, except planned IFSDs performed for flight training.
ii. Diversions (including time) and turn-backs for failures, malfunctions, or defects associated with any ETOPS significant systems.
iii. Un-commanded power or thrust changes or surges.
iv. Inability to control the engine or obtain desired power or thrust.
v. Inadvertent fuel loss, unavailability, or uncorrectable fuel imbalance in flight.
vi. Failures, malfunctions, or defects associated with ETOPS significant systems.
vii. Any event that would jeopardize the safe flight and landing of the airplane on an ETOPS flight.

Note: If an event occurs on an ETOPS airplane during a non-ETOPS flight, the certificate holder has an obligation to report this event even though it was not an ETOPS flight. The key here is that because it is an ETOPS airplane, it is still a reportable event.

2) The PI's will report ETOPS event information to the Director.

b. **ETOPS Normal Reporting.**

In addition to the 96-hour requirements, the certificate holder is also responsible to submit a comprehensive report to the DAAO on a regular basis (customarily monthly) for part 121 and quarterly for part 135. Although the DGCA does not have a rule mandating these monthly or quarterly reports, AC 120-42 identify the requirement.

1) Part 121. Customarily, part 121 DAAO will received from the certificate holder the following information, on a monthly basis:

i. Summaries of IFSD rate—12-month rolling average
ii. Delays and cancellations related to the ETOPS event
iii. Number of ground events; i.e., aborted takeoff, power shortfall or loss, and unscheduled engine removals, and
iv. Number of events; i.e., APU failed to start, or failed in use, while intended for ETOPS or during an ETOPS event

Note: The monthly information is submitted as one report—generally called the ETOPS report.