Accelerated ETOPS Operational Approval

C.1 General

This appendix is a means to identify factors which Transport Canada may consider to allow a reduction or substitution of the operator inservice experience requirements prior to granting ETOPS Operational Approval.

An excellent propulsion related service safety record for two-engine aeroplanes has been maintained since the introduction of ETOPS. Current data indicates that the ETOPS process benefits are achievable without extensive inservice experience. Therefore, reduction or elimination of inservice experience requirements may be possible when the operator demonstrates that adequate and validated ETOPS processes are in place.

The Accelerated ETOPS Operational Approval Program with reduced inservice experience does not imply that a reduction of existing levels of safety will be tolerated but rather acknowledges that an operator may satisfy the objectives of TP6327 by an equivalent means when considering demonstrated operator capability.

This appendix permits an operator to start ETOPS when the operator has established that those processes necessary for successful ETOPS operations are in place and are considered to be reliable. It should be emphasized that failure to meet the established criteria, milestones or reliability levels may result in the losing of the ETOPS Accelerated Operational Approval.

C.2 Policy

C.2.1 ETOPS Process

The airframe-engine combination for which the operator is seeking Accelerated ETOPS Operational Approval must be ETOPS Type Design approved. The operator must demonstrate that it has a program in place to address the process elements identified in this section.

The following are the ETOPS process elements:

a) Airframe/engine compliance to Type Design Build Standard (CMP)

b) Compliance with the Maintenance Requirements (TP6327 Chp.4), requiring the following proven ETOPS programs to be in place:

1. Fully developed Maintenance Program, including tracking and control;

2. Oil consumption monitoring;

3. Engine condition monitoring;

4. Reliability;

5. Propulsion system monitoring; operator to establish a program that results in a high degree of confidence that the propulsion system reliability appropriate to the ETOPS diversion time will be maintained;

6. Training and qualification for maintenance personnel;

7. ETOPS parts control;

8. Aircraft discrepancy resolution.

c) Compliance with the Flight Operations Program for ETOPS (TP6327 Chp.3) which must address:

1. Flight planning and dispatch programs;

2. Availability of meteorological information;

3. Minimum Equipment List considering ETOPS;

4. Initial and recurrent training and checking program for flight operations personnel;

5. Flight crew and dispatch personnel familiarity with routes, and requirements for, and selection of, en route alternates.

d) Documentation of the following elements:

1. Technology new to the operator and significant differences in primary and secondary power (engines, electrical, hydraulic and pneumatic) systems between the aeroplanes currently operated and the aeroplanes for which the operator is seeking Accelerated ETOPS Approval.

2. The plan to train flight and maintenance personnel to the differences identified in 1) above.

3. The plan to use proven or manufacturer validated Training, Maintenance & Operations Manual procedures relevant to ETOPS for the aeroplane.

4. Changes to any previously proven or manufacturer validated Training, Maintenance or Operations Manual procedures described above. Depending on the nature of the changes, the operator may be required to provide a plan for validating such changes.

5. Details of any ETOPS program support from the airframe manufacturer, engine manufacturer, other operators or any other outside agency.

6. The control procedures when maintenance or flight dispatch support is provided by an outside party as described above.

C.2.2 Application

Operators shall submit an "Accelerated ETOPS Operational Approval Plan" to Transport Canada 6 months before the proposed start of operations. This period will give an opportunity for the operator to incorporate any refinements that may be required to achieve an Accelerated Approval.

The operator's application for accelerated ETOPS should:

a) define proposed routes and necessary diversion times;

b) define processes and resources allocated to initiate and sustain ETOPS;

c) identify plan for establishing and maintaining ETOPS build standard compliance;

d) document plan for compliance with items outlined in Paragraph C2.1;

e) define Review Gates (a Review Gate is a milestone tracking plan to allow to define the tasks and timing for the necessary tasks to be accomplished); items for which TCA visibility or approval is sought should be included in the Review Gates.

C.2.3 Operational Approvals

Operators will be considered on individual merit and capability (case-by-case basis). Accelerated ETOPS approval is not guaranteed and operators should await approval prior to planning revenue extended range operations.

Operational approvals which are granted with reduced inservice experience should be limited to those areas agreed by TCA contained within the Accelerated ETOPS Approval Plan. Should the operator wish to add or expand the request TCA concurrence is required.

Operators may be eligible for ETOPS Operational Approval up to the Type Design Approval limit.

C.2.4 Process Validation

The operator should demonstrate that the process, discussed in paragraph C2.1, is in place and functions as intended. This may be accomplished by thorough documentation and analysis, or by demonstration on an aircraft (simulation).

If an operator is currently operating ETOPS on different equipment only minimal documentation may be necessary.

The following elements are beneficial in justifying a reduction in the validation requirements of the ETOPS process:

a) Experience with other similar airframes and or engines.

b) Previous ETOPS experience.

c) Long range, overwater operational experience.

d) Flight crew, maintenance and flight dispatch personnel experience with ETOPS.

A process may be validated initially by demonstration on a different aeroplane type. It is then necessary to demonstrate that means are in place to assure equivalent results occur on the aeroplane being proposed for accelerated ETOPS.

Any validation program should address the following:

a) Assurance that the validation program will not be allowed to adversely impact actual safety of operations especially during periods of abnormal, emergency, or high cockpit workload operations. It should emphasize that during these abnormal situations that the validation exercise may be terminated.

b) A means to monitor and report performance with respect to accomplishment of tasks associated with ETOPS process elements. Any changes to ETOPS maintenance and operational process elements should be defined.

C.2.5 Accelerated ETOPS Surveillance

Operators must be aware that any deficiencies associated with engineering and maintenance programs, flight dispatch or flight crew performance may result in the rejection of, amendment to, the claimed credit for reduced in-service experience.

Therefore, an accelerated program leading to an Operational Approval is considered feasible so long as the operators retain commitment to the standards which are contained in their ETOPS Operational Approval Plan and associated programs. During the first year of operation close monitoring will be exercised.

C.2.6 Minimum Requirements

As detailed in Chapter 3 the basic operational experience requirement for a given aircraft/engine combination is:

a) 12 months operation for 120 minute approval;
b) 3 months of 120 minute ETOPS experience for 138 minute approval; and
c) 12 months of 120 minute or greater ETOPS experience for greater than 138 minutes.

The Accelerated ETOPS Operational Approval allows a reduction in service experience related to the degree that the operator ETOPS program can be validated and performance assured. The typical operational experience requirements for a given aircraft-engine combination is:

a) Nil experience for 75 minutes (ETOPS CMP and program in place);
b) 3 months ETOPS experience for 90 minute approval; and
c) 6 months ETOPS experience for 120 minute approval.

All inservice experience requirements noted above assume acceptable performance. Operator ETOPS program difficulties may require additional inservice experience and/or remove the eligibility for Accelerated ETOPS Operational Approval.