

(ii) Maximum duration flights with maximum duration diversions.

(iii) Maximum duration engine-inoperative diversions distributed among the engines installed on the airplanes used for the airplane demonstration flight test program. At least two one-engine-inoperative diversions must be conducted at maximum continuous thrust or power using the same engine.

(iv) Flights under non-normal conditions to demonstrate the flightcrew's ability to safely conduct an ETOPS diversion with worst-case ETOPS significant system failures or malfunctions that could occur in service.

(v) Diversions to airports that represent airports of the types used for ETOPS diversions.

(vi) Repeated exposure to humid and inclement weather on the ground followed by a long-duration flight at normal cruise altitude.

(2) The airplane demonstration flight test program must validate the adequacy of the airplane's flying qualities and performance, and the flightcrew's ability to safely conduct an ETOPS diversion under the conditions specified in section K25.2.2(g)(1) of this appendix.

(3) During the airplane demonstration flight test program, each test airplane must be operated and maintained using the applicant's recommended operating and maintenance procedures.

(4) At the completion of the airplane demonstration flight test program, each ETOPS significant system must undergo an on-wing inspection or test in accordance with the tasks defined in the proposed Instructions

for Continued Airworthiness to establish its condition for continued safe operation. Each engine must also undergo a gas path inspection. These inspections must be conducted in a manner to identify abnormal conditions that could result in an IFSD or diversion. The applicant must identify, track and resolve any abnormal conditions in accordance with the problem tracking and resolution system specified in section K25.2.2(h) of this appendix.

(h) *Problem tracking and resolution system.* (1) The applicant must establish and maintain a problem tracking and resolution system. The system must:

(i) Contain a process for prompt reporting to the FAA office responsible for the design approval of each occurrence reportable under §21.4(a)(6) encountered during the phases of airplane and engine development used to assess Early ETOPS eligibility.

(ii) Contain a process for notifying the FAA office responsible for the design approval of each proposed corrective action that the applicant determines necessary for each problem identified from the occurrences reported under section K25.2.2. (h)(1)(i) of this appendix. The timing of the notification must permit appropriate FAA review before taking the proposed corrective action.

(2) If the applicant is seeking ETOPS type design approval of a change to an airplane-engine combination previously approved for ETOPS, the problem tracking and resolution system need only address those problems specified in the following table, provided the applicant obtains prior authorization from the FAA:

If the change does not require a new airplane type certificate and . . .	Then the Problem Tracking and Resolution System must address . . .
(i) Requires a new engine type certificate	All problems applicable to the new engine installation, and for the remainder of the airplane, problems in changed systems only.
(ii) Does not require a new engine type certificate	Problems in changed systems only.

(i) *Acceptance criteria.* The type and frequency of failures and malfunctions on ETOPS significant systems that occur during the airplane flight test program and the airplane demonstration flight test program specified in section K25.2.2(g) of this appendix must be consistent with the type and frequency of failures and malfunctions that would be expected to occur on currently certificated airplanes approved for ETOPS.

K25.2.3. Combined service experience and Early ETOPS method.

An applicant for ETOPS type design approval using the combined service experience and Early ETOPS method must comply with the following requirements.

(a) A service experience requirement of not less than 15,000 engine-hours for the world

fleet of the candidate airplane-engine combination.

(b) The Early ETOPS requirements of K25.2.2, except for the airplane demonstration specified in section K25.2.2(g) of this appendix; and

(c) The flight test requirement of section K25.2.1(e) of this appendix.

K25.3. Airplanes with more than two engines.

An applicant for ETOPS type design approval of an airplane with more than two engines must use one of the methods described in section K25.3.1, K25.3.2, or K25.3.3 of this appendix.

K25.3.1 Service experience method.

An applicant for ETOPS type design approval using the service experience method must comply with section K25.3.1(a) of this