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Federal Aviation Administration
Office of Chief Counsel, Rules Docket Office, [29547]
800 Independence Avenue, SW,
Room 915-G
Washington, DC 20591

FAA-99-6717-9

May 24, 1999

Subject: 207-Minute ETOPS Approval Criteria

Dear Sirs:

As ETOPS Check Airmen for a major international airline, we would like to express our support for 207 minute ETOPS.

We teach, check, and evaluate new Check Airmen and line crews in the North Atlantic and Pacific. We also accomplish these duties in Latin America.

The 180 minute ETOPS in the North Atlantic has been a big success. At our Company, only two power-plant related diversions have occurred during ETOPS. This is from a total of more than about 136,000 crossings since we began service in April 1985. In the most recent diversion, the landing was made with both engines operating.

We are training ETOPS crews to constantly be aware of diversion airports – whether listed by dispatch on the flight plan or not! The flight plan may not be the only plan!

ETOPS are ETOPS! This same philosophy would apply in the North Pacific. Even though a flight may be dispatched under the 180-minute rule with several suitable alternates listed on the flight plan, a crew would be very wise to consider a diversion *also* into other suitable airports that may have operational weather minimums.

These suitable airports may not have had a “suitable weather forecast” at the time the flight was DISPATCHED. However, once the aircraft is airborne, the actual weather may have improved. Or, once the aircraft reaches the area of ETOPS, which may be after five to six hours after takeoff, the weather could have improved. Maybe it doesn’t meet the “suitable weather requirements for dispatch” (and it doesn’t have to by any means!), but it may very well meet operational requirements to allow an airplane to successfully land in the event of a diversion.

So, for a North Pacific flight dispatched under the 180-minute rule, like one over the North Atlantic, there are many options other than those listed on the flight plan.

That is also true during the maybe 3-4 times in a year when a dispatcher is unable to release a trip because two suitable alternates at release time are farther than 180 minutes from each other. These rules are contained in the Advisory Circular 120-42A. In this rare case, the following options are available:

- a. Cancel the trip.
- b. Select a lower track using Midway Island so that the aircraft is always within 180 minutes of suitable airports. This is a great plan in theory, but possibly a horrible plan in reality. The dispatcher will route the aircraft away from adequate airports that could operationally be fantastic for a diversion – depending on the problem! This circuitous routing will necessitate a higher fuel load. The results would be higher takeoff gross weights, decreased ability to climb to higher altitudes, and lower payloads.
- c. Operate the trip based on the “60 minute rule.” This is where the aircraft always remains within 60 minutes of an adequate airport.
- d. Or, operate the trip under the new (proposed) 207-minute ETOPS rule. The aircraft may be just 70 to 220 NM (depending on track) outside of the 180-minute radius of two suitable airports. First of all, this is between 7 and 31 minutes of flying time. Secondly, there are still adequate and suitable airports that may be, and probably are, operationally usable.

Consider the following:

- Over the last 50 years of commercial jet service, there has never been a 180 minute diversion in anywhere in the world!
- For the 12 months ending September 30, 1998, there were 24,200 B-777 ETOPS flights. There were 43 reported events from takeoff to landing. Of these, only 2 occurred during the ETOPS portion of the trip. A majority of air interruptions occur outside the ETOPS portion of flight.
- Engine In-Flight Shutdowns (IFSD) typically do not occur in cruise. IFSDs occur normally when high power settings are used in the takeoff and climb regimes of flight.
- Of the 1,081,700 B-767 ETOPS flights between May, 1985 and September 1998, there were a total of 105 air interruptions during the ETOPS portion. The majority were caused by reasons other than power-plant problems.
- In the entire year of 1998 there were 195,000 ETOPS flights by 767s and 777s. There were just 3 engine-related diversions during the ETOPS portion of flight.

Conclusions:

- The 207 minutes will be applied on a flight-by-flight exception basis. The Company will submit a report to the FAA on all 207 minute ETOPS.

- Dispatch will review **enroute** alternates and advise the flight crew of all suitable alternates within **207** minutes of the planned routing.
- Diversion is not an unsafe condition. It is a planned capability that enhances aviation safety.
- Weather or ill passengers cause about **90%** of all diversions.
- Diversions may occur regardless of how many engines an airplane has, and are thus not exclusively a **twinjet** or an **ETOPS** issue
- Four-engine jetliners like the **747** make proportionally more total diversions than twinjets.
- Four-engine jetliners make proportionally more engine related diversions than twinjets.
- In general, infrastructure and weather issues do not significantly constrain **ETOPS** flights relative to four-engine operations.
- MEL requirements will be, but not limited to the following:
 - a. **SATCOM** voice and/or data link
 - b. Ability to make single engine **autoland**
 - c. **FQIS** (Fuel Quantity Indicating System)
 - d. **APU** (including electrical and pneumatic supply to its designed capability)
 - e. Autothrottle system

In conclusion, we two Check Airman support the proposed **ETOPS** extension to **207** minutes and feel that there are adequate safe guards built in to support this new operation.

Basically, engine and system reliability is excellent and will get better. **ETOPS** is more of an engineering issue than an operational issue.

Sincerely,

Capt. Richard Levy


Captain Douglas Reitz