

**Submitted to
Federal Aviation Administration
Washington, DC 20591**

In Re:)	
)	
207-Minute Extended Range Operations with Two-Engine Aircraft (ETOPS))	Docket No. FAA-99-6717
)	
Disposition of Comments; policy statement for 207-minute ETOPS; request for comments)	

Comments of Airbus Industrie

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Executive Summary

Airbus Industrie is pleased to provide these comments in response to the Federal Aviation Administration (FAA) publication, in the Federal Register dated January 21, 2000, of its policy statement on 207-Minute Extended Range Operations with Two-Engine Aircraft (ETOPS). We note with appreciation the FAA willingness to publish its proposed decision on this matter and seek public comments prior to implementation of the new policies. For reasons noted in the following comments, Airbus continues to believe that the proposed policy of extending maximum ETOPS diversion times to 207 minutes for 3 of its flag carriers for their North Pacific operations is inappropriate until international agreement is reached on applicable standards.

Fundamentally, the proposed FAA action provides for more economic flight paths under certain weather conditions. Those weather conditions make it impossible for the airlines that would use this new authority to identify airports along the proposed route for which weather is good enough to permit using them as ETOPS diversion airports. Instead of requiring that airlines plan a flight along a more southerly route so as to fly within 180 minutes of an airport where weather is good enough to permit its use as an ETOPS alternate, this new FAA authority stretches the maximum permissible diversion time to 207 minutes, to permit 3 US airlines dispatch along the more northerly route when weather along that route is poor.

It is argued that the more northerly route takes the flight closer to more airports in the event of the need to divert, which may be true, depending upon the weather. Unfortunately, the typical use of this 207-minute authority will occur in the winter, when diversion to one of those North Pacific airports can be expected to occur in very bad weather conditions from a passenger well being viewpoint. Many of these airports have minimal or no hotel, medical and other facilities, which makes passenger well being a prime concern, given the frigid North Pacific winter weather. Indeed, the FAA is acting in the absence of any discussion of the issues associated with passenger well being in the event of a diversion to one of these airports, and without any international agreement on standards that should be applied to such situations.

FAA has not specifically addressed, in this publication, a number of comments raised by Airbus and others, as discussed herein. The specific risk analysis criteria FAA has used to evaluate the safety tradeoffs inherent in its decision-making have not been presented, and the criteria used to evaluate an aircraft's suitability for 207-minute ETOPS are also not presented, making comment on them somewhat difficult. FAA's explanation of its position on aircraft certification for ETOPS operations appear to require the filing of a "difference" from ICAO standards with regard to its lack of compliance with standards of Annex 6 and Annex 8.

FAA has announced its intent to establish an Aviation Rulemaking Advisory Committee group to develop standards for greater than 180-minute ETOPS operations, and other related issues for all aircraft operations, as suggested by Airbus and others in comments. Airbus Industrie welcomes this announcement, and will actively participate in the development of these important standards. FAA should wait for the development of harmonized standards, rather than applying its own unique policies to beyond-180 minute ETOPS operations of its national carriers.

General

Airbus Industrie is pleased to provide these comments in response to the Federal Aviation Administration (FAA) publication, in the Federal Register dated January 21, 2000, of its policy statement on 207-Minute Extended Range Operations with Two-Engine Aircraft (ETOPS). For further information on any of the points raised herein, please contact Dr. John K. Lauber, Vice President, Safety and Technical Affairs, telephone 202-331-2239.

As noted in our comments filed on June 11, 1999, in response to FAA's publication of the proposal of the Air Transport Association (ATA), continued and expanded safe ETOPS operations of the civil airline fleet worldwide are important to us. Airbus Industrie is eager to participate in developing an appropriate set of internationally harmonized regulatory and guidance material that would provide clear and unambiguous regulatory guidelines that provide for safe ETOPS operations worldwide. While we are disappointed that FAA deems it acceptable to continue its administration of US airline ETOPS operations by ad hoc revision of policy without such a regulatory basis, we are pleased that FAA has decided to accept the suggestion of Airbus and others to establish an effort to develop those regulations for future application. Airbus will actively participate in that activity.

These comments address first the specific points contained in the FAA Policy Statement following the numbering scheme and titles presented by FAA, followed by discussion of issues Airbus finds relevant to the matter at hand despite the FAA's lack of discussion of them in its disposition of comments.

Specific Points Discussed by FAA

(1) No Justification for Change

More than one comment provided to FAA noted that the proposal by ATA was not accompanied by any explicit statement of need for the change to ETOPS rules. FAA responded that several commenters had favorably remarked on the proposal, and one airline had commented on the improved economics of the route using 207-minute authority with "no degradation in safety." FAA itself noted that "the introduction of a 207-minute authorization ... may in fact position the flight closer to more enroute alternate airports," and that "would be both an operational and safety benefit." It is unfortunate that FAA did not provide any specific data would permit assessment of this assertion.

While it may be true that the use of 207-minute authority in the North Pacific area may at times position flights closer to more enroute alternate airports, it is unfortunately also true that these alternate airports, especially in the winter (when the 207-minute authority is expected to be most needed and used), are extremely hostile environments. In addition, the weather forecasts at the time of dispatch of these 207-minute flights are by definition, for these airports, worse than that which would be acceptable for a normal 180-minute ETOPS

flight. Without the specific data used by FAA it is impossible to evaluate the safety tradeoffs that were made to arrive at the conclusion that 207-minute ETOPS authority provides an equivalent level of safety to dispatch under 180-minute limitations.

(2) Some Diversion Airports May Become Redundant and Risk Closure

FAA, in this part of its disposition of comments, acknowledges that the potential closure of airports that are used mainly as enroute alternates is an international problem related to more than ETOPS and requires broad solutions involving other countries. Airbus agrees with this, and looks forward to working with others to find ways to improve this situation.

In its discussion of this point, FAA estimates that 10 percent of the flights would benefit from a 207-minute dispatch authority, and the rest would continue to be dispatched under 180-minute authority. Elsewhere in the document this value is cited as 10 to 15 percent, and it is noted that the 207-minute authority would mostly benefit eastbound flights to the United States, because these flights generally depart at night, when weather forecasts are worse than during daylight.

Thus, instead of the relatively rare “case-by-case exception basis” use of the 207-minute authority contemplated in the original ATA proposal, travelers from Asia to the US on several US airlines can, under this new authority, expect to find themselves on flights dispatched under 207-minute ETOPS rules often during the winter months, when the weather at the nearest diversion alternates is worst. In addition, these more northerly airports have substantially more hostile ground environments than alternative ones, and the alternative routes are less economical to fly on occasions when 207-minute diversion authority is used.

(3) The Proposal Is Too Broad

FAA clarifies, in this section, its intent and notes that “the 207-minute ETOPS operations [authorities] are intended to apply only to the North Pacific area of operation,” and only to airlines that have previous 180—minute ETOPS experience. FAA notes that this is not a general 207-minute policy, “which would give the illusion that a higher [than 180-minute] ETOPS threshold has been accepted.” FAA notes that much further discussion would be required to establish general standards for ETOPS beyond 180 minutes, and expects that discussion to take place in a future ARAC harmonization initiative. In the meantime, FAA is exercising its regulatory authority, unique to FAA rules, to permit 3 airlines that seek this 207-minute ETOPS authority to exercise it in the North Pacific area of operations. Airbus welcomes this clarification.

(4) The Proposal Reduces Weather Standards for Diversion Airports

FAA denies that the 207-minute ETOPS authority would reduce the conservatism inherent in weather minimums required by present ETOPS rules for diversion airports. We cannot understand the rationale for FAA taking this position. In fact, the reason that this authority was sought by the ATA was to provide an ability to fly a North Pacific route that, *because of poor weather forecasted at the time of dispatch*, could not “legally” be flown under 180-minute ETOPS authority. The solution to this problem proposed by ATA was to permit the 180-minute authority to be relaxed, to 207-minutes, so that a distant airport (Midway) could be accepted as an alternate, and the original route, which had inadequate weather forecasted for 180-minute diversion authority, could be flown under the 207-minute authority.

There is no question that the effect of this new 207-minute authority is principally to permit dispatch on 180-minute ETOPS routes in the North Pacific when the weather is forecast to be worse than that required under 180-minute dispatch rules.

The FAA provides this rejoinder: An airline dispatch study “showed that those “adequate” airports within the 180-minute distance that did not meet the pre-departure alternate weather criteria did in fact stay at or above the [worse] operational approach minima for the expected times of arrival of the flight (if the flight had to divert to the alternate airport).” This misses the point of those who commented on this aspect. The fact is that the forecast weather for this route is inadequate to permit dispatch under 180-minute ETOPS rules, and it is for this reason that a more distant (207 minutes away) airport needs to be cited to permit “legal” dispatch. The actual route flown does not change; only the list of alternate airports changes, adding one that is further away (but has weather that meets ETOPS dispatch requirements). In other words, the 207-minute ETOPS authority being approved by FAA has the fundamental result of chipping away at the conservatism in weather forecasts that has been required for the past 15 years for ETOPS flying. Additionally, these remote alternate airports have less basic ability to produce accurate weather forecasts to begin with, and this flaw will not improve in an environment of deteriorating North Pacific weather.

(5) ETOPS Should Be Formalized in Regulations Rather Than Administered Through Advisory Circulars and Policy Letters

A large number of comments were received by FAA that supported the use of regulations, rather than advisory and policy material, for the control of ETOPS flights. FAA noted the public nature of the past development of these ETOPS materials, and noted that the limited scope of the 207-minute ETOPS dispatch authority it was going to permit would not result in a corresponding revision to AC 120-42, which governs ETOPS operations of US carriers. FAA agrees on the need for ETOPS rulemaking, and cites its intent to develop them through an ARAC working group for Part 121 of the Federal Aviation Regulations

(FAR).

Nowhere in this disposition of comments, however, does FAA acknowledge the need to similarly develop certification standards for ETOPS, to be incorporated into FAR Part 25. In view of the International Civil Aviation Organization (ICAO) requirement that such regulations be adopted by the State of Design, Airbus suggests that the certification issues be included in the FAA ARAC working group charter.

(6) ETOPS Regulations Should Be Driven by Safety

FAA notes that Airbus had raised the issue of the 180-minute maximum diversion time being a “limitation” on the B-777, but takes the position that this was not correct. The FAA position is that “the ETOPS approval statement in the Type Certificate Data Sheet is a finding of suitability based on a review of the type design and reliability of the airframe/engine combination.” This is not only a conflicting assertion but in fact a violation of the requirements of ICAO, inasmuch as the FAA has never filed a “difference” with ICAO, as required by Article 38 of the Chicago Convention when a State deems it impractical to adopt ICAO standards. ICAO standards require, in Paragraph 9.2.7 of Annex 8 to the Chicago Convention, that certification of airplanes include a limitation specifying maximum ETOPS diversion time.

FAA further, in this section, takes note of the Airbus comment that risk assumptions and models used in ETOPS risk management need public review. FAA responds that such “technical matters, like risk assumptions and analyses, ... are normally not public information because they contain information of a proprietary nature.” In the context of the ATA proposal for 207-minute ETOPS authority, we do not believe that the risk models to be employed should be considered to be proprietary, since it is these very models that will determine the safety level of the operations to be conducted. It is understandable that design details or even some reliability data might be considered “proprietary,” but the models themselves, which form the fundamental basis for the safety decisions to be made, surely should be publicly disclosed. As it is now, the only public information available on the numerical probability analysis to be required by FAA is the fact that it exists. There are no details that permit one to understand what is to be analyzed, and what the results must be if the analyses are to be deemed acceptable.

FAA does not agree with comments that it is necessary to specify a more conservative (lower) maximum in flight shut down rate for engines in order to receive and continue to exercise 207-minute ETOPS approval. In part, FAA bases this conclusion on its belief that “the B-777 has clearly established an in-flight shut down rate far better than the .02/1000 standard.” That position misses the point that it is possible, in future, that this present demonstrated in-flight shut down rate may worsen, for any number of real-world reasons. Not establishing a maximum in-flight shut down rate consistent with the increased permissible diversion time and increased flight lengths in the North Pacific is inconsistent

with past FAA practice that made shut down rates increasingly stringent as ETOPS limits were relaxed from 120 to 180 minutes. Airbus believes that a reasonable application of a commonly accepted (ICAO) ETOPS risk model would show the need for a lower shut down ceiling than that proposed by ATA. It is acknowledged that this ceiling would not be approached given today's statistics, but that is no guarantee that the statistics will not change. The future analysis of such data, with the 0.019/1000 standard proposed by ATA, may lead to acceptance of continued ETOPS flights under 207-minute authority that have lower safety margins as calculated by accepted risk models than today's 180-minute operations. This does not seem appropriate.

(7) ETOPS Rules Should Be Harmonized with International Rules

While stating that "FAA has been and remains committed to harmonization of regulatory requirements to the extent possible with international rules," FAA also notes that "it is not appropriate for the FAA to delay action on the proposal in order to harmonize its position with other regulations, when appropriate regulatory action has been determined." This is a perplexing and disturbing state of affairs, for it appears to indicate that when FAA has made its own decisions on regulations, it will not invest in the harmonization of them with other countries.

Harmonization of regulations need not cost time. FAA has been working, either informally in the ATA work group or since receipt of this proposal, for perhaps 3 years or more on this issue. Surely, had the agency decided from the beginning that it wanted a harmonized rule in regard to 207-minute ETOPS, that project could today be at the same state of development as the instant *ad hoc* policy revision. It is again inconsistent that FAA does not act in the manner advocated by many commenters to foster harmonized regulations, despite acknowledging its commitment to do so.

FAA again in this section notes that "the 207-minute ETOPS is being accepted because it adds a safety benefit to ETOPS conducted in the North Pacific." As noted earlier, the "safety benefit" associated with this new policy consists of permitting dispatch over a 180-minute ETOPS route, under worse forecast weather conditions than would be permitted under existing 180-minute ETOPS rules, by permitting the airlines to cite a more distant diversion airport where weather in fact meets the 180-minute dispatch criteria. It does not appear that adoption of this "safety benefit" should be associated with any urgency.

(8) 207-Minute Proposal Specifies Equipment Requirement

In this section of the disposition of comments, FAA reviews a number of comments on specific equipment requirements contained in its 207-minute policy. FAA makes clear its belief that these equipment requirements are an integral part of its finding of an equivalent level of safety. Airbus will participate actively in the review of these requirements in the context of the ARAC working group.

(9) An Industry/Government Working Group Should Be Formed to Review 207-Minute Operations

Concern was expressed by some commenters, including Airbus, that the present system for monitoring ETOPS operations was inadequate, but FAA disagrees. Noting that it "constantly monitors the application of ETOPS requirements, and the airlines' performance, to maintain acceptable standards," FAA declines to commit to providing either a government/industry monitoring group (as suggested by the Air Line Pilots Association) or to increase FAA's own ETOPS monitoring resources.

Airbus applauds FAA's commitment to providing the public with 207-minute ETOPS usage reports based on detailed data collected from each airline, and looks forward to working with FAA and others to review these data.

(10) Extended Range Operations for "All Cargo" Airplanes are Not Safe and Should Not Be Allowed

Airbus concurs in FAA's analysis of this comment, and looks forward to addressing the issue further in the ARAC working group.

Points Not Adequately Addressed by FAA

(11) Passenger Safety at Diversion Airports Not Addressed by FAA

Airbus and others commented on the extreme conditions that can be encountered when diverting to North Pacific airfields during the winter season, where extremely cold temperatures can easily range from -30 to -50°F or even lower. Without adequate facilities for passenger accommodation (which is the case at many of the North Pacific diversion airfields), evacuees are placed in real danger in the event of a winter diversion to one of these airfields. The lack of adequate passenger accommodation, medical facilities and even food for large numbers of passengers brings into question the adequacy of FAA requirements for diversion airfields. We believe these passenger safety issues are of paramount importance, and are disappointed that FAA has not addressed them before approving this expansion of ETOPS operations.

We recognize that there does not today exist an internationally accepted set of criteria that establishes the minimum standards for passenger safety and well being for the kinds of harsh environments that can routinely be expected at North Pacific diversion airfields. FAA does not specifically address these issues in its disposition of comments, but only indirectly refers to the fact that these airports meet all present criteria applied to ETOPS alternates. This new policy, as explained earlier, has the effect of making it *more* likely that, should a diversion occur in winter, it would be to a more northerly (and therefore more

harsh) airport. It appears inappropriate to establish new policies that increase the likelihood of diversions to harsh environments without first addressing the fundamental minimum passenger safety concerns raised.

(12) ICAO Requirements

Since the mid-1980's ICAO has incorporated into Annex 6 and Annex 8 to the Chicago Convention standards for ETOPS. (The term ETOPS is not used by ICAO, but we employ it here for clarity.) Specifically, Annex 6 provides that the State of the Operator follow prescribed standards for approval of ETOPS operations, and Annex 8 provides that the State of Design shall establish aircraft *limitations* appropriate to the maximum approved diversion time. The operations requirements of Annex 6 specifically refer to the need to ensure the airworthiness certification of the aircraft used provides the overall level of safety provided by the ETOPS requirements of Annex 8 in approving the ETOPS operations.

FAA has apparently decided, as noted several times in its disposition of comments, that it does not apply ETOPS "limitations" in the certification process as required by ICAO, but only makes a "determination of suitability" of the airplane prior to issuing the ETOPS approval to the operator.

When a Contracting State determines that it is impractical to comply with the standards of the ICAO annexes, it is required by the Chicago Convention to file a "difference" which will be notified to other Contracting States for their information and appropriate action. FAA has not initiated this process, and it would seem necessary to do so if the US is to fulfill its ICAO obligations.

(13) Conditions for Dispatch Under 207-Minute Authority Not Well Defined

FAA has not made clear which situations other than poor pre-dispatch weather conditions at enroute alternate airports permit dispatch under the 207-minute authority. As we noted in our comments, the third sentence of the proposed Policy Letter's paragraph c. states that adequate enroute airports must exist on the proposed 207-minute ETOPS route. It further requires that these airports be available and that, if they had been "suitable" for dispatch purposes, they would have permitted operation on the route within 180-minute ETOPS guidelines of AC 120-42A. Thus, the *only* condition that would permit the use of 207-minute authority as proposed here would appear to be normal "below minimums" weather, applying the definitions provided in Paragraph 4 of AC 120-42A. However, elsewhere in this document we note that the justification for the creation of these relaxed standards includes "political concerns, airport suitability conditions due to higher weather minima at dispatch, various weather related events, and operational necessities." In addition, in yet another place the proposal cites "volcanic eruptions or other temporary closures" of airports as being justifications for the use of the proposed 207-minute authority. These exceptions

confuse the issue somewhat and would appear to imply that there are many more situations than poor weather that are envisioned to justify the use of 207-minute authority on any individual flight.

It is very difficult, without further data and analysis that has not been presented, to understand the implications of this proposed policy element. "Political concerns" are generally not short-lived situations. Volcanic eruptions can, as we have seen even in the US, render low-activity airports unusable for months at a time. One can imagine the difficulty of dealing with a need to clean an airport of volcanic ash in some of the more remote high latitude locations of importance here, which lie, ironically, in the volcanic "Ring of Fire." It appears that "temporary closures" could occur for many reasons, and be of fairly long duration, including the permanent unavailability of adequate airport crash-rescue firefighting capability, weather reporting capability, landing aids, lighting, etc. At what point does a "temporary closure" render an otherwise adequate airport inadequate, and therefore unsuitable regardless of the weather?

These are important factors, which must be quantified in order to understand the safety impact of the proposed relaxation to the 180-minute ETOPS standard. In addition, these factors must be far better defined and explained by FAA if operations inspectors in the US or elsewhere are to consistently apply the guidance. As presently stated, the limitations on the frequency with which the proposed 207-minute authority might be used, or the circumstances under which its use might be justified, are inadequately defined by any measure.

(14) FAA Should Reconsider Its Position on "Still Air Provisions"

FAA has determined that it will not reconsider the basis for the computation of diversion times. These times are based on "still air" conditions, and do not take into account headwinds, which can significantly increase diversion times and, in the case of 207-minute diversions, make these increased times due to adverse winds even more significant than encountered under 120- or 180-minute authorities. This information is readily available to the 3 carriers being granted this unique relief by the FAA to utilize this 207-minute ETOPS authority in the North Pacific area of operations. When extending the margin of the envelope of safety, we suggest that every exception should be measured more carefully, not less.

FAA notes that "what must be applied to every ETOPS departure is the fuel load that meets or exceeds the critical fuel scenario analysis, which is based on forecast and actual winds." But FAA does not address time-limited systems. What this means in the event, say, of an in flight fire which breaks out at the critical point, is that FAA requires enough fuel to get to the airport but does not require sufficient fire suppression capability to keep the fire out for that time. Having sufficient fuel to get to the airport under the "critical fuel scenario" will do little good if a fire cannot be contained for that same period.

Airbus believes that the time-limited systems should be required to be capable of operation throughout the diversion in a critical scenario, rather than only for most of the diversion time. The potential increase in flight exposure associated with the 207-minute authority only makes this situation more important.