

# REGULATORY IMPACT STATEMENT

## Civil Aviation Rule Part 121: Extended Diversion Time Operations (EDTO)

### Agency Disclosure Statement

1. This Regulatory Impact Statement has been prepared by the Ministry of Transport (the Ministry), with assistance from the Civil Aviation Authority of New Zealand (CAA).
2. It provides an analysis of options for the treatment of multi-engine aeroplanes capable of operating safely on extended range operations beyond the limits specified under existing civil aviation Rules.
3. The regulatory status quo does not align with the commitments in the Government Statement on Regulation because it applies inflexible requirements that prevent aircraft operators from realising the full benefits of advances in aircraft technology and reliability.

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### Status Quo

4. Civil Aviation Rule Part 121: Air Operations – Large Aeroplanes<sup>1</sup> (Part 121) limits the flying time that twin-turbine engine aeroplanes may safely operate, with one engine inoperative, to not more than 60 minutes from an adequate aerodrome.
5. If an air operator wishes to operate a twin-turbine engine aeroplane on a route that requires the aeroplane to be more than 60 minutes flying time, with one engine inoperative, from an adequate aerodrome, the operator and aeroplane must be authorised by the CAA to conduct 'extended-range twin-engine operations' (ETOPS). The maximum ETOPS-approved route distance limitations are 75, 120 or 180 minutes flying time. In granting approvals, the CAA applies the limitations incrementally subject to specific operational criteria, including operators' proven experience in extended range operations.
6. The current standards for ETOPS, which have been accepted practice by most international operators and aviation regulators for nearly 25 years, are guidelines contained in an Advisory Circular (AC121-1) published by the CAA. These voluntary guidelines state an acceptable means by which CAA approval may be given for New Zealand registered twin-engine aeroplanes to operate extended range operations. Three or four turbine-engine aeroplanes do not require ETOPS approval, and in the event of an engine loss, may continue to the original destination without diverting to an alternate aerodrome, so long as safety is not compromised.
7. Aeroplanes, engines and airline operations, have become more reliable and sophisticated over decades of operations. Presently, twin-turbine engine aeroplanes have largely displaced three and four engine aeroplanes. With the advances in aircraft technology and

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<sup>1</sup> The purpose of Part 121 is to prescribe the operating requirements for air operations of aeroplanes that have a passenger seating configuration of more than 30 seats, excluding any required crew member seat, or a cargo capacity of more than 3,410kg, carried out by the holder of an Airline Air Operator Certificate issued under Civil Aviation Rule Part 119 and applying to the carriage of passengers and goods for hire or reward.

reliability, the wide acceptance of safety management systems, and the prospect of airline operations on routes of increasing distance and remoteness, the Federal Aviation Administration (FAA) in the United States, the Civil Aviation Safety Authority (CASA) in Australia, the European Aviation Safety Agency (EASA) and the International Civil Aviation Organization (ICAO) have been revising their regulations and standard procedures with regard to ETOPS. These new requirements allow for greater flight time limitations from adequate aerodromes to be approved, subject to certain conditions.

8. The limitations imposed by Part 121 do not provide the flexibility to approve greater flight times even if an aircraft and its operator can meet relevant safety criteria. They also place New Zealand operators at a technical and competitive disadvantage compared to overseas operators whose countries have already implemented updated and harmonised ETOPS standards and recommended practice in Rules.

### **Problem Definition**

9. The problems that this proposed Rule-making addresses are as follows.
  - The existing regulatory measures do not accommodate the modern aeroplanes that can safely operate on extended range operations beyond the limits that are currently contained in guidelines published by the CAA, which are constraining potential efficiency and safety improvements.
  - The operating and safety requirements for an air operator approved to conduct long distance flights are contained in non-mandatory guidance material instead of being prescribed in civil aviation Rules, and are therefore not enforceable.
  - The existing standards for ETOPS applied by the CAA, and the range of flight time limitations for extended range operations available to operators, are not aligned with the latest international standards for extended range operations, which also now include aeroplanes with three or four turbine engines.

### **Objectives**

10. The objectives are to:
  - update the operational and safety requirements for extended range aircraft operations in accordance with modern aircraft capability and operational procedures, and the latest international standards and best practice
  - ensure that operational and safety requirements applicable to extended range operations are fully enforceable
  - fully realise the potential efficiency, cost and timesaving benefits that extended flight time limitations can offer to aircraft operators and passengers.

### **Regulatory Impact Analysis**

#### *Preferred Option*

11. The preferred option is to amend Part 121 by:
  - including measures that make the extended range operations standards currently issued as guidelines mandatory

- updating the standards in accordance with the existing international standards and best practice for extended range operations.
12. The existing abbreviation ETOPS, which specifically refers to twin-turbine engine aeroplanes, has been redefined to mean 'extended diversion time operations' (EDTO) under the proposed Rules, as the updated standards also apply to aeroplanes with more than two engines.
  13. Under the amended Rules, EDTO will make it possible for airlines to operate more direct non-stop flights across oceanic or desolate land areas, without being forced to fly via intermediate points that may require additional take-offs and landings. The approved diversion time limitations have been increased in three incremental approval stages that will allow the operators of newer aeroplanes to achieve the full operating potential and range of the aeroplane, subject to meeting safety standards.
  14. The revised maximum diversion times (beyond the existing 60 minutes threshold time) that will be available for an EDTO authorisation are:
    - up to 180 minutes
    - up to 240 minutes
    - more than 240 minutes flying time.
  15. All operators performing EDTO would be required to have safety systems monitoring the reliability of all participating aeroplanes and systems. The proposed Rules will also enhance the safety of extended range operations by prescribing additional requirements, including that operators demonstrate a proven capability to operate at a shorter extended range before graduating to approval for longer range capability.
  16. It is also proposed to introduce a new threshold time of 180 minutes for aeroplanes with more than two engines, and to require the operators of these aeroplanes to hold an EDTO authorisation, up to 240 minutes or more than 240 minutes, for any operations that require the aeroplane to be more than 180 minutes flying time from an appropriate aerodrome.

### *Impacts*

17. The proposed Rule amendments will allow operators of newer aeroplanes to achieve the full operational economies and range of such aeroplanes, which will result in reduced operating costs.
18. By allowing operators to offer more direct flights to more destinations with more frequencies, and with fewer connections and delays, EDTO provides benefits for passengers in terms of time savings, convenience and greater choice. Passengers also benefit from EDTO on long distance routes between cities where passenger volumes would not be economically viable for larger aircraft but could be supported by more efficient twin-turbine engine aeroplanes. This in turn means more reliable services for passengers and possible reductions in airfares.
19. The proposed Rules will assist in the enforcement of the safety standards for EDTO. Placing the standards for EDTO approval by the CAA on a mandatory rather than voluntary basis will ensure that the standards can be enforced. It is important that the safety standards underpinning the higher permissible route distance limitations are enforceable.

20. Applying EDTO Rules to 3 and 4 engine aircraft types will introduce consistency between operators of different types of multi-engine aircraft, including operators of both twin-engine and 3 and 4 engine aircraft types in the same aircraft fleet.

### *Alternative Options*

21. No other viable alternative options are available. If the status quo option is maintained, operators and the travelling public will not fully benefit from extended range operations using today's modern aircraft capabilities.

### *Costs*

22. There are four air operators who currently hold ETOPS authorisations to operate twin-turbine engine aeroplanes on extended range operations of up to 75, 120 or 180 minutes flying time from an adequate aerodrome. There will not be any additional costs for these existing operators to continue with their existing ETOPS operations.
23. If an air operator wishes to take advantage of the proposed Rules and operate a twin-turbine engine aeroplane on a route that requires the aeroplane to be more than 180 minutes flying time from an adequate aerodrome, then the operator will have to apply for a new EDTO approval. The compliance costs for air operators to do this are expected to be relatively minimal. Operators would be required to amend their expositions<sup>2</sup> for new routes and have those amendments approved by the CAA. The time spent altering the exposition, and the total cost of CAA's charges (at \$133 per person hour<sup>3</sup>) for assessing the amendment that will be met by operators, will vary between operators and depends on the routes and aircraft types they wish to operate.
24. The time that the CAA may have to spend on the acceptance of an operator's amended exposition to allow the extra long EDTO operations will depend on many factors such as the quality of the information provided by the operator, the nature of the route to be flown, or whether a proving flight may be required, amongst others. For existing operators, the proposed Rule changes will not impose any additional compliance costs. It is the operator's choice as to whether they wish to take advantage of the additional provisions in the proposed Rules that will incur additional compliance costs.
25. The proposed Rules will not apply to the operation of aeroplanes with more than two turbine engines on long range operations until 8 years after the Rules come into force, so there will be no near-term cost impact on the operators of these aeroplanes.

### **Consultation**

26. A Notice of Proposed Rule Making (NPRM), containing the proposed changes to Part 121 and consequential changes to other Rules, was issued for public consultation in January 2008. Following further consultation with CASA and industry, a NPRM Supplement was issued for further public consultation in February 2010.

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<sup>2</sup> An operator's exposition is the document or set of documents that is required by the certification Rules for the operator to describe their organisation and to document the systems and procedures that the operator and all the operator's staff will follow to ensure compliance with the applicable Civil Aviation Rule requirements.

<sup>3</sup> The \$133 per person hour cost is a fixed charge prescribed in the Civil Aviation Charges Regulations (No 2) 1991 for the CAA's assessment of manuals, programmes or approvals for continued compliance with the conditions of air operators' Air Operator Certificates.

27. The publication of these NPRMs were notified in the *New Zealand Gazette* and advertised in the daily newspapers in the five main provincial centres. The NPRMs were published on the CAA website and mailed to identified stakeholders including the air operators who were considered likely to have an interest in the proposal.
28. Written submissions on the proposed Rules were received from the following organisations: Airbus, Air Nelson, Air New Zealand, Aviation Industry Association of New Zealand, Boeing and Jetconnect.
29. There was general support for the proposed key changes in the NPRMs from submitters and their feedback was incorporated into the proposed Rules where appropriate. All of the submitters considered the proposed amendments to be acceptable but would be improved with the changes they proposed. It should be noted that the majority of the comments were of a detailed technical nature, suggesting technical improvement or alternative wording to the draft Rules. Consequently, all of the key proposed changes published in the NPRMs will be legislated. These changes are included in the Summary of Public Submissions that were published on the CAA website in April 2009 and April 2010 and are attached to the amendment to Part 121.

## **Conclusions**

30. The proposed amendments will provide greater operational scope and flexibility for operators that wish to conduct extended range passenger or cargo air services. This will result in benefits to operators and passengers while ensuring that the new measures reinforce and enhance safety. The industry supports implementation to enable operators to fully realise the operating potential and benefits that advances in aircraft technology and airline operations have to offer.

## **Implementation**

31. A transition provision in Part 121 will allow those air operators currently operating twin-engine aeroplanes with ETOPS approval for up to 180 minutes flying time to continue operating in accordance with their ETOPS authorisation without the need to apply for a new EDTO approval under the proposed Rules.
32. The proposed 8 year transition period for aeroplanes with more than two engines is to enable operators to be prepared for seeking EDTO approval and to meet the EDTO operating requirements should they still be operating four engine aeroplanes in 2018. This is consistent with the approach being taken by other regulatory authorities. The CAA expects that most four engine aeroplanes currently being operated will be retired from the New Zealand registered aircraft fleet by 2018. If there are any operating in 2018 then the operator and the aircraft will have to meet the proposed new EDTO requirements.
33. Subject to Cabinet notation, the Minister of Transport will sign the proposed amendments to Part 121 and consequential rule Parts to come into force on 1 November 2010 following notification in the *New Zealand Gazette*.
34. Once signed, the Rules will be published on the CAA website and interested parties will be provided with guidance and information on acceptable means of compliance with the Rules through a revised Advisory Circular published by the CAA.
35. Consequential amendments to the Civil Aviation (Offences) Regulations 2006 will also be required to prescribe new, or amended, penalties and offences provisions for breaches of the Rules.

## **Monitoring, Evaluation and Review**

36. Once in force, Part 121 will be monitored against the objectives by the CAA operational group responsible for implementing the proposed amendments.