



Australian Government

Department of Transport and Regional Services

DISCUSSION PAPER

Restricting Operations by Marginally Compliant Chapter 3 Aircraft

*A Proposed Airport-by-Airport
Approach*

February 2005

The Proposal

The proposal is to introduce a regulatory regime which enables the operations of hushkitted, and other noise marginal, aircraft to be restricted on an airport-by-airport basis.

1 The Issue

Hushkitted aircraft are significantly noisier than modern equivalent sized aircraft. These aircraft have been termed ‘marginally compliant aircraft’ by European authorities. They are predominantly used in Australia by the overnight freight industry and hence operate at noise sensitive times. In recent times complaints against these aircraft have been made by the communities living around Perth, Melbourne, Launceston, Sydney and Brisbane Airports.

Airports have voiced concerns that if no action is taken to restrict the operations by these aircraft there is likely to be concerted community pressure for curfews to be imposed. In addition, the operation of these aircraft at the most noise sensitive times has the potential to sensitise the community to aircraft noise at other times.

Under the current administrative regime, there is no incentive for freight operators to introduce quieter aircraft for night-time operations as they are unlikely to be cost competitive with the hushkitted aircraft.

This is not a new issue. In February 2000 the Department released a Discussion Paper entitled *A regulatory proposal to limit the operation of recertificated Chapter 3 aircraft in Australia*. This paper proposed that low by-pass engined re-certificated (hushkitted) aircraft not be permitted to carry out domestic operations in Australia after 31 December 2003. This phase out did not occur for reasons indicated in Section 3.

2 Background

Aircraft operating in Australia are required to meet the noise standards specified in ICAO Annex 16, Volume 1. All modern jet, and large non-jet, aircraft are manufactured to meet the Chapter 3 standards. Stricter Chapter 4 standards are due to come into effect on 1 January 2006.

Older aircraft such as the B727 which were manufactured to Chapter 2 standards can be re-certificated as Chapter 3 aircraft through hushkitting. Some Chapter 2 aircraft can also be re-certificated to Chapter 3, without physical modification, by being operated in a ‘low noise’ configuration (eg reduced take off weight, using specified flap settings, etc). While these re-certificated aircraft meet Chapter 3 standards, they only just comply with the standards and are significantly noisier than most modern aircraft – hence the use of the term ‘marginally compliant aircraft’.

A particular issue with re-certificated jet aircraft is the nature of the noise. The noise generated by the ‘low by-pass’ engines which are typically on Chapter 2 jet aircraft is distinctly different from that generated by modern ‘high by-pass’ engines and experience has shown that it is more likely to be intrusive and annoying. Hushkitting, or adopting revised operating procedures, only reduces the level of noise emitted by these aircraft. It does not change the distinctive nature of the noise.

In early 2000 there were 5 hushkitted aircraft on the Australian register – all B727 aircraft. This number had grown to 7 by late 2004.

Hushkitted jets are not the only aircraft that are marginally compliant with Chapter 3 noise standards. Large non-jet aircraft which only marginally meet the noise standards, specifically the AN-12, have also generated complaints at some airports in recent times.

3 Developments Since 2000

It was indicated in Section 1 that proposals were developed by the Department in early 2000 to phase out hushkitted jet aircraft. However, this phase out did not occur due to strong opposition raised within the International Civil Aviation Organization (ICAO) to member states introducing operating restrictions on the use of Chapter 3 aircraft. The 2000 proposal was also criticised because it differentiated between the noisiness of jet aircraft on the basis of the type of engine – ‘low by-pass’ (‘noisy’ aircraft) and ‘high by-pass’ (‘quiet’ aircraft) rather than by using ICAO noise certification data.

At this time, countries in the European Union (EU) were also proposing to place restrictions on the use of hushkitted aircraft and faced similar resistance from some ICAO member states. Protracted negotiations between the EU and the United States ultimately led to ICAO adopting an airport-by-airport approach to managing aircraft noise. This became embodied in ICAO’s *Balanced Approach to Aircraft Noise Management* which was adopted at the 33rd ICAO Assembly held in 2001.

Subsequently in 2002 the European Commission (EC) issued a Directive (2002/30/EC) [1] which established principles for managing aircraft noise and introduced operating restrictions, including provision for the withdrawal of the noisiest Chapter 3 aircraft, at EC airports. EC member states were required to introduce the legal and administrative provisions to comply with the Directive by 28 September 2003. For example, the United Kingdom introduced *The Aerodromes (Noise Restrictions)(Rules and Procedures) Regulations 2003* which came into force in August 2003 [2].

These developments within ICAO and the EC have laid the foundation for the issues canvassed in the DOTARS 2000 Discussion Paper to now be re-visited.

[1] http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l_085/l_08520020328en00400046.pdf

[2] <http://www.legislation.hmsso.gov.uk/si/si2003/20031742.htm>

4 The ICAO Balanced Approach

The ICAO Balanced Approach to Aircraft Noise Management lays down an agreed framework for imposing controls on Chapter 3 aircraft. This is spelt out in the following extracts from Resolution A33-7 adopted at the ICAO 33rd Assembly in 2001 [1].

The Assembly recognised that aircraft noise management measures need to be applied on an airport-by-airport basis. This is expressed in the preamble paragraphs in Appendix C of the Resolution:

...Recognizing that solutions to noise problems need to be tailored to the specific characteristics of the airport concerned, which calls for an airport-by-airport approach, and that similar solutions could be applied if similar noise problems are identified at airports;...

The concept of imposing restrictions on an airport-by-airport basis is expanded in Appendix E of the Resolution:

Local noise-related operating restrictions at airports

The Assembly:

1. *Urges States to ensure, wherever possible, that any operating restrictions be adopted only where such action is supported by a prior assessment of anticipated benefits and of possible adverse impacts;*
2. *Urges States not to introduce any operating restrictions at any airport on aircraft which comply with Volume I, Chapter 3 of Annex 16 before:*
 - a) *completing the phase-out of aircraft which exceed the noise levels in Volume I, Chapter 3 of Annex 16, at the airport concerned; and*
 - b) *fully assessing available measures to address the noise problem at the airport concerned in accordance with the balanced approach described in Appendix C;*
3. *Urges States which, despite the considerations in Resolving Clause 2 above, permit the introduction of restrictions at an airport on the operations of aircraft which comply, either through original certification or recertification, with Volume I, Chapter 3 of Annex 16:*
 - a) *to base such restrictions on the noise performance of the aircraft, as determined by the certification procedure conducted consistent with Annex 16, Volume I;*
 - b) *to tailor such restrictions to the noise problem of the airport concerned in accordance with the balanced approach;*

[1] http://www.icao.int/icao/en/assembl/a33/resolutions_a33.pdf

- c) *to limit such restrictions to those of a partial nature wherever possible, rather than the complete withdrawal of operations at an airport;*
- d) *to take into account possible consequences for air transport services for which there are no suitable alternatives (for example, long-haul services);*
- e) *to consider the special circumstances of operators from developing countries, in order to avoid undue economic hardship for such operators, by granting exemptions;*
- f) *to introduce such restrictions gradually over time, where possible, in order to take into account the economic impact on operators of the affected aircraft;*
- g) *to give operators a reasonable period of advance notice;*
- h) *to take account of the economic and environmental impact on civil aviation in the near term of recent events; and*
- i) *to inform ICAO, as well as the other States concerned, of all such restrictions imposed; and*

4. *Further urges States not to permit the introduction of any operating restrictions aimed at the withdrawal of aircraft that comply, through either original certification or recertification, with the noise standards in Volume I, Chapter 4 of Annex 16.*

These elements of the Balanced Approach were confirmed in a Resolution passed by the 35th ICAO Assembly held in Sept/Oct 2004 (ICAO Resolution A35-5).

5 Proposed Approach to Restricting Operations

It is proposed to introduce an airport-by-airport regulatory regime which enables restrictions to be placed on operations by large marginally compliant Chapter 3 aircraft at specified airports. The intention is that the regime be designed to comply with the requirements of the ICAO Balanced Approach which are spelt out in the previous section.

5.1 Regulatory Framework

The concept is to set up a regime which enables the operator of any individual airport to apply to the Minister for Transport and Regional Services for restrictions to be imposed on the operations of specific types of aircraft at its airport. It is proposed that this policy will be put in place under the *Air Navigation (Aircraft Noise) Regulations*.

It is envisaged that if the Minister approves the adoption of the applied for restrictions, these will be given effect through some form of notice Gazetted under the Regulations.

5.2 Submission Process

It is envisaged that an airport wishing to impose operating restrictions on a particular aircraft type will undertake a full engagement/consultation process with all interested parties (operators, community, etc) during the preparation of its submission to the Minister.

In the submission the airport will need to demonstrate that it has given due consideration to each of the elements/steps relating to the imposition of airport specific operating restrictions laid down in the ICAO Balanced Approach Resolution (ICAO Resolution A33-7). Details of the operating restrictions being sought will need to be clearly defined.

5.3 *Scope of the Regulations*

It is proposed that the Regulations will only permit operating restrictions to be applied to a narrow range of aircraft types. Specifically the intention is that the restrictions will only apply to large, marginally compliant, Chapter 3 aircraft. These are the noisiest aircraft and the ones that are leading to the current complaints.

For the purposes of initiating discussion it is proposed that the definitions adopted by the EC in Directive 2002/30/EC be used as the model for delineating the types of aircraft which may be subject to operating restrictions under the Regulations.

It is proposed that restrictions will only be able to be placed on aircraft which meet **both** of the following criteria

- ‘large’ being defined as
aircraft with a maximum certificated take-off mass of 34 000 kg or more; or with a certified maximum internal accommodation of more than 19 passenger seats, excluding any seats for crew only; and
- ‘marginally compliant’ being defined as
aircraft that meet the certification limits laid down in Volume 1, Part II, Chapter 3 of Annex 16 to the Convention on International Civil Aviation by a cumulative margin of not more than 5EPNdB (Effective Perceived Noise in decibels), whereby the cumulative margin is the figure expressed in EPNdB obtained by adding the individual margins (i.e. the differences between the certificated noise level and the maximum permitted noise level) at each of the three reference noise measurement points as defined in Volume 1, Part II, Chapter 3 of Annex 16 to the Convention on International Civil Aviation.

Most hushkitted jet aircraft that are commonly used as freighters would fall within the scope of these definitions. This definition would also capture large, marginally compliant, non-jet aircraft, such as the AN-12 [**the EC definition only applies to jet aircraft**].

Attachment A contains a list of the types of aircraft that are currently on the Australian register, are frequent visitors to Australian airports or have been used in Australia in the recent past that could be subject to the imposition of operating restrictions under the Regulations if the above definitions were adopted. The list also contains some other aircraft types that may potentially be used within Australia and that would be captured by the above definitions.

The operator of any licensed airport in Australia would be permitted to apply to the Minister for operating restrictions to be introduced at its airport.

5.4 Potential Restrictions

It is envisaged that the restrictions on the operations of the large, marginally compliant, aircraft could be of the following type

- Non-addition rules (ie no increase in the number of operations by marginally compliant Chapter 3 aircraft).
- Restrictions on the number of movements.
- Restrictions on the times of movements.
- Restrictions on the runways and flight paths that may be used.
- A controlled phase out of the current movements over time (eg a certain % reduction each year).
- Total prohibition by an agreed date.

Irrespective of any Gazetted operating restrictions, it is anticipated that the Regulations will make provision for large, marginally compliant, aircraft to operate in exceptional/emergency circumstances.

5.5 Decision Criteria

In considering applications to impose operating restrictions on a particular aircraft type at an airport, the Minister will take into account whether the aircraft type falls within the definitions of 'large' and 'marginally compliant' as described in sub-section 5.3 and will also take into account whether the considerations in the ICAO Resolution A33-7 have been adequately addressed.

Successful applications will also need to demonstrate that there has been full and transparent consultation with all the interested parties.

6 Submissions Sought

Comments are being sought on all aspects of this proposal. In particular comments would be valued on

- The definition of 'large' aircraft.
- The definition of 'marginally compliant' aircraft.
- The types of restrictions that may be imposed.
- The proposed criteria for determining whether operating restrictions will be imposed.

The closing date for submissions is **Friday 8 April 2005**. Submissions should be addressed to

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Or by email to david.southgate@dotars.gov.au

ATTACHMENT A

Examples of aircraft types that could be subject to operational restrictions.

Jets

B727 (hushkitted)
B737-200 (hushkitted)
DC9 (hushkitted)
A300B2
DC10/10
DC10/30
B747/100
B747/200 (some versions)
AN-124

Non-jets

AN-12
Shorts Belfast