



## **DECISION ON THE SCHEDULING STATUS OF DUBLIN AIRPORT FOR SUMMER 2007**

in accordance with the provisions of Council Regulation (EEC) No.  
95/93 as amended by Regulation (EC) 793/2004  
on Common Rules for the Allocation of Slots at Community Airports

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## **BACKGROUND**

### **1.1 Legislative basis**

Under Section 8 of the Aviation Regulation Act, 2001<sup>1</sup> ("the Act"), the Commission for Aviation Regulation ("the Commission") is the designated competent authority in Ireland for the purposes of Council Regulation (EEC) 95/93 as amended<sup>2</sup>, ("the Regulation") other than performing the functions of a coordinator. Following its statutory establishment in February 2001 the Commission is responsible for the designation, if necessary, of Irish airports as schedules facilitated or coordinated and subsequent appointment of a schedules facilitator or coordinator as a result of any such designation.

### **1.2 Terminology**

Since the passage of the Act, the terminology in relation to scheduling has been amended by Regulation of 793/2004) and the original terms of:

- (i) "coordinated" changed to "schedules facilitated," and
- (ii) "fully coordinated" changed to "coordinated".

Similarly, by virtue of the time period to which reference must necessarily be made in this Decision, references to the Dublin Airport Authority (DAA) shall also comprehend Aer Rianta and vice versa where appropriate. For clarity, therefore, terms used in this decision are those in current use.

Reference is made in this Decision to the 'wishlist'. This is the pattern of traffic after schedule adjustments recommended by the coordinator or facilitator in order to fit within the airport's declared capacities and, in the case of a schedules facilitated airport, before any instances of airlines declining to make the schedule adjustment. In peak periods, the coordinator's (or schedules facilitator's) wishlist is lower than the airlines' original schedules submissions because of the re-scheduling of flights out of the peak.

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<sup>1</sup> The Aviation Regulation Act, 2001, as amended by the State Airports Act, 2004, and the Aviation Act, 2006.

<sup>2</sup> Council Regulation (EEC) No 95/93 of 18 January 1993 on common rules for the allocation of slots at Community airports. (OJ L 14, 22.1.1993), as amended by Regulation (EC) No 793/2004 of the European Parliament and of the Council of 21 April 2004.

### **1.3 History**

In late 1999, the DAA submitted a request to the then Minister for Transport to designate Dublin Airport as coordinated. Under the provisions of the Regulation as they then stood, an airport could be classified as schedules facilitated provided the principles of transparency, neutrality and non-discrimination were met. There was no specific requirement to undertake any particular form of analysis in order to designate a Community airport as schedules facilitated provided the principles cited above were not transgressed. As a first step, the Minister decided in 2000 to designate the airport as schedules facilitated and the firm of Airport Co-ordination Limited (ACL), a UK company, was appointed to undertake the role of schedules facilitator following a public tender process.

Subsequently, in November 2000, in order to assess a request from the Dublin Airport Authority to designate the airport as coordinated, the Minister engaged the firm of SH&E to undertake an in-depth assessment of capacity of Dublin Airport. By the time SH&E produced its final Report, the Commission was formally established and so it fell to the Commission to progress matters from that point. In accordance with the requirements of the Regulation, the Commission engaged in a consultation process by publishing a Consultation Paper along with the SH&E Report in May 2001. Following that process and in light of the findings of the SH&E Report, the Commission published a decision in October 2002 which stated that there were not sufficient grounds at that time to designate Dublin airport as coordinated. In summary the SH&E Report concluded: "it appears, at least on paper, that there should just be sufficient capacity available to delay a designation of [co-ordination] for a small number of years. This view is based on our belief that improvements will be implemented in [certain] areas". The Report also noted, "the most critical element in the airport system currently appears to be availability of stands, especially contact stands."

The next relevant event was the request by the DAA to the Commission in September 2002, which sought a change in designation for Dublin Airport from schedules facilitated to coordinated. On foot of that request, the Commission through the engagement of a consultant undertook a review of the issues raised. On foot of that review it was concluded in May 2003 that full coordination was not warranted at that time, however the Commission committed to reviewing the scheduling status of Dublin Airport in early 2004.

Arising from that commitment, the Commission engaged Alan Stratford and Associates ("ASA") in April 2004 to carry out a thorough capacity assessment.

At the time of the finalisation of the 2004 assessment,<sup>3</sup> the capacity of the airport was evaluated at some 18-22 million passengers per annum. The two main Dublin-based air carriers (Aer Lingus and Ryanair) opposed, whereas the airport operator (the Dublin Airport Authority) favoured, the introduction of a coordinated scheduling regime. The consultants considered that the airport did not have, and should not have, an unacceptable level of congestion, provided the terminal scheduling constraints were respected, and that airlines maintained their acceptance rate of flight time changes when proposed by the schedules facilitator. On that particular basis the study recommended that voluntary schedules facilitation continue for another three years. However, the consultants clearly emphasised that voluntary schedules facilitation could be compromised if:

- (i) airlines reduced their compliance with the voluntary scheduling regime; or
- (ii) there was to be a change in the Shannon stopover rule for transatlantic flights.

In light of those findings, the Commission published its decision in October 2004 which concluded that while there were not sufficient grounds at that time, to change the designation status of Dublin Airport, that decision would be re-visited and Dublin Airport would be designated as coordinated if either of two scenarios cited in the ASA Report arose, and either scenario shown to have significant implications for the ability of the airport to cater for current or planned traffic and/or compromise the efficiency of existing arrangements.

At the time of publication of the Decision, the Commission stated that it would continue to monitor the capacity situation at Dublin Airport and would, in particular, monitor whether either of the two scenarios identified in the Decision were taking place.

In view of the findings of the monitoring which took place between October 2004 and late April 2005 – findings which showed a doubling in the number of failures to comply with voluntary schedule adjustments for Summer 2005 as compared to Summer 2004 – the Commission announced that given the implications for operations at Dublin Airport, it had decided to designate Dublin Airport as coordinated as and from Summer 2006.

#### **1.4 Legal Challenge**

The decision was subsequently challenged by one carrier at Dublin Airport and, following a Judicial Review, the High Court, in its July 2006 Judgement, found that the Commission's

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<sup>3</sup> "Dublin Airport Capacity Study – Final Report", Alan Stratford and Associates, July 2004.

April 2005 decision was insufficiently supported by the 2004 capacity analysis. Consequently, Dublin Airport reverted to schedules facilitated status in July 2006.

On application by the Commission, the Supreme Court granted leave to appeal the Judgement of the High Court and that appeal remains pending.

In the light of the findings of the Court regarding the historic nature of the capacity analysis which grounded the Commission's decision in April 2005 and given the importance to airport operations of having the appropriate designation at Dublin Airport, the Commission undertook a new capacity assessment of Dublin Airport, to be carried out in full conformity with the requirements of Article 3 of the Regulation, and which would inform its decision on the appropriate future scheduling status of Dublin Airport.

## **THE 2006 CAPACITY ANALYSIS**

Following an open tender process in accordance with EU public procurement requirements, the Commission appointed the firm of Leigh Fisher Associates – now known as Jacobs Consulting UK Limited – to undertake an independent analysis at Dublin Airport of current and future capacity of the airport in accordance with the provisions of Article 3 of the Regulation.

The capacity analysis (“the Jacobs Report”)<sup>4</sup> was published by the Commission on 8 December 2006. The Commission would like to take this opportunity of thanking those persons who assisted Jacobs Consultancy in the conduct of the capacity analysis.

As that Report has received wide circulation and is a public document, it has not been attached to this Decision. However, for ease of reference the Report’s Executive Summary and Conclusions and Recommendations are attached as Appendix 1 and 2 respectively to this Decision.

This section of the document summarises the consultants’ conclusions separately for the Terminal, the aircraft parking Stands, and the Runway.

### **Terminal Capacity**

The adequacy of Terminal capacity was examined for the period from 2007 up to the opening of Terminal 2, which is scheduled for end of 2009.

#### **2.1.1 Summer 2007**

The consultants found material evidence of current congestion in the Terminal.

The departures concourse at Dublin Airport is significantly congested. In the Summer 2006 peak morning period of 3 a.m. to 8 a.m., assessing demand with reference to an average

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<sup>4</sup>Dublin Airport Capacity Review, Jacobs Consultancy, 6 December 2006.

allowance of 2 square-metres of space per person, the capacity of the departures concourse was reached for 82% of the peak period.<sup>5</sup>

A Service Level Agreement (SLA) provides that passengers should not queue at the security points for more than 7 minutes on average. However, at security point A, queues exceeded this standard for 34% of the peak 3-hour period in summer 2006.<sup>6</sup> The consultants also concluded that in 2007 queues could exceed 15 minutes for 80% of the peak 3-hour period.<sup>7</sup>

At the immigration facility in the arrivals area, the consultants note that forecast queues “are well in excess of typical standards”<sup>8</sup> and that “immigration queues at pier A are likely to exceed current capacity in Summer 2007”<sup>9</sup>.

Although each of these aspects of congestion gives rise to delays and possibly serious delays, the consultants concluded that the proposed capacity enhancements to the Terminal “would appear to provide sufficient capacity for the terminal to handle [at an acceptable level of service] the predicted peak passenger demand through to 2010”<sup>10</sup> provided there was careful management of aspects of the Terminal.

#### 2.1.2 Scope to overcome Terminal capacity shortfall

Although the consultants did not consider that capacity limitations in the Terminal warranted an immediate change to the scheduling status of Dublin Airport, their report made certain suggestions to improve capacity.<sup>11</sup> They proposed:

- switching air carriers between blocks (‘islands’) of check-in desks (page 30);
- re-location of airline ticket sales desks (page 31);
- the introduction of a ‘one-way’ flow of passengers through the departures concourse (page 30);

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<sup>5</sup> Jacobs Report, page 29.

<sup>6</sup> Jacobs Report, page 16.

<sup>7</sup> Jacobs Report, page 32.

<sup>8</sup> Jacobs Report, page 39.

<sup>9</sup> Jacobs Report, page 39.

<sup>10</sup> Jacobs Report, pages ii and iii.

<sup>11</sup> Jacobs report, principally in section 3.6.2 (c).

- improvements to signage (page 30);
- active direction of passengers to the less busy security point, use of an overspill area, and the possibility of centralising security (page 33); and
- the improvement of the processing at the Immigration Service area by the creation of a dedicated route for domestic flights (page 38).

The consultants recognised that not all of these improvements might be capable of implementation in the short term.

## **Stand Availability**

The consultants' assessment of the adequacy of aircraft parking Stands for the Summer 2007 period is summarised below.

### 2.2.1 Summer 2007

The consultants concluded "Dublin airport is currently approaching stand capacity during the overnight period. However, there would appear to be only sufficient stands to accommodate the current predicted wishlist [adjusted schedule] demand in Summer 2007. However, during Summer 2007 contingency stands are likely to be required to accommodate scheduled aircraft at peak times and therefore stand allocation will require careful management at peak times"<sup>12</sup>.

This conclusion is elaborated as follows: "It is noted that although overnight there appear to be typically 7 to 9 narrow bodied stands vacant and one long haul stand vacant overnight, the vacant stands provide necessary operational contingencies ... for aircraft that are on the ground for short periods ... [for] those [aircraft] that are not in the schedule, aircraft that have technical issues, and stand outages due to maintenance".<sup>13</sup>

The report states that "a typical [contingency] requirement would be in the order of 10% of typical stand demand".<sup>14</sup>

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<sup>12</sup> Jacobs Report, page iii.

<sup>13</sup> Jacobs Report, page 48.

<sup>14</sup> Jacobs Report, page 50.

### 2.2.2 Scope to overcome Stand shortfall

It was suggested that a centralised bussing service would maximise efficiency<sup>15</sup> An alternative investment plan to the DAA's – involving retention of Pier C and the building alongside it of a new pier (similar to Pier D) – was put to the consultants, but they judged it “unlikely to provide a short-term solution to the forthcoming stand availability constraints”<sup>16</sup> and would involve the demolition of certain cargo, catering and other facilities.

## **Runway capacity**

The consultants' conclusions on the adequacy of runway capacity for the Summer 2007 scheduling period are summarised below

### 2.3.1 Summer 2007

From their review of work carried out for the DAA on runway capacity, and from their own additional modelling for the Commission, Jacobs Consultancy concludes that “whilst the runway can meet the 10-minute average delay criteria with the Summer 2007 wishlist, additional demand leads to an exponential increase in capacity-related runway delays ... we conclude that any demand in excess of the Summer 2007 wishlist will lead to a significant increase in runway-related capacity delays and the short term peak capacity of the runway can reasonably be considered to be equivalent to the peak demand in the summer of 2007 wishlist”<sup>17</sup>.

### 2.3.2 Scope to overcome Runway shortfall

The possible scope to increase the capacity of the runway was considered.<sup>18</sup> Two measures were suggested: a reduction in ATC aircraft-separation rules, and/or the construction of an additional rapid exit runway, taxiway and holding area. These steps could permit an additional two runway movements per hour, the consultants suggested.

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<sup>15</sup> Jacobs Report, section 4.6.

<sup>16</sup> Jacobs Report, page 54.

<sup>17</sup> Jacobs Report, page 65.

<sup>18</sup> Jacobs Report, section 5.5.

## **Consultants' Conclusions & Recommendations**

The Jacobs Report determined that there were shortfalls in capacity on both the runway and the apron, such that additional peak services above the Summer 2007 wishlist will increase apron delays and average runway delays above the average of 10 minutes.<sup>19</sup>

The Jacobs Report noted "evidence on prior activity patterns from recent seasons suggests that outturn peak demand would be greater than assumed in the current Summer 2007 wishlist. It is therefore recommended that schedules coordination at Dublin Airport also be strongly considered for the Summer 2007 season, as the airport will be at the capacity of its airfield infrastructure and there appears to be no operational contingency".<sup>20</sup>

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<sup>19</sup> Jacobs Report, page iv

<sup>20</sup> Jacobs Report, page iv.

## CONSULTATION WITH INTERESTED PARTIES

Following publication of the Jacob's Report, and prior to reaching its decision on the future scheduling status of Dublin Airport, the Commission, on 8 December 2006, initiated a consultation process with all interested parties on the capacity situation at Dublin Airport, as required under Article 3.4 of the Regulation.

This section of the document summarises the views of the firms that responded to the Commission's invitation to comment on the Jacobs capacity study. The full text of the substantive submissions may be found on the Commission's website.<sup>21</sup>

### General

Strong support for the consultants' recommendation, for a change in the scheduling status of Dublin Airport for Summer 2007, was expressed by a number of airlines (**Aer Lingus**, **Lufthansa**, **Monarch Airlines**, and **CityJet**) and also by ACL and the DAA.

Trenchant opposition to coordination was articulated by Ryanair, which faulted the quality of the consultants' work, along with their methodology and data and the process by which they had gathered and assessed the views of airport users.<sup>22</sup>

**ACL** stated that, in its professional opinion and experience, "the Jacobs capacity review is a thorough and robust analysis of the capacity situation at Dublin Airport".<sup>23</sup>

The **DAA** described the Jacobs report as a "convincing argument" for the re-designation of Dublin Airport as co-ordinated,<sup>24</sup> and noted that as of January 2007 "almost 5% of the schedule for Summer 2007 does not have approved operating times".<sup>25</sup> The DAA envisaged traffic at Dublin Airport increasing by some 24% in the two-year period 2005 to 2007 and

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<sup>21</sup> [http://www.aviationreg.ie/Slot\\_Allocation\\_Documents\\_Submission\\_on\\_Dublin\\_Airport-Capacity\\_Analysis\\_2007.HTML](http://www.aviationreg.ie/Slot_Allocation_Documents_Submission_on_Dublin_Airport-Capacity_Analysis_2007.HTML)

<sup>22</sup> Ryanair submission, cover letter, 5 January 2007.

<sup>23</sup> ACL response to consultation on the capacity of Dublin Airport, page 1.

<sup>24</sup> DAA submission to Commission for Aviation Regulation, cover letter, 5 January 2007.

<sup>25</sup> DAA submission, page 4.

argued that it could only cope with such a step-increase in traffic with the aid of coordination.<sup>26</sup>

The DAA further argued that the consultants' evaluation of the capacity of the airport had if anything tended to over-estimate capacity, insofar as its assessment was made with reference to the 'wishlist' of airlines. But, the DAA felt that, in the absence of coordination, actual demand for airport facilities would be significantly higher than the 'wishlist'. The DAA considered that airline demand for airport facilities can only be held down to 'wishlist' levels by the introduction of coordination; the DAA described the period of voluntary slot facilitation by airlines with the coordinator's requests to reschedule services (such as Summer 2005) as "clearly ineffective".<sup>27</sup>

**Ryanair** submitted that the process followed by Jacobs Consultancy has been faulty with, in its view, insufficient consultation and discussion with Ryanair, and with users generally, in particular regarding the outputs of the consultants' model.<sup>28</sup>

Ryanair considered that the consultants had not shown – as required by the Regulation for a change of designation – that any capacity shortfalls would be such as to cause significant delays. In addition, Ryanair maintained that, also contrary to the Regulation, the consultants had "fail[ed] to establish that there are no possibilities of overcoming the problems".<sup>29</sup>

Ryanair faulted the consultants' application of annual average traffic growth rates to Summer 2006 peak demand, given that traffic growth at the peak could be slower than average traffic growth. Ryanair also maintained that the consultants had failed to "correctly assess the true apron and runway capacity".<sup>30</sup> Ryanair considered a "fundamental flaw"<sup>31</sup> in the report to be the absence of more detailed analysis of why the passenger traffic was lower in 2006 than in 2005 (at the airport's 30<sup>th</sup> busiest hour) given that this might have

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<sup>26</sup> DAA submission, page 6.

<sup>27</sup> DAA submission, section 8, page 22.

<sup>28</sup> Dublin Airport Capacity Review – Comments prepared by York Aviation on behalf of Ryanair.

<sup>29</sup> Ryanair submission, cover letter, 5 January 2007.

<sup>30</sup> Ryanair submission, cover letter, 5 January 2007.

<sup>31</sup> Ryanair submission, section 3.2.1.

been due, not to the introduction of coordination in that season, but rather to a structural shift in traffic.

Different views were put forward in relation to the timing of a decision from the Commission.

Except for Ryanair, the **other parties** making submissions favoured a Commission decision in time to allow for its implementation for the Summer 2007 season. **ACL** urged the Commission to make its decision on the scheduling status of Dublin airport as soon as possible and ideally before the industry slot return deadline of 31 January 2007. **Ryanair**, however, wished that the Jacobs report be amended to reflect what Ryanair saw as its shortcomings, and for the amended outputs to be the subject of a (third<sup>32</sup>) round of consultation with users, with a further subsequent consultation on possible actions to resolve any capacity shortfalls.<sup>33</sup>

### **Terminal Capacity**

The comments on the Jacobs Report's assessment of Terminal capacity are summarised below.

#### 3.2.1 Summer 2007

Based on the schedules submitted to it by airlines, in its role as the schedules facilitator at Dublin Airport, **ACL** argued that demand for terminal facilities in Summer 2007 would be significantly in excess of Terminal capacity. **ACL** further argued that, since the 2006 data that were the starting point of the Jacobs Consultancy study, were derived from a period

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<sup>32</sup> During its work for the Commission, Jacobs Consultancy consulted with users, and the Commission also held a round of consultation with users and interested parties following publication of the Jacobs report.

<sup>33</sup> Ryanair submission, para 1.1.2 refers to a necessary additional "two stages" of consultation not having taken place.

when co-ordination was in force<sup>34</sup>, the consultants' conclusions as to the adequacy of Terminal capacity would only apply under co-ordination.<sup>35</sup>

The **DAA** noted that the Terminal capacity levels computed by the consultants depended on three uncertain assumptions concerning Ryanair: the airline to move to the new check-in facility (Area 14); 35% of its passengers to use web check-in by March 2007; and the company to open its check-in desks up to 3 hours before flight departure.<sup>36</sup> The DAA considered that similar doubt attached to the assumption that the immigration desks would be fully staffed.<sup>37</sup>

In regard to the departure security points and the arrivals immigration points, the DAA argued that coordination, by delivering a more predictable schedule, would allow the DAA to manage queuing and reduce passenger delays.<sup>38</sup>

**Ryanair's** submission to the Commission contained a very lengthy critique of the passenger terminal capacity portion of the consultancy report.<sup>39</sup> In summary, Ryanair criticised:

- the lack, in some cases, of an explicit treatment of the link between capacity and delays;
- the appropriateness of the service standards used by the consultants;
- the inputs used and the outputs generated in the consultants' statistical model;
- the level of detail provided as to the consultants' calculations;
- the consultants' estimates of the scope for improved Terminal capacity.

### 3.2.2 Scope to overcome Terminal shortfall

**ACL** argued that the excess demand for Terminal facilities for Summer 2007 would not be amenable to resolution by voluntary cooperation between air carriers.<sup>40</sup>

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<sup>34</sup> Prior to the decision of the High Court of July 2006.

<sup>35</sup> ACL response, page 5; see Figure 2, which shows how the peak departing passenger numbers could be substantially higher without coordination i.e. without the rescheduling of some flights out of the peak.

<sup>36</sup> DAA submission, page 9.

<sup>37</sup> DAA submission, page 13.

<sup>38</sup> DAA submission, pages 11 and 12.

<sup>39</sup> Ryanair submission, section 4.

The **DAA** considered that the impact of the consultants' proposals to improve Terminal capacity would be marginal.<sup>41</sup>

**Ryanair** claimed that, contrary to the requirements of the Regulation, the consultants had failed to consider the possibilities for adding to Terminal capacity.<sup>42</sup>

### **Stand Availability**

The comments on the Jacobs Report's assessment of Stand availability are summarised below.

#### i) Summer 2007

The **DAA's** assessment of the net availability of aircraft parking stands for Summer 2007 differed very materially from that of the consultants (see, for example, the table on page 16 of the DAA submission).<sup>43</sup> Whereas the Jacobs report foresaw stand supply matching stand demand in the third quarter of 2007, the DAA – depending on the extent of the increase in Ryanair aircraft based at Dublin Airport – expected a deficit of up to 14 stands. Throughout the whole period Q3 2006 to Q4 2008, the DAA envisages a larger, or much larger, stand deficit than did Jacobs. The DAA submission stressed that the stand shortfall commences in Q2 2007.

**Ryanair** considered that the consultants' assessment of stand availability was uncertain because it was not based on a complete busy-day flight schedule for future years, itself drawing upon a full assessment of route development, fleet mix, and expected market developments.<sup>44</sup>

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<sup>40</sup> ACL submission, page 2.

<sup>41</sup> DAA submission, page 8.

<sup>42</sup> Ryanair submission, cover letter, 5 January 2007.

<sup>43</sup> DAA submission, section 6.

<sup>44</sup> Ryanair submission, pages 1 and 2.

Ryanair elsewhere state that it agreed with the consultants that stand availability will be “severely compromised”<sup>45</sup>. However, it attributed reductions in apron and stand capacity at Dublin Airport to the form, rather than the fact, of the airport operator’s investment plans. Ryanair believed that a different investment plan, involving the construction of different airport assets at different locations, could be carried out while retaining aircraft stands at a high level.

ii) Scope to overcome Stand shortfall

York Aviation, in its submission on behalf of **Ryanair**, asked whether demand from “East European airlines and charter aircraft ... should be discouraged”.<sup>46</sup>

### **Runway capacity**

The comments on the Jacobs Report’s assessment of Runway capacity are summarised below.

iii) Summer 2007

The **DAA** maintained that Ryanair was a party to the airport Co-ordination Committee’s agreement that the wishlist would be adopted as the declared capacity limits for the schedules facilitator to work to for the Summer 2007 season;<sup>47</sup> Despite this, **Ryanair** subsequently took the view that the “practice of declaring only the wishlist demand as capacity leading to less capacity being available in some hours is also not normal practice”.<sup>48</sup>

iv) Scope to overcome Runway shortfall

**ACL** agreed with the consultants that runway capacity could be increased eventually by some two movements per hour but not in the short term and that such an improvement would in any case be insufficient to meet current or forecast demand.

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<sup>45</sup> Ryanair submission, para 1.31.

<sup>46</sup> Ryanair submission, para 5.6.

<sup>47</sup> DAA submission, page 5.

<sup>48</sup> Ryanair submission, para 6.2.

Noting that in Summer 2007, at the busiest hour (0500 UTC), over 20% of demand could not be accommodated at the times the airlines required; ACL argued that the need for adjustment on this scale was too large to be accommodated by voluntary agreement.

Regarding the possible measures to improve runway capacity proposed by the consultants, the **DAA** maintained that the Irish Aviation Authority would not be changing its aircraft separation rules for Summer 2007 nor would an additional taxiway be in place for that season.

The **IAA** submission noted that ATC agreement to a maximum runway capacity of 47 aircraft per hour was on the understanding that an effective system of schedules management would be in place for the busy summer period. Regarding reduced separation, the IAA stated that it has no plans to change the current procedure<sup>49</sup> and thus that there was no prospect of changed ATC rules overcoming runway capacity shortfalls in the short term.

## **Conclusions**

**Aer Lingus** broadly supported the consultants' conclusions; expressed the view that "peak runway demand exceeded supply"; supported a move to co-ordinated status, and indicated that a change in scheduling status is "imperative" from Summer 2007.<sup>50</sup> **Lufthansa** expressed support for a move to coordinated status for Summer 2007.<sup>51</sup> **Monarch Airlines** agreed with the Jacobs Report's conclusions, and recommended that Dublin Airport should be coordinated as soon as possible. **CityJet** considered it "essential" that the airport be coordinated for Summer 2007.

The **IAA** stated that it believed that "the introduction of coordinated status at Dublin Airport is necessary for the 2007 summer season to effectively manage the capacity constraints and to assist us with reducing delays."<sup>52</sup>

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<sup>49</sup> IAA submission, page 3.

<sup>50</sup> Aer Lingus' letter to Commission, January 2007.

<sup>51</sup> Lufthansa correspondence to Commission, January 2007.

<sup>52</sup> IAA submission, page 2.

**ACL** agreed that Dublin Airport be designated as co-ordinated from the Summer 2007 season. ACL urged the Commission to make its decision on the scheduling status of Dublin Airport as soon as possible and ideally before the industry slot return deadline of 31 January 2007.

The **DAA** described the consultants' conclusions as "very convincing" and judged a change of scheduling status for Summer 2007 to be "essential".<sup>53</sup>

**Ryanair** proposed instead that the Commission arrange that "users [be] properly consulted regarding what action can be taken to avoid the need for a change in the coordination status."<sup>54</sup>

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<sup>53</sup> DAA submission to Commission for Aviation Regulation, page 3.

<sup>54</sup> Ryanair submission, cover letter, 5 January 2007.

## **STATUTORY GROUNDS FOR AN AIRPORT BEING DESIGNATED AS COORDINATED**

The conditions to apply to airport coordination are set out in Article 3 of the Regulation and the Commission has had close regard to these conditions in reaching its decision.

Article 3.1.b of the Regulation stipulates that a *"Member State shall not designate an airport as coordinated save in accordance with the provisions of paragraph 3"*.

Paragraph 3 of the Regulation is, for ease of reference, reproduced below.

3. The Member State responsible shall ensure that a thorough capacity analysis is carried out at an airport with no designation status or at a schedules facilitated airport by the managing body of that airport or by any other competent body when that Member State considers it necessary, or within six months:

(i) following a written request from air carriers representing more than half of the operations at an airport or from the managing body of the airport when either considers that capacity is insufficient for actual or planned operations at certain periods; or

(ii) upon request from the Commission, in particular where an airport is in reality accessible only for air carriers that have been allocated slots or where air carriers and in particular new entrants encounter serious problems in securing landing and take off possibilities at the airport in question.

This analysis, based on commonly recognised methods, shall determine any shortfall in capacity, taking into account environmental constraints at the airport in question. The analysis shall consider the possibilities of overcoming such shortfall through new or modified infrastructure, operational changes, or any other change, and the time frame envisaged to resolve the problems. It shall be updated if paragraph 5 has been invoked, or when there are changes at the airport influencing significantly its capacity and capacity usage. Both the analysis and the method used shall be made available to the parties having requested the analysis and, upon request, to other interested parties. The analysis shall be communicated to the Commission at the same time."

Article 3.3 of the Regulation states that: -

*the Member State responsible shall ensure that a thorough capacity analysis is carried out at an airport with no designation status or at a scheduled facilitated airport by the managing body of that airport or by any other competent body when that Member State considers it necessary, or within six months.*

The Commission, as the competent authority in Ireland for the purposes of the Regulation, considered it necessary in the light of the uncertainty stemming from the Judgement of the High Court, that a new capacity analysis be carried out at Dublin Airport, therefore the other sub criteria relating to requests from the managing body of the airport or the users or the European Commission did not apply in this instance.

*"This analysis, based on commonly recognised methods, shall determine any shortfall in capacity, taking into account environmental constraints at the airport in question. "*

The chosen consultants, Jacobs Consulting, have extensive experience in capacity measurement and analysis and their analysis was completed using commonly recognised methods. The analysis showed a shortfall in capacity. As there are currently no environmental constraints at Dublin Airport, this is not an issue.

*"The analysis shall consider the possibilities of overcoming such shortfall through new or modified infrastructure, operational changes, or any other change, and the time frame envisaged to resolve the problems."*

The shortfalls identified in the Jacobs report relate to stand availability and runway capacity and while there are medium term plans to address the infrastructural shortfall as part of the airport's longer term capital programme, the full benefit will not be seen until about 2012. The Jacobs Report made a large number of proposals for operational and other changes to overcome capacity shortfalls.

In relation to infrastructural changes, the Report also noted that small increases in peak capacity may be achievable by the provision of a bypass taxiway, an expanded holding area and an additional Rapid Exit Taxiway. However, the capacity enhancements that these would offer will not be deliverable in the short term, even if a decision were to be taken now to sanction all three elements.

*"Both the analysis and the method used shall be made available to the parties having requested the analysis and, upon request, to other interested parties"*

As stated earlier, the Commission initiated the capacity analysis, there was therefore no requesting party per se, however, the final Report was published by the Commission; it was sent to Irish carriers operating at Dublin Airport, the Airport Operating Committee (AOC) and the DAA and it was made freely available to all other parties. The capacity analysis was in addition made available to the European Commission

Ryanair considered that the issues it has raised would need to be addressed prior to a Commission decision on the slot-scheduling regime at Dublin Airport. Ryanair sought a meeting with the Commission on these matters. The Commission met with Ryanair and its representatives on 22 January 2007 in order to allow the airline an opportunity to clarify the points raised in its submission. A summary of the views presented by Ryanair at that meeting will be made available on the Commission's website shortly.

Therefore, in the Commission's view it has, in reaching its decision, taken into consideration all the relevant conditions leading to a possible change of scheduling designation.

Regarding the timing of the decision, the Commission is aware that, in the IATA World Scheduling Guidelines, the preferred notice periods for a change in the level of designation of airports are the previous 1 September in the case of a summer season and the previous 1 April in the case of a winter season. The situation in which the Commission finds itself in terms of the proximity of the Summer 2007 season is not amenable to the application of these particular guidelines which in any case do not form part of the statutory requirements to which the Commission must adhere. In particular, the Commission does not consider that Ryanair's proposal for further consultation - which would result in an indefinite timetable - is either necessary or appropriate nor that it would elicit any further views from users that have not been aired previously

## **GROUNDINGS FOR DECISION ON COORDINATION**

The Jacobs Report defines the capacity of the airport as being the Summer 2007 wishlist [adjusted schedule]. Peak services additional to the Summer 2007 wishlist could arise in two ways:

1. In Winter 2007 and afterwards because of traffic growth at a time, in particular, of reduced stand capacity;
2. In Summer 2007 if actual traffic exceeded the Summer 2007 wishlist.

Therefore, the Commission has addressed the issues in respect of the two periods;

- Summer 2007 and
- Winter 2007 and thereafter

separately and has set out the basis for the decisions in a separate manner. This Paper contains the Commission's decision in respect of Summer 2007; the Commission's decision for the Winter 2007 scheduling period and after is contained in Commission Paper CP3/2007.

Paragraph 5 of Article 3 of the Regulation provides that an airport shall not be coordinated unless:

- a. Capacity shortfalls are of "such a serious nature that significant delays cannot be avoided at the airport"; and
- b. There are "no possibilities of resolving these problems in the short term."

Ryanair's submission to the Commission criticised the process followed by Jacobs Consultancy on the following basis:

- Limited/no engagement with users on input assumptions, future demand and modelled output.

Jacobs have reported in detail on the extensive consultations held with Ryanair in the period (5 October to 29 November 2006) leading up to the finalisation of the capacity analysis. These consultations included correspondence from Jacobs relating to input assumptions and

specifically invited comments and data. Similarly, extensive consultation was carried out from early October to 26 November 2006 with the aim of seeking and facilitating input by all other interested parties, i.e. DAA, IAA, other carriers serving Dublin, the Department of Transport, and Groundhandlers. The Jacobs Report at Appendix A sets out in greater detail, the full extent of all consultations offered to interested parties in the preparation of the capacity analysis.

- No consultation with Coordination Committee in accordance with Article 5 of the EC Regulation

In the Commission's view, Article 5 of the Regulation has no specific application in the current circumstances (i.e. consultation on the capacity analysis) as the functions of a Coordination Committee specified in Article 5 only relate to a coordinated airport and Dublin Airport is a schedules facilitated airport at the present time.

## **5.1 Grounds for Commission Decision for Summer 2007**

### **(i) Conclusions of the Jacobs Report**

The Jacobs Report concluded that there were shortfalls in capacity on both the runway and the apron, such that additional peak services above the Summer 2007 wishlist [adjusted schedule] will increase apron delays and average runway delays above the average of 10 minutes, which is the maximum average delay period currently deemed to be acceptable by the Airport Coordinating Committee.

The Commission notes that the Jacobs Report assessed the airport's capacity with respect to the schedule facilitator's Summer 2007 wishlist. In peak periods, the schedule facilitator's wishlist is lower than the airlines' original schedules submissions because of the re-scheduling of flights out of the peak.

The Jacobs Report considered possibilities for resolving the runway and apron capacity shortfalls<sup>55</sup>; the Report found that, in respect of stands, the possibilities were "unlikely to provide a short-term solution to the forthcoming stand availability constraints"<sup>56</sup>; in regard

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<sup>55</sup> See, in particular, sections 4.6 and 5.5 of the Jacobs Report.

<sup>56</sup> Jacobs Report, page 54.

to the runway, the Report found that two additional runway movements might be achievable in the peak under certain circumstances but that these seemed “unlikely to be deliverable in the short term”<sup>57</sup>.

For Summer 2007, the Report suggested that peak demand would exceed the Summer 2007 wishlist. The Report therefore recommended to the Commission that coordination be strongly considered for the Summer 2007 scheduling season.

## **(ii) Submissions Received on the Jacobs Report**

Other than Ryanair’s, the submissions received by the Commission on the Jacobs Report expressed strong support for the consultants’ recommendation for a change in the scheduling status of Dublin Airport for Summer 2007 (Aer Lingus, Lufthansa, Monarch Airlines, CityJet, IAA, ACL and the DAA). Some submissions considered that the Report underestimated demand because the base-year (2006) traffic pattern had incorporated coordination and because the Summer 2007 wishlist would require airline cooperation with the schedules facilitated proposed schedule.

Regarding the capacity assessment by Jacobs Consultancy, Ryanair made a number of specific criticisms:

- Ryanair considered that the consultants had not shown (as required by the Regulation for a change of designation) that any capacity shortfalls would be such as to cause significant delays.<sup>58</sup> Specifically, Ryanair argued runway traffic above the 2007 wishlist would not automatically lead to unacceptable increases in delays “when there is significant scope for ATC improvements, improvements in pilot response times, potential to modify [systems] as well as provide capacity enhancing infrastructure improvements to the runway”<sup>59</sup> and tactical use of runway 11/29.<sup>60</sup>

The Commission has rejected this criticism on the grounds that the Jacobs recommendation of coordination is explicit in terms of the impact on delay: “additional peak services beyond

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<sup>57</sup> Jacobs Report, page 71.

<sup>58</sup> Ryanair Submission, cover letter, 5 January 2007, page 1.

<sup>59</sup> Ryanair submission, para 6.9.

<sup>60</sup> Ryanair submission, para 6.10.

those in the Summer 2007 wishlist will increase apron delays and average runway delays above the currently agreed 10 minute delay criterion<sup>61</sup>. In regard to the measures to resolve runway capacity shortfalls, the Jacobs Report considered that these were unlikely to provide a short-term solution.<sup>62</sup>

- Ryanair maintained that, also contrary to the Regulation, the consultants had “fail[ed] to consider whether there are possibilities to overcome any identified problems”.<sup>63</sup>

The Commission has rejected this criticism on the grounds that, inter alia, in sections 3.6.2(c), 4.6 and 5.5, the Jacobs Report considers possibilities to overcome the identified capacity problems.

Ryanair also made specific criticisms of the Jacobs Report’s analysis of the Summer 2007 period, including:

- Terminal capacity:

Ryanair considered that the Report had underestimated Terminal capacity;

The Commission notes that the consultants’ overall recommendation for coordination to be strongly considered for Summer 2007 does not rely on the consultants’ estimate of the capacity of the passenger Terminal (which was considered to provide sufficient capacity to handle the predicted peak passenger demand until the opening of T2). Therefore, a still-higher estimate of capacity – as argued for by Ryanair – would not change the consultants’ advice to the Commission regarding the Summer 2007 season. Hence, the Commission does not feel it necessary to comment further on Ryanair’s criticisms of the consultancy report’s assessment insofar as they relate to Terminal capacity.

- Stand capacity:

Ryanair argued that stand adequacy could not be evaluated without a more comprehensive (busy-day) schedule forecast.<sup>64</sup>

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<sup>61</sup> Jacobs Report, page iv.

<sup>62</sup> Jacobs Report, pages 54 and 71.

<sup>63</sup> Ryanair submission, cover letter, 5 January 2007, page 2.

<sup>64</sup> Ryanair submission, para. 5.1.

The Commission does not accept Ryanair's representation on stand adequacy for the following reasons. First, the Commission notes that Ryanair's claim that stand adequacy is uncertain appears to be contradicted by Ryanair's acknowledgement that the Jacobs Report "correctly state[s] that stand numbers will be severely compromised"<sup>65</sup>.

Second, the Commission is not aware of any reason why a thorough capacity analysis having regard to commonly recognised methods should be interpreted, in line with Ryanair's view, as requiring the production of a complete busy-day flight schedule for future years. For instance, neither of the capacity assessments carried out in the past for the Commission employed such approaches.

- Outturn demand being above wishlist [adjusted schedule] demand in Summer 2007: Ryanair dismissed this aspect of the Jacobs Report as "unsubstantiated assertions regarding demand in Summer 2007"<sup>66</sup> and "pure speculation"<sup>67</sup>.

The Commission does not accept Ryanair's representation on the Summer 2007 traffic outturn for the reasons set out in section 5 (iii) and (iv) below.

More generally, the Commission is not persuaded that the continuation of a system of voluntary cooperation into Summer 2007 would be effective in bringing the level of demand down to the Summer 2007 wishlist and reducing delays to levels that would no longer be "significant delays". ACL has argued in its submission that the excess demand for airport facilities for Summer 2007 would not be amenable to resolution by voluntary co-ordination<sup>68</sup>. The Jacobs Report also noted that "if the current schedules facilitation process is not successful in voluntarily constraining peak period demand to that set out in the Summer 2007 wishlist, then runway delays will increase beyond [the] current criterion. In that case, an effective means to constrain peak demand will be required [to] maintain effective airport operations, and provide sufficient scope to recover quickly from unforeseen events."<sup>69</sup>

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<sup>65</sup> Ryanair submission, para. 1.3.1.

<sup>66</sup> Ryanair submission, cover letter, page 2.

<sup>67</sup> Ryanair submission, para. 7.2.

<sup>68</sup> ACL submission, page 2.

<sup>69</sup> Jacobs Report, page 69.

### **(iii) Capacity Shortfall at the Airport during Summer 2007**

Given that the Jacobs Report held the view that peak demand would exceed the Summer 2007 wishlist and therefore exceed the capacity of the airport, the Commission has sought, following the publication of the Jacobs Report, further information from the schedules facilitator, in order to ascertain whether peak demand will actually exceed the Summer 2007 wishlist.

On 31 January 2007, ACL informed the Commission that, of the 128,897 planned aircraft movements for Summer 2007, 122,684 (or 95.2 percent of the schedule) had been cleared by the schedules facilitator. However, 6,213 movements (or 4.8 percent of the schedule) are planned to operate at times that have not been accepted by the schedules facilitator and where the airlines have not agreed to adjust the time of the service to that time proposed by the facilitator as being compatible with the airport's capacity. A failure to make the adjustments proposed by the facilitator would, all other things equal, mean that Summer 2007 services would exceed the wishlist and therefore the capacity of the airport, by almost 5 percent on average.

### **(iv) Significant Delays due to Capacity Shortfall at Dublin Airport during Summer 2007**

Having satisfied itself, that in the absence of the movements rejected by the coordinator being adjusted by the airlines concerned, a capacity shortfall (by virtue of the wishlist being exceeded) would occur, the Commission proceeded to further consider whether this capacity shortfall would lead to significant delays.

ACL, following a request, informed the Commission on 31 January 2007, that of the 19,575 movements planned for the Summer 2007 early morning peak (0500 – 0759 UTC), 2,446 movements (or 12.5 percent) have not been cleared by the schedules facilitator. Therefore, 12.5 percent of the peak schedule is currently planned to operate without a slot. For the 0500 – 0559 UTC, the discrepancy is greater, amounting to 21 percent of that hour's schedule.

As part of the capacity analysis of Dublin Airport, sensitivity tests to investigate the impact on delays of additional morning peak-period movements, had been carried out by NATS for

the DAA, and by Jacobs Consultancy<sup>70</sup> for the Commission.<sup>71</sup> Both sets of tests illustrate the effect that additional flight movements in excess of the wishlist would have on increasing average delay times<sup>72</sup>. The Jacobs sensitivity tests showed that during this peak period, specified numbers of additional movements, in excess of the wishlist would have the following effects on the average delays:

- four additional departures<sup>73</sup> would, according to results of the Jacobs tests, increase the average delay by another seven minutes;
- six additional departures<sup>74</sup> would increase the average delay by 11 minutes; and
- 10 additional departures<sup>75</sup> would increase the average delay by 12 minutes.

In considering what constitutes “significant delays” the Commission regarded it appropriate to look beyond the average delays caused by such additional movements during this period, to the actual delays that would be experienced by individual flights. Analysis of the Jacobs sensitivity tests showed that at the 90<sup>th</sup> percentile (that is, from the 9<sup>th</sup> flight onwards, out of a sample of 10 consecutive flights), delays under the three Jacobs sensitivity tests (which involved adding between 4 and 10 additional movements during this peak period) would total from 32 to 45 minutes. This means that out of every 10 flights during this peak period, one will experience delays upwards of 32 - 45 minutes depending upon the number of additional movements during the period in excess of the wishlist. Given that an additional 10 flight movements in this three-hour period will give rise to one out of every ten flights experiencing delays in excess of 45 minutes, the Commission considers that such delays constitute “significant delays”.

In the light of the recommendations by the Consultants and in order to properly evaluate whether the actual Summer 2007 demand might exceed the Summer 2007 Wishlist, the

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<sup>70</sup> The Jacobs sensitivity tests took as a baseline the schedules facilitated Summer 2007 wishlist. This allows for 85 departures over a three-hour period in the early morning and generates, according to the Jacobs’ VisSim model, “average delays of over 8 minutes but under 10 minutes”.

<sup>71</sup> Jacobs Report section 5.4.1 and, in particular, Table 24 and Figures 15-18.

<sup>72</sup> The runway simulations by NATS found that a single additional flight in the hour commencing 0500 would raise the average delay by 3 minutes and two additional flights during that hour would add 5.5 minutes to the average delay.

<sup>73</sup> One each in the hour beginning 0500 and 0700 and two in the hour beginning 0600.

<sup>74</sup> Two in the hour beginning 0500, three in 0600 and one in 0700.

<sup>75</sup> Three in the hour beginning 0500, five in 0600, and two in 0700.

Commission sought from the Schedules Facilitator at Dublin Airport, the up-to-date position in regard to the summer schedule. This data is attached as Appendix III to this Decision.

The Commission, having been made aware that there were four additional movements requested in the peak 0500 hour which could not be accommodated within the current constraints, requested Jacobs Consulting to simulate the delay which those additional four movements in the peak hour might cause. Jacobs were requested to estimate the impact of those additional movements in terms of the average delay in the peak period and actual delay times for the 90<sup>th</sup> percentile flights.

Jacobs concluded that the four additional departures in the 0500 hour (with no additional movements in the following two hours) were calculated to result in an average runway delay of 13.8 minutes, 38% greater than the agreed delay criterion of 10 minutes, and a 90<sup>th</sup> percentile runway delay of 36.5 minutes.

The Commission considers on the basis of the information received from the Jacobs sensitivity tests and the NATS tests that, without coordination, "significant delays" will be experienced during the Summer 2007 scheduling season.

**(v) Consultation on updated Summer 2007 scheduling information**

In order to ascertain the views of all interested parties on the implications of the most up-to-date scheduling information from the schedules facilitator and the possible impact of unconstrained demand at the airport, the Commission, on 1 February 2007, issued a Notice (CN2/2007) which brought this data and the Commission's view on the appropriate scheduling status of Dublin Airport during the Summer 2007 scheduling season to the attention of interested parties.

The Commission, in the light of the information set out in Appendix III, sought the views of interested parties on the following two questions:

1. Did interested parties disagree that the scheduling information indicated an excess of demand over the Summer 2007 wishlist?

and

2. Did interested parties disagree with the Commission's tentative view that this excess demand would give rise to significant delays at Dublin Airport for the Summer 2007 season and which could only be overcome by coordination?

Letters enclosing CN2/2007 were issued to the following parties:

- all Irish airlines serving Dublin Airport,
- the Irish Aviation Authority (IAA) ,
- the Dublin Airport Authority (DAA),
- the Airport Operators Committee (through its chairman),
- Airport Coordination Limited (ACL) ,
- the manager of Dublin Airport in his capacity as chairman of the Dublin Airport Coordination Committee.

Additionally, an email was issued to the wider industry and interested parties to alert them to the existence of CN2/2007.

The dual factors of the proximity of the Summer 2007 season, and the Commission's wish to provide as much notice as was feasible of any change in designation to the airlines, meant that the timeframe for this final consultation phase was shorter than might otherwise be possible. A deadline of 12 noon on 7 February was set for the receipt of responses to the Commission's two questions.

Submissions were received from five airlines (**Ryanair, Aer Lingus, Aer Arann, CityJet** and **American Airlines**) and from the **DAA**, the **IAA**, **ACL** and the Irish Tourist Industry Confederation (**ITIC**). These submissions were placed on the Commission's website.

Except for Ryanair, none disagreed that there was excess demand for Summer 2007, that that additional demand would give rise to significant delays and that those delays could only be avoided by the introduction of coordination.

Ryanair considered that the Commission had behaved in an inappropriate and unlawful manner by, in Ryanair's view:

- failing to take account of its criticisms of the Jacobs Report,
- setting an unfair and unnecessarily short response time,

- failing to consult with users on measures to avoid coordination, and
- prejudicing the Summer 2007 operations of airlines by considering a change in scheduling designation after 31 January 2007.

The Commission considers these criticisms to be invalid. The Ryanair comments on the Jacobs Report have been responded to in detail in this Paper; the reason for the short response time has been explained; measures to relieve capacity shortages are discussed throughout this Paper and the timing of the Commission's decision, relative to the commencement date of the Summer 2007 season has also been explained.

Specifically in relation to Summer 2007 capacity and demand, Ryanair contended that:

- the wishlist did not represent the full capacity of the airport,
- Jacobs' view that actual demand would exceed the wishlist was speculative,
- the information from the schedules facilitator had been misrepresented,
- the conclusions reached by Jacobs in the delay simulations were not credible,
- the conclusion drawn that there would be significant delays which could not be overcome has not been proven, and
- any change in the scheduling status of Dublin Airport could not be contemplated without first being discussed with the Coordination Committee.

The Commission believes that it has already responded in detail to these criticisms in the body of this Paper. In summary however the Commission's position on these points is as follows:

- the independent external experts, Jacobs Consultancy, judged the capacity of the runway to be the Summer 2007 wishlist (as already agreed by the Coordination Committee)
- the view the demand will exceed capacity is not speculative: the evidence is provided in Appendix III.
- the presentation of the information from the schedules facilitator was not misrepresented by the Commission and has been found acceptable by all parties excluding Ryanair.
- the delay simulations were provided to the Commission by its independent experts, Jacobs Consultancy. For the reasons set out in section 5 (iv) of this Decision, the Commission concluded that the delays that would occur in Summer 2007 without

coordination would be significant; and measures to overcome delays have been taken fully into account.

- the work of the Commission leading up to this decision has been carried out in a public fashion with repeated opportunities for engagement by airline and other users of Dublin Airport.

Finally, Ryanair disagreed with the general propositions in the consultation questions and warned that any attempt to impose coordination would, on the basis of its perception of the inadequacies of the process, be challenged.

## **6. Decision**

Following its consideration of the Jacobs Report, and its consideration of all of the submissions and other information received following the publication of that Report, the Commission has accepted the Jacobs Report as the capacity analysis required under the Regulation and also has accepted the Report's conclusions and recommendations.

Following its consideration of the updated data received from ACL and from Jacobs Consulting in relation to user demand and the related implications for delay and in consideration of user views received on foot of the consultation process conducted on 1 February 2007, the Commission has come to the view that outturn peak demand at Dublin Airport in Summer 2007 will be greater than assumed in the current Summer 2007 wishlist, that consequently the airport will suffer "significant delays" and that such problems cannot be resolved in the short term.

In accordance with the provisions of Article 3 of Council Regulation (EEC) No. 95/93, as amended by Regulation (EC) NO. 793/2004, the Commission hereby designates Dublin Airport as coordinated for the duration of the Summer 2007 scheduling season.

Commission for Aviation Regulation  
12 February 2007

## **7. Appendix**

### **a) Appendix I - Executive Summary of Jacobs Report**

## EXECUTIVE SUMMARY

Jacobs Consultancy UK Limited, formerly known as Leigh Fisher Associates, has been retained by the Commission for Aviation Regulation (the Commission) to undertake an independent assessment of current and future capacity at Dublin Airport. The ultimate purpose of the capacity assessment is to assist the Commission by informing further their decision on the appropriate scheduling status at the Dublin airport, in accordance with the provisions of Article 3.3 of Council Regulation (EEC) No. 95/93 as amended by Regulation (EC) No. 793/2004 of the European Parliament and of the Council.

### APPROACH

The evaluation largely considers the period 2007-2010 or up to 27.4mppa. Although reference is made to subsequent years, the addition of significant additional capacity through the development of Terminal 2 (2009) and a parallel runway (circa 2012) will mitigate against any continued delays of significance. It is recommended that a capacity review is undertaken once the additional capacity from Terminal 2 and the parallel runway is operational, to re-assess the appropriate scheduling regime at the airport.

The capacity assessment has focused on three key elements of the Dublin airport system:

- passenger terminal
- apron stands
- runway/taxiway system.

Although landside access and airspace have not been assessed, it is noted that no significant landside or airspace capacity issues have been uncovered in the analysis or consultation that might influence a decision on the appropriate slot coordination regime at the airport. If there were to be a shortfall in kerbside capacity it is reasonable to expect that it could be appropriately managed to mitigate the impact. Furthermore, it is worth noting that the introduction of coordination would have a negligible effect on kerbside demand patterns and behaviour.

An extensive consultation exercise has been conducted during the assessment and summarised in Section 1 and Appendix A. Personal interviews, including with the individual representatives of the Dublin Airport Authority (DAA), Dublin Coordination Committee, Department of Transport, Irish Aviation Authority, Air Traffic Control, National Air traffic Services (NATS) and the main based carriers at the airport, were conducted. Discussions were also held with Airport Coordination Limited (ACL), who are currently responsible for schedules facilitation at Dublin airport. Issues of concern have been discussed with each party in endeavouring to understand current and future demand and capacity issues. The consultation has attempted to identify opportunities for mitigating any identified capacity issues and enhancements in operating flexibility. In addition the Airline Operators Committee was offered the opportunity to engage, directly contribute to the study and provide input and assumptions.

In determining appropriate assumptions for the analysis, a list of specific data requests was sent to the DAA and Airport Coordination Limited (ACL). Furthermore during the consultation exercise, consultees were asked for specific demand, operational and survey data that could strengthen the analysis.

## **EVALUATION CRITERIA**

As set out in Section 2, the traffic forecasts for the airport have been reviewed and under the 'Centreline Case', passenger traffic is forecast to rise from an estimated 20.4 million passengers per annum (mppa) in 2006 to 24.7mppa by 2010 which is an average growth rate of 4.9% per annum. It is noted that based on current trends, DAA expect demand to be significantly higher than forecast for 2006, currently estimated at 21.2mppa. Although updated forecasts are being prepared they were not available at the time of writing, although throughput in 2007 is expected to be 22.8mppa. This implies that the demand is running approximately one year ahead of the current centreline forecasts, in other words 24.7mppa is likely to be achieved in 2009. Air Transport Movements (ATM's) are only forecast to rise by an average of 1.9% over the same period largely due to increasing load factors. It is also pointed out that in assessing the capacity of the airport system, the peak hour demand, rather than the annual total is the key determinant. As such the analysis has reviewed busy hour data from Summer 2006, which therefore fully reflects the higher than expected traffic in Summer 2006.

An actual summer 2006 schedule, using a day representative of 'typical' operations, was used to assess the terminal and runway analysis. The Typical Peak Hour passenger (TPHP) flow in the schedule is broadly consistent with a 30<sup>th</sup> busiest hour and provides a robust basis for assessing terminal performance against service level standards.

DAA have provided queue time service level standards which has been supplemented by IATA defined levels of service where necessary. Given that demand represents the 30<sup>th</sup> busy hour, an equivalent to level of service 'C' has been used as a capacity criteria. If the level of service drops below 'C' then a facility has been considered to either be approaching or over capacity, depending on the length of time and number of passengers affected. Future year TPHP has been assumed to grow in line with total passenger forecasts. Given that over recent years the TPHP has grown at a lower rate due to larger increases in off-peak demand, this can be considered a conservative basis for the terminal assessment.

## **TERMINAL CAPACITY**

As set out in Section 3, Terminal capacity has been assessed through the use of a proven simulation model, ARRIVE-DEPART. A summer 2006 base case schedule has been used to calibrate the model against available survey data. Based on the 'shape' of the demand curve, maximum capacities for passenger processing facilities have been derived. The maximum capacities have then been assessed against the busy hour demand profile to quantify the potential passenger level of service for 2007-2010. Using DAA and IATA standards, an assessment has been made as to whether a facility is under, approaching or over capacity.

The results show that, despite likely localised congestion at security and immigration in Summer 2007, the check-in and security capacity enhancements proposed in 2007 and 2008 by DAA would appear to provide



sufficient capacity for the terminal to handle the predicted peak passenger demand through to 2010, but that congestion at security will require careful management in order to operate effectively in 2007 and 2008. It is noted that although immigration is very sensitive to short peaks in demand, the proposed centralisation of immigration in 2008 will improve processing efficiency and provide sufficient capacity through to 2010. Solutions to capacity constraint at immigration and security have been proposed.

Whilst there are circulation issues on the departures concourse, peak hour circulation can be improved through pro-active management of passenger flow to and from check-in, changes in airline check-in policy and a potential re-allocation of check-in desks within the concourse areas.

It is therefore concluded that despite likely localised issues in Summer 2007, based on the forecasts for passenger demand and the developments proposed by DAA, the passenger terminal system should be able to operate at an acceptable level of service through to the opening of Terminal 2.

## **STAND AVAILABILITY**

It is evident from the existing apron layout and stand allocation, as shown in Section 4, that Dublin airport is currently approaching stand capacity during the overnight period. However, there would appear to be only sufficient stands to accommodate current predicted wishlist<sup>1</sup> demand in summer 2007. However, during Summer 2007 contingency stands are likely to be required to accommodate scheduled aircraft at peak, and therefore stand allocation will require careful management at peak times. Due to works associated with the construction of Terminal 2, the number of stands available in winter 2007 will not meet peak demand requirements. Although additional remote stands are proposed in 2008-2010 to meet demand, there appears to be no contingency provided and the resultant increase in bussing will reduce the operational efficiency of airport operations. In addition to the difficulties likely to be caused by the construction of Terminal 2, there is also a risk that remedial pavement works may be required.

Taken together it is concluded that current stand availability will be significantly compromised from Winter 2007. In conjunction with the increased reliance on bussing and the potential for operational constraints with the construction of Terminal 2, additional demand beyond Summer 2007 will increase aircraft delay and exacerbate congestion in the cul-de-sacs.

## **RUNWAY CAPACITY**

NATS have assessed and confirmed the ability of runway 10/28 to handle the summer 2007 demand with average delays of less than the 10 minute criterion assumed from summer 2007. As shown in Section 5, a VisSim model of the runway and feeder taxiways has been constructed to investigate the capacity of the runway under a range of parameters, rather than just test current conditions. A base case model has been developed and calibrated against the HERMES model used by NATS.

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<sup>1</sup> In managing airline schedule requests, the appointed facilitator ACL, looks to voluntarily agree a schedule, defined as the wishlist, that provides a more balanced distribution of daily departures and arrivals within the capacity thresholds of the airport.

The modelling has confirmed the peak movement capacity of the runway as declared by NATS for summer 2007 and shown that additional peak movements lead to an exponential increase, not just in average but peak and 90 percentile delays. The key reason for the delay is the asymmetrical nature of the peak hour demand which constrains the effective capacity of the runway in this period.

An additional 2 movements per hour could allow the runway to handle a small increment in peak demand over the Summer 2007 peak hour wishlist. The VisSim modelling has shown that such small increases in peak capacity, *may* be achievable either through :

- ATC adopting reduced 1Nm landing clearances; or
- Additional airfield infrastructure, such as previous DAA proposals for a bypass taxiway, an expanded holding point and an additional RET.

We understand that DAA is currently assessing the business case for the apron enhancements, but it is clear that no improvements are likely by Summer 2007 and therefore will not provide any short-term solution to the peak period capacity constraint.

Whilst the development of Terminal 2 mitigates any potential future terminal capacity shortfall, the additional stands provided cannot be optimally used until the parallel runway is completed. It is therefore recommended that the development programmes for Terminal 2 and the parallel runway are reviewed and closely coordinated to ensure that additional stand and runway capacity is delivered as soon as possible.

## **CONCLUSION**

Due to the asymmetry of arrivals and departures in the peak morning schedule and reduced stand availability, additional peak services beyond those in the Summer 2007 wishlist will increase apron delays and average runway delays above the currently agreed 10 minute delay criterion. It is therefore recommended that Dublin Airport be designated as coordinated from the Winter 2007 season due to insufficient airport runway and apron capacity during peak times.

As shown in Section 6, evidence on prior activity patterns from recent seasons suggests that outturn peak demand would be greater than assumed in the current Summer 2007 wishlist. It is therefore recommended that schedules coordination at Dublin Airport also be strongly considered for the Summer 2007 season, as the airport will be at the capacity of its airfield infrastructure and there appears to be no operational contingency provided. Coordinated status for Summer 2007 would help to ensure that capacity constraints are effectively managed and fair access to available slots is provided.

Based on the analysis conducted, runway and stand constraints mean that the airport will not be able to cater for additional peak services until the proposed parallel runway has been completed and additional stands provided, although this is not to say that additional demand cannot be accommodated outside the peak hours. It is therefore recommended, that the appropriate scheduling status of the airport is reviewed again once the planned additional stand and runway capacity are operational.

**b) Appendix II – Conclusions and Recommendations of Jacobs Report**

## 7 CONCLUSIONS AND RECOMMENDATIONS

This report has considered the ability of the current and proposed airport infrastructure to accommodate the projected increases in demand over the period 2007-2012. Beyond 2009 the proposed introduction of Terminal 2 will negate any issues concerned with terminal capacity and increase stand capacity, whilst the proposed development of the parallel runway in 2012 will provide additional runway capacity.

In assessing whether the airport should be designated as coordinated, the capacity of the terminal, stands, taxiway and runway have been reviewed. However, in determining whether the coordination status at the airport should be changed, there are two key issues to consider:

- Does demand exceed capacity such that significant delays cannot be avoided at the airport
- Can solutions be developed to effectively resolve identified problems in the short term

In summary, the following has been concluded from the analysis:

### Terminal

- With the infrastructure enhancements proposed in 2007 and 2008 by DAA, there would appear on balance to be sufficient system capacity for the terminal to handle up to 24.7mppa at a reasonable level of service.
- There are likely to be capacity issues that justify active management and temporary facilities on the concourses, at security and Pier A immigration during Summer 2007.
- Whilst there are circulation issues on the departures concourse, peak hour congestion could be mitigated through active management, changes in airline check-in policy and a potential re-allocation of check-in desks within the concourse areas.

### Stands

- The airport appears to only have sufficient stand capacity to handle the Summer 2007 wishlist
- It appears that by the winter 2007 season, the demand for stands at Dublin Airport will exceed the supply of stands.
- With the proposed stand re-allocations associated with the development of Terminal 2, the lack of availability of contact stands will be a significant constraint on demand in 2008 and beyond.
- The reliance on remote stands and bussing, and the disruption caused by the construction (and potential pavement works) are likely to lead to unacceptable levels of delay and congestion.

### Runway

- The capacity of the runway is largely as declared by NATS for summer 2007 and sufficient to accommodate the summer 2007 schedule wishlist.
- Significant investment in additional taxiway infrastructure and improvements in ATC procedures may potentially yield a small increase in current declared peak capacity. However, the

economic case for such investment has not been sanctioned by the DAA or the airlines at the time of writing and seems unlikely to be deliverable in the short term.

- Given the asymmetry of arrivals and departures in the morning peak, additional peak demand beyond that set out in the Summer 2007 wishlist will significantly increase runway-based delays.

Due to the asymmetry of arrivals and departures in the peak morning schedule and reduced stand availability, additional peak services beyond those in the Summer 2007 wishlist will increase apron delays and average runway delays above the currently agreed 10 minute delay criterion. It is therefore recommended that Dublin Airport be designated as coordinated from the Winter 2007 season due to insufficient airport runway and apron capacity during peak times.

As shown in Section 6, evidence on prior activity patterns from recent seasons suggests that outturn peak demand would be greater than assumed in the current Summer 2007 wishlist. It is therefore recommended that schedules coordination at Dublin Airport also be strongly considered for the Summer 2007 season, as the airport will be at the capacity of its airfield infrastructure and there appears to be no operational contingency provided. Coordinated status for Summer 2007 would help to ensure that capacity constraints are effectively managed and fair access to available slots is provided.

Based on the analysis conducted, runway and stand constraints mean that the airport will not be able to cater for additional peak services until the proposed parallel runway has been completed and additional stands provided, although this is not to say that additional demand cannot be accommodated outside the peak hours. It is therefore recommended, that the appropriate scheduling status of the airport is reviewed again once the planned additional stand and runway capacity are operational.

**c) Appendix III – Demand for slots for Summer 2007**

*Table 1*

**DUBLIN SUMMER 2007 DEMAND v CAPACITY**

Based on airline schedule submissions to ACL for a the full 217-day season (25 Mar - 27 Oct) as at 11:30 31 January 2007

Hour (UTC)	Demand			Capacity			Utilisation		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
0000	426	303	729	4991	5425	6944	9%	6%	10%
0100	158	1	159	4991	5425	6944	3%	0%	2%
0200	188	58	246	4991	5425	6944	4%	1%	4%
0300	217	0	217	4991	5425	6944	4%	0%	3%
0400	797	697	1494	4991	5425	6944	16%	13%	22%
0500	520	7079	7599	4991	6727	8680	10%	105%	88%
0600	2454	5230	7684	4340	6293	8680	57%	83%	89%
0700	3437	3301	6738	4774	5425	8897	72%	61%	76%
0800	3202	4109	7311	4774	6076	9765	67%	68%	75%
0900	4179	3059	7238	4991	5208	8897	84%	59%	81%
1000	4148	3892	8040	5642	5208	9548	74%	75%	84%
1100	4473	4013	8486	4991	5859	9548	90%	68%	89%
1200	3711	4149	7860	5208	5425	9548	71%	76%	82%
1300	3770	3455	7225	5642	5208	9548	67%	66%	76%
1400	4193	4167	8360	4774	5642	9331	88%	74%	90%
1500	2478	3738	6216	4991	5208	8029	50%	72%	77%
1600	4300	3920	8220	5425	6076	10199	79%	65%	81%
1700	2552	4538	7090	4991	6076	9548	51%	75%	74%
1800	2546	2205	4751	4991	4991	8029	51%	44%	59%
1900	3150	2651	5801	4991	4774	8029	63%	56%	72%
2000	4150	1892	6042	5859	4774	8463	71%	40%	71%
2100	4560	1288	5848	5859	5425	7812	78%	24%	75%
2200	4058	176	4234	4991	5425	6944	81%	3%	61%
2300	817	492	1309	4991	5425	6944	16%	9%	19%

Table 2

DUBLIN SUMMER 2007 (as at 31 Jan 2007)

Requested hour (utc)	Cleared OK	Adjusted	No slot offered	% Cleared OK	% Adjusted	% No slot offered
0	728		1	100%	0%	0%
100	159			100%	0%	0%
200	246			100%	0%	0%
300	217			100%	0%	0%
400	1494			100%	0%	0%
500	6102	1496	1	80%	20%	0%
600	6837	837	10	89%	11%	0%
700	6636	99	3	98%	1%	0%
800	7216	95		99%	1%	0%
900	7232		6	100%	0%	0%
1000	7887	141	12	98%	2%	0%
1100	8005	475	6	94%	6%	0%
1200	7174	686		91%	9%	0%
1300	6943	275	7	96%	4%	0%
1400	7684	673	3	92%	8%	0%
1500	6213		3	100%	0%	0%
1600	7999	217	4	97%	3%	0%
1700	6633	455	2	94%	6%	0%
1800	4717	31	3	99%	1%	0%
1900	5799		2	100%	0%	0%
2000	5876	166		97%	3%	0%
2100	5602	245	1	96%	4%	0%
2200	3976	258		94%	6%	0%
2300	1309			100%	0%	0%
Grand Total	122684	6149	64	95%	5%	0%

On the basis of this data, Jacobs Consulting estimated the impact of this additional demand on the:

- Average delay in the peak period; and
- Actual delay times for the 90<sup>th</sup> percentile flights (i.e. the 90<sup>th</sup> flight onwards, out of a sample of 100 consecutive flights).

as shown in Table 3.

Table 3

Case	Additional departures 0500/0600/0700 hrs	Test movement in hrs mins	Average runway delay mins	90 <sup>th</sup> ile runway delay mins
2007 Wishlist	0/0/0/	Dep 31/29/25	8.5	30
VisSim Test	4/0/0	Dep 35/29/25	13.8	36.5