5th January 2007

Mr Cathal Guiomard
Commissioner for Aviation Regulation
Commission for Aviation Regulation
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Alexandra House
Earlsfort Terrace
Dublin 2
Fax No. 6611269

Dear Cathal,

Dublin Airport Capacity Review

On 25th August 2006, I wrote to you welcoming the decision by CAR to commission a new capacity assessment of Dublin Airport and setting out our view of the key requirements which the study must meet in order to properly satisfy the Regulation and ensure that full coordination only be considered as a last resort. Regrettably, the Report by Jacobs Consultancy falls far short of these requirements.

Firstly, in terms of the process:

- There has been limited engagement with users in terms of the input assumptions. In many cases, assumptions are based on IATA standards which are not accepted as relevant for the vast majority of Dublin traffic;
- There has been limited discussion with users regarding future demand;
- There has been no discussion with users regarding the modelled output as a basis for discussing whether there are operational or other solutions to mitigate any identified problems;
- There has been no consultation with the Coordination Committee in accordance with Article 5 of the Regulation.

Secondly, in terms of the requirements of the Regulation, the Regulation is precise regarding the basis for designation of an airport as coordinated:

(a) the shortfall is 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 fall.

The Jacobs report fails to identify that either of these necessary conditions exists. It does not identify the capacity shortfall as being serious enough to lead to significant

delays and it fails to establish that there are no possibilities of overcoming the problems. Specifically, the report:

- does not consistently reference its analysis to the impact on delays;
- does not demonstrate that any delays would be serious;
- does not use a realistic profile of future busy period demand, leading to a significant overstatement of any potential problems;
- does not correctly assess the true apron and runway capacity;
- does not consider whether there are possibilities to overcome any identified problems, other than solutions proposed by DAA;
- uses unsubstantiated assertions regarding demand in summer 2007 exceeding the ACL wishlist as a basis for recommending coordination.

I am attaching a schedule of detailed comments prepared by York Aviation on the shortcomings and inconsistencies in the Report itself. The report is muddled and not easy to read with descriptions of assumptions, demand forecasts, current facilities, future facilities and model outputs being mixed up in various sections of the report. Presentation of results by tabular or graphical output is not consistent, nor are demand assumptions clear and consistent. It would have been helpful if there was a distinction in presentation between the calibration for 2006, the effect of additional facilities in future years and the impact of better management options in terms of consistent presentation. Our comments reflect the structure of the Report. The issues raised need to be addressed prior to any further consideration of the matter.

Once the Report has been amended, it is imperative that users are properly consulted regarding what action can be taken to avoid the need for a change in the coordination status. This is a necessary pre-requisite before any change is contemplated and consulted on.

I look forward to hearing from you regarding the next steps in the process and request a meeting with you to discuss the above concerns.

Yours sincerely,

Jim Callaghan
Head of Regulatory Affairs and Company Secretary

Attachment: Comments of York Aviation on the Jacobs Report

DUBLIN AIRPORT CAPACITY REVIEW – JACOBS CONSULTANCY
6TH DECEMBER 2006

COMMENTS PREPARED BY YORK AVIATION ON BEHALF OF RYANAIR

1 Executive Summary

1.1 Approach (page (i))

1.1.1 The evaluation has only considered the period 2007-2010 or up to 27.4 mppa and assumes that T2 comes on stream at 2009 and the new runway in 2012. The study TOR required an assessment which takes into account planned capacity. Ignoring the form of development proposed by DAA has the effect of obscuring key issues. In particular, it has resulted in important issues raised by the airlines being ignored, in particular the alternatives to the T2 scheme being developed by the DAA. These alternatives are essentially a retention of Pier C, the development of a new pier similar to the new Pier D to the east of Pier C (with Pier C being retained), further adaptations and improvements to the current terminal taking its capacity way beyond the limitations that the Jacobs' assessment suggests and improvements to the performance and operation of the current main runway. This problem is further compounded by the fact that it is the precise form of development proposed by DAA, which gives rise to the capacity issue.

1.1.2 Jacobs state that extensive consultation has been held with the main based carriers. We would suggest that this consultation has been limited in scope, depth and frequency. Indeed the most resent 'on-site' meeting Jacobs held with Ryanair was late in the study process, 24th November 2006, and at the request of Ryanair. The consultation on inputs to the process in no way replaces the need for consultation on the validation of outputs or on the means by which any agreed shortfalls in capacity can be overcome. These latter two stages have not taken place.

1.2 Evaluation Criteria and Terminal Capacity (page (ii))

1.2.1 The Jacobs' approach to the evaluation is correct to home in on the busy hour of a representative busy summer day; however they have applied a growth rate to the busy hour that is the same as for the annual forecast. This then exaggerates the growth and hence impact of the busy hour by ignoring the likely scenario where the busy day profile will display greater growth in the shoulders and off peak parts of the day and hence proportionally less growth in the peak hour. This is important in terms of the assessment being realistic and fit for purpose.

1.2.2 Jacobs acknowledge this fact in their report, however make no attempt to account for this in their findings and consequently their assessment fails to connect the busy day volumes and peaks they analyse with the annual forecast, over-inflates the effect of the peak and so implies a change to coordination status at an earlier stage than is in fact required, assuming everything else is correct.

1.2.3 A more robust approach would have been to develop busy day schedules linked directly to the annual forecasts for each of the years during the study period to 2010, and we would suggest for key years beyond this to test the capability of the terminal and stand capacity thoroughly, in order that judgments on the capacity of what is there and what is required can be based on a sounder footing. Such an approach would include for a full assessment of route development, fleet mix and key characteristics of

market segments, informed by carrier views on changing patterns of demand. Jacobs only reference to these latter criteria is short term, 2007 only, views by DAA and some of the carriers with very loose and potentially exaggerated assumptions of future peak period demand, in particular that associated with long haul operations. For example, Ryanair may shift some of its early morning based operations to inbound operations, e.g. from Manchester, in future years. This would affect the consideration of early morning stand capacity.

1.3 Stand Availability (page (iii))

1.3.1 Jacobs correctly state that stand numbers will be severely compromised during the construction phases of T2; in particular the numbers of contact stands. However, if the alternative strategy we outline at 1.1.1 is adopted instead then the numbers of available stands, including wide bodied contact stands, will remain at a high level throughout the construction period. It is then the DAA strategy that will result in this problem.

1.3.2 Jacobs state that the resultant increase in bussing will reduce the operational efficiency of operations. Whilst it is true that operations will change as a consequence of bussing there is no evaluation as to whether the DAA have the correct plans and resources available to ensure that bussing does not cause delays to flights which is the critical criteria. The only recommendation by Jacobs, later in the report, is that the DAA have a single provider of the service. What then are the DAA's plans for bussing?

1.4 Runway Capacity and Conclusion (pages (iii) & (iv))

1.4.1 We give comments regarding these elements of the executive summary in our review of Chapter 5, Runway and Taxiway Capacity and Chapter 6, Coordination Status. There appears to be some confusion regarding the treatment of any delays consequent upon apron bussing arrangements and any linkage to runway related delays. These are separate issues and should not be confused.

2 Chapter 1: Introduction

2.1 Appendix C (page 1)

2.1.1 The TOR at point 3 calls for a "full consultation with all relevant parties". Whilst Ryanair have been consulted by Jacobs we would argue that this has been intermittent and that meaningful discussions on site only took place late in the process and at Ryanair's request. The issues raised, whilst acknowledged, have not been fully taken into account.

2.1.2 Furthermore, whilst there has been consultation regarding inputs to the study, there has been no consultation in respect of the validation of the modelling results for Summer 2006 nor of the means of overcoming any identified capacity shortcomings in future years to enable the impact of such solutions to be modelled. This is an essential stage in the process and until this round of consultations has taken place the study cannot be said to be complete.

2.2 Consultation and Assumptions (pages 2/3)

2.2.1 The walk around that took place with Ryanair, on the 24th November at Ryanair's request, was confined to the landside areas only because the Jacobs representatives had forgotten to bring their photo IDs and visitor passes for the airside area could not be arranged at such short notice. Ryanair had several airside related issues that they

wished to discuss with Jacobs as part of this on-site visit. Due to the fact that this site visit took place only around a week before Jacobs were due to submit this report there was insufficient time in the programme to arrange a second site meeting and therefore Jacobs understanding of potential issues and solutions is necessarily limited.

2.2.2 Appendix A contains many assumptions used by Jacobs, which users did not have the chance to review. The report confirms that only assumptions related to check-in were forwarded to the AOC for comment. Why were the other assumptions only discussed between Jacobs and the DAA? Users would have had comments and views regarding some of these other assumptions. Many of these appear to have been derived by Jacobs or by DAA and may not be agreed as appropriate by users. Also, Jacobs have relied on IATA standard of service 'C' as the benchmark. This may not be appropriate in all terminal areas as a differentiated product is required; low fare airlines operate to different service standards than full service transatlantic carriers for example. Failure to differentiate and use appropriate services standards will result in an erroneous assessment of available capacity. It is fundamental that the service standards to be used in the assessment be agreed with users.

2.2.3 Jacobs recommend that a full capacity study should take place in 2012. This section again takes the timing of T2 as read and ignores how the current terminal capacity can be stretched, thus further deferring costs and providing the time for a rounded assessment of what is required in the best interest of all DUB carriers to be evaluated and set out. The impact of these proposals needs to be fully assessed.

2.3 **Analytical Methodology (page 3)**

2.3.1 The two tools that Jacobs have used, ARRIVE-DEPART and VisSim, are not widely used in the industry. It would have been helpful then if there was more information in this report as to what exactly these tools are, how do they function, what the outputs look like (including visuals) and with reference to the other airports where these have been applied what type of studies were undertaken and when.

2.3.2 It is not clear how the calibration of these models was undertaken. A specific requirement should be to ensure that the models could replicate, as far as reasonably practicable demand and capacity conditions, including delays at Dublin Airport during Summer 2006. It was expected that the results of this calibration would have been discussed with users as part of the calibration and validation process before proceeding to model future years' conditions. Without this validation process, users can have no confidence in the results, particularly given other concerns set out in this note. As noted above, the service standards to be applied also required agreement with users before proceeding to future years' modelling.

2.3.3 We note that, although these do not appear to have been used to inform an analysis of the changing pattern of demand over the year and day affecting peak hour flows, information about new routes was collected from airlines. We note that specific account was taken of the impact of transatlantic open skies and this was "added" to the stand demand estimates. It is not clear the relevance of this. First of all, there must be considerable doubt about the timing of EU-US open skies in the light of recent developments in the USA over airline ownership and given the timing of the next presidential elections. Secondly to the extent that there are additional US movements, these will tend to arrive following the peak of early morning outbound departures by based aircraft and so not add to stand demand.

3 Chapter 2: Demand Context

3.1 Forecasts (page 5)

3.1.1 Whilst accepting that DAA is updating its forecasts, understanding the detail of the forecasts is vital to understanding the shape of future demand. There is insufficient exploration of the nature of future demand and its impact on use of capacity. For example, our understanding of the nature of future growth is that growth by based airlines will only account for a relatively small proportion of DAA's expected growth. This must have implications for the profile of future busy period demand.

3.2 Peak terminal Demand (page 6)

3.2.1 Jacobs claim that the higher 30th busiest hour in Summer 2005 compared to Summer 2006 may reflect the effect of the schedule coordination in place during this period. This is unproven and the effect of coordination, or not, cannot simply be evaluated on the basis of this one element. It may equally reflect a structural change in the shape of demand at Dublin, which could have consequences for the shape of future years' demand. The failure of Jacobs to investigate the reasons for this and any consequent implications is a fundamental flaw in their report.

3.2.2 Jacobs have also only focussed on concourse circulation, departures security and immigration with respect to peak terminal demand. This again fails to examine what the eventual capacity of these components might be given potential options to stretch the terminal capacity beyond 2009 forecasts demand, but crucially fails to examine what the eventual capacity of all the other terminal elements might be; some of which may be able to manage demands way beyond 2009 levels without the need for investment. As such this supports the business case to maximise the capability of the current terminal before T2 is required. Furthermore, the focus on the limiting elements in isolation from the capacity of other terminal elements results in a failure to adequately examine the scope for overcoming any constraints by reference to target capacities associated with other elements.

3.3 Busy Hour Forecasts (page 7)

3.3.1 Jacobs confirm that the 4.9% annual growth is applied to the peak hour. We reiterate our concern that this is inflating the effect of the peak hour and hence overstates the annual throughput's effect on the infrastructure required.

3.3.2 Jacobs state that with peak hour capacity approaching its original design limits results in additional demand increasingly being accommodated in off peak periods. This is a normal pattern at maturing airports where the off peak and shoulders absorb more of the daily, and hence, annual growth, whilst the peak hour growth is much slower. The key is whether there is evidence of any traffic being turned away from DUB. We do not believe there is such evidence. Greater exploration is required of the composition of demand growth to understand the demands it will place on capacity.

3.3.3 Table 2 sets out the departure and arrival terminal busy hour rates from 2006 to 2010. These have been calculated by applying the 4.9% per annum value from the annual forecasts. As we have stated, and Jacobs themselves acknowledge, the peak hour will likely grow at a slower rate than this. They nevertheless persist in utilising this higher figure and so the output of this report is consistently overstating the demands being placed on the terminal by any of the annual forecast values. If the peak hour grows by 4% instead of 4.9% then the equivalent peak hour for departures, for example, is reached a year later. If it is just 3%, then it is at least 1½ years later. This is then

crucial. As had more realistic growth rates been applied to the peak hour then the conclusions of this report might be very different.

3.3.4 Jacobs attempt to diffuse the issue by stating that the report is to assess the scope of the facilities to accommodate increased demand rather than to produce detailed forecasts. However, if the assessment is to be used to inform a time bound assessment of when a change in coordination status is required, the analysis needs to be grounded in a robust approach to forecasting both in aggregate and busy period terms. In view of this, the absence of a detailed schedule building exercise is a fundamental flaw.

3.4 Summer 2007 (page 8)

3.4.1 We are not clear why a different approach was adopted to identifying peak hour runway and terminal demand in Summer 2007. This will lead to anomalous results and could have been avoided if a rigorous approach to schedule building had been adopted.

3.4.2 Jacobs make repeated references to the ACL 2007 Wishlist throughout the report, one such reference in this section. However, nowhere is this Wishlist set out for the reader. In any event, our understanding is that runway capacity is more than adequate to accommodate this Wishlist on the basis of an 8 minute criterion, rather than the adopted 10 minute delay criterion. We will discuss this further below.

4 Chapter 3: Terminal Capacity

4.1 Approach (page 9)

4.1.1 Jacobs state that capacity is therefore a function of both the processing rate and the queue that is deemed as being acceptable. Queue length standards are subjective in terms of determining what is or is not acceptable. In setting such standards there should be close discussion between DAA and the airlines. We do not believe that this is being undertaken as a matter of course and is not being monitored to understand what changes are taking place or how queues can better be managed. Critically, capacity is also about enabling passengers to be processed without delay to the flight.

4.2 Level of Service Criteria (page 11)

4.2.1 Specific queue or space time standards have been supplied by the DAA. What is the quality of this, and other operational research data, supplied by the DAA? Is it recent? How has it been researched? Jacobs have applied IATA and their own inputs to assumption items absent from the DAA data; why have no new research exercise been done to gather actual DAA values for the study. It is dangerous to simply use the generalised IATA standards for such a detailed exercise. DAA based inputs are vital, as each airport is unique in every respect. IATA standards are O.K. for generalized assessments but will potentially under or overstate the true picture for an individual airport. Also, IATA standards may not be relevant for low fare airlines. It is unclear how the effect of internet check-in has been taken into account.

4.2.2 Please explain how the m^2 values in Table 4 have been calculated.

4.2.3 Reference is made to previous empirical capacity studies undertaken by Arup. Please provide a summary of these results and how they have been derived and then used for this report.

4.3 **Arrive-Depart Calibration Against 2006 Operations (page 12)**

4.3.1 Jacobs have referenced 'anecdotal evidence' from the consultation exercise. Whilst useful, such evidence if it is to have meaning and substance needs testing and researching. Have Jacobs done this?

4.3.2 Reference is also made to 'sensitivity tests'. What are these and how have they informed the study?

4.3.3 The average pre-check-in dwell time of 23 minutes appears very high. Has this been validated with further research as clearly many passengers proceed directly to the check-in queue on entering the terminal and so will have a near 'zero' value. For an average of 23 minutes to apply to all passengers means that some passengers are dwelling for very long periods and hence be located in landside catering facilities not the check-in area.

4.3.4 Figure 3 illustrates that the 'total desks required including unusable desks' peak is of a very short duration. It also illustrates that the gap between this line and the 'actual desks in use' line represents the 'allocation inefficiencies' that arise form the way the desks are currently allocated. Have Jacobs produced graphs that illustrate how these inefficiencies and peaks can be improved through better and/or alternative desk allocations? They allude to options later in the report on how desks, including the new Area 14, might be used. However to understand how these options might work in practice then Figure 3 style graphs would be useful.

4.3.5 Figure 4 shows an average check-in queues length across all traffic. What is the equivalent graph for short haul only, long haul only and charter traffic? Reference is made here and elsewhere to SLAs; with whom have these been agreed?

4.3.6 The section on security highlights the default differential in the passenger loading at channels A and B. To an extent passengers' choice of channel is voluntary but could be influenced through better management. What then would be the effect of a more even loading on security capacity across both channels and the available units within?

4.3.7 What is driving the midday peak loading at Immigration, illustrated in Figure 6? The text implies it is the long haul arrival peak, yet this occurs earlier in the morning.

4.3.8 To what extent is the availability of Immigration Officers an issue? Are all desks manned in the peaks that could be manned?

4.3.9 What is the mix between CTA, EU and non-EU passengers at Immigration as each category will have a different range of processing times?

4.3.10 Whilst we would agree that the passenger loading within the baggage reclaim hall is related to the processing speed at Immigration there are also other crucial issues associated with baggage reclaim. Mainly the number and size of belts, the peak mix of flight demand – which will be a function of the number, type and size of flights.

4.3.11 The dwell time for friends and family in the arrivals hall expressed as an average is very high at nearly 52 minutes. Has this been validated? What is the pax to meeters/greeters ratio at DUB and how is this expected to change in the future? How does this vary with different types of flight. What will be the impact of improved public transport usage?

4.3.12 There is no mention within the calibration section of the effect on delays. Bearing in mind that this is the key criterion for decisions regarding coordination, this appears to be a critical omission.

4.4 **Departure Terminal Capacity Assessment (page 19)**

4.4.1 Why have Jacobs assumed only a minimal gain in desk throughput capacity by reallocating desks? Some carriers have overly generous allocations compared to passenger throughput and several desks could be freed up through improved desk allocation strategies.

4.4.2 Is it correct that so many passengers have a trolley and so warrant an average of $1.7m^2$ per passenger? Many do not use a trolley and an increasing number are travelling with cabin only baggage. Indeed, Ryanair estimates that approximately 40% of its passengers network wide travel with cabin baggage only (this percentage obviously fluctuates depending on the time of year). This should feed through to a lower m^2 per passenger. Have the current patterns of baggage and trolley usage been validated with recent research? If the m^2 is less then more passengers can be accommodated than the report implies. Also, why has no account been taken of greater use of internet check-in and other changes in behaviour? This is precisely the type of issue which needs to be discussed with the airlines to see if there are prospects for better use of existing capacity. For example, what measures could be taken to reduce the incidence of passenger's arriving early (or to reduce the early arrival of meeters and greeters). We note that the survey used as a calibration check for this Report stems from Summer 2006, when the report notes that passengers were expressly advised to arrive at the Airport early.

4.4.3 Whilst we support the use of the 'green/yellow/red' colours to help illustrate the status of a facility in capacity terms we would disagree with the criteria. For example 'yellow' applies to a facility from 50% to 90% usage. There is in fact still 10% of available capacity which can translate in to a significant throughput potential still being available. We would suggest that 'yellow applies to near 100% of available capability and that 'red' is used when the facility is genuinely saturated or when demand exceeds the supply. This would give a different impression of the capacity status of some of the DUB facilities and illustrate that there is more capability in the current terminal than this report suggests.

4.4.4 Please clarify the areas and passenger capacities of the new Area 14 check-in area. The text does not make this clear. A diagram would help illustrate this better.

4.4.5 Scenario 2 – Ryanair have also indicated that they are considering 'common check-in' that would further improve the passenger throughput per desk. Has this been considered for Area 14 and other allocation scenarios? What is the impact of different paramerer assumptions?

4.4.6 The departure busy hour rate in Table 7 for Check-in scenario 2 that has Ryanair using Area 14 is at a level that equates to 2012 at a busy hour growth rate of 4.9%. We have already stated that this 4.9% is excessive and by illustration of a 4% value is used then check-in capacity could go to 2015 and at 3% to 2017 or 2018. This is significant as it totally undermines the need for a T2 at 2010 in terms of check-in capacity. Even the 4.9% busy hour growth rate used by Jacobs implies that T2 is required no sooner than 2012 and with likely further improvement in check-in throughputs from behaviour changes and take up of on-line and self service processes will likely stretch further.

4.4.7 Reference is made to the congestion caused within the check-in concourse from people circulation. We would agree that this is a major issue. However, much can be done to overcome this by improving the use of both entrance doors and improved information and flow management within the check-in hall. Jacobs refer to these types of improvements later in the report and we would recommend strongly that DAA embark on a package of improvements, many of which are organisational rather than purely physical, to improve flows.

4.4.8 The assessment of the concourse occupancy densities by Jacobs raises questions regarding the periods of the morning when occupancies are at the peak. In the absence of the data used to generate this assessment, it is difficult to be certain on how the information has been interpreted. If a different approach to the definition of 'yellow' and 'red' is applied as suggested earlier, then how might this affect the diagrams illustrated?

4.4.9 We are unsure the relevance of comments about excess congestion caused when flights are cancelled as, by definition, this is not a 'normal' event which would be used as a basis of capacity assessment.

4.4.10 The Departure Concourse diagrams demonstrate that at no time was capacity across the Check-in Area/Departure Concourse fully used, even at 05.00. This suggests clearly the scope for exploring better capacity management options. We would question the definition that the peak pre-check-in circulation space occurs as early as 03:00 each day. Has this been validated by observation?

4.4.11 Regarding security processing, the information contained in Table 8 would also be enhanced by having a passenger per hour throughput value so that a relationship to the suggested busy hour rate can be made.

4.4.12 We would support the idea of a centralized entrance to security with a management of the flow to direct passengers towards either A or B to ensure an even demand at each security unit. Much of the queue would be contained within this redesigned approach to the channels and not backing out in to the central check-in zone as Jacobs suggest. Will the DAA consider this option? Such a solution ought to help enable security capacity to go beyond 2009.

4.4.13 Reference is made of the effect on airside hold room capacity being reduced as a consequence of the demolition of Pier C ahead of the opening of T2. This adds weight to our grave concern that the DAA strategy is fundamentally flawed and too costly. It is nonsensical to demolish Pier C, recently built, and capable of handling to a high standard a mix of narrow and wide bodied flights. Such a strategy that demolishes this pier is not only raising the cost of T2, but creating an interim pier and stand capacity shortfall that will require an even higher level of bussing. We have already suggested that an alternative would be to retain Pier C, build a new pier to its east similar in design to the new Pier D (and so saving on design costs) and stretching the current terminal beyond the capacity implied by the strategy and so deferring T2 to a much later date.

4.5 **Arrival Capacity Assessment (page 35)**

4.5.1 Is the option of EU and non-EU passengers sharing the same Immigration desks feasible? Non-EU processing is much greater than for EU as well as potentially being more involved in terms of paperwork preparation ion advance, etc. This will surely inconvenience the majority flow of faster EU passengers and lead to increased average queue times.

4.5.2 The ‘current operations’ arrival flight data may be correct at the time of the Arup study. Is it still valid and what will the peak mix across the piers be in the future? Answers to this would be assisted by the development of busy day schedules and the use of a stand allocation tool.

4.5.3 The ‘future capacity’ peak hour population is assumed in the text to grow by 6% in line with predicted growth for 2007. Where has this 6% come from? We have already stated our concerns that 4.9% used for the busy hour rate as being too high.

4.5.4 What steps are being made by the DAA to ensure that manning levels are not the real constraint at Immigration, either in the short or longer term?

4.5.5 Table 15 expresses reclaim capacity in terms of passengers only. Whilst useful, the number, mix, size and type of flight are vital and essentially a greater influence on the numbers, size and arrangement of reclaim belts required. This is a more critical parameter than simply the accumulation of passengers.

4.5.6 Arup have correctly questioned the 2.56 friends and family per passenger value supplied by DAA. However, this is an example of an assumption that should have been shared with the AOC in the early stages of this study as the AOC too would have questioned such a value. Discussion could then have been held with the DAA and agreement on what should instead be assumed. A potential outcome might have been the need for new research. This could then potentially have been actioned or at least agreed as an action for the near future to address. If this 2.56 value is suspect, what about some of the values supplied by the DAA for other assumptions?

4.6 **Conclusion (page 43)**

4.6.1 Jacobs state that on balance terminal capacity will handle up to 24.7 mppa, sufficient to handle demand until the opening of T2 in 2009. Why has the study not considered how much more capacity could be generated in the current terminal? We believe that the current terminal could be adapted to handle at least 30 mppa and probably more.

5 Chapter 4: Stand Availability

5.1 Jacobs state that future schedules have not been developed for this part of their study. This is of great concern to us. It is extremely difficult at the level of detail required by this study to make judgments on stand numbers in the absence of busy day schedules and the subsequent use of a stand allocation model capable of replicating not just the current stand plan and allocation strategies but also the future arrangements, including all the sub phases. Consequently we are uncertain of the validity of conclusions made. It is also unclear why July was looked at as the basis for stand demand but September as the basis for terminal demand.

5.2 We are also hampered by an absence of any diagrams, plans or sight of the stand allocation charts used by Jacobs to help understand where the conclusions made have been derived from.

5.3 Whist Jacobs have provided a view of the narrow biased peak and wide biased peak, we need to understand what the actual peak numbers of aircraft are and how this mix will change. Some information is provided, however it is very difficult to interpret and relate text to tables provided in the absence of supporting diagrams and charts.

5.4 For example, Table 19 implies that by 2010 there will be a net gain of 16 stands, yet Table 20 suggests that this is in fact only 12, (9 narrow bodied and 3 wide bodied). Whether it is 12 or 16, this is a poor return for the level of investment and intervening

disruption that the DAA strategy is providing. Again we draw attention to the wasteful disposal of Pier C and its stands. Furthermore, we understand that the future apron supply is the subject of a current study by DAA. In the circumstances, it is difficult to see how any conclusions can be reached pending the outcome of this study. We are concerned that Jacobs have merely relied on stand figures supplied by DAA rather than looking creatively at the possibilities to improve capacity as required by the Regulation.

5.5 Jacobs assume that the respective based over night narrow bodied peak stand demand and the later wide bodied long haul arrival driven demand overlap and that this will get worse in the future. This is an assumption that is suspect in the absence of a set of busy day schedules and a proper stand planning exercise. We would suggest that with the exception of a relatively small number of long haul arrivals that most large aircraft arrivals will fit in comfortably after many of the based overnight narrow bodied aircraft have departed as happens at Gatwick and Manchester.

5.6 General reference is made to the stand demand from cargo, and other types such as overnight East European airlines and charter aircraft. As these appear to utilise a significant number of stands we would ask whether this level of utilisation is correct going forward, and whether in fact some of this demand can be discouraged or reorganised. For example, why are East European airlines choosing to overnight aircraft at Dublin rather than retain them at their own continental base?

5.7 Are the assumptions on the number of wide bodied stands correct? As some of this demand depends on a set of assumptions associated with 'open skies' can we please see these assumptions? What is the current status and timing of 'open skies'? Furthermore, the assumption that all new long haul movements will be by widebodied aircraft rather than smaller B757 or B767 (small widebody) seems overly pessimistic and will lead to an exaggerated view of demand on apron space. Furthermore, to the extent that there are frequency increases, these are likely to spread the peak rather than lead to increase peak period stand demand.

5.8 Table 14 implies that there will be an oversupply of wide bodied stands by 2010 by a margin of 5. This questions the wisdom of this part of the DAA strategy.

5.9 Reference is made to the capacity of the forward lounge for US pre-clearance and this being made worse when Pier C is lost. This again begs the question as to why Pier C is being destroyed. We would also question why DUB should fund US pre-clearance in any event as this is simply enabling these passengers to have a reduced loading on immigration and customs facilities at the US airport and hence saving those airports from having to provide and pay for processing capacity. The absence of US pre-clearance facilities in DUB is unlikely to be determining factor in the passengers' choice of flying to/from Ireland, or from using DUB as a transfer point. It will be the desire to fly between the USA and Ireland in the case of point to point demand or the journey time and air fare in the case of the transfer passenger that will be key.

5.10 To reiterate, the alternative suggestion regarding the retention of Pier C involves the building of a 'pier D' style pier to its east. This suggestion retains Pier C, which was built only 7 years ago at a considerable cost. The text on page 54 in Jacobs report incorrectly suggests that this alternative pier can only be in place once Pier C is lost.

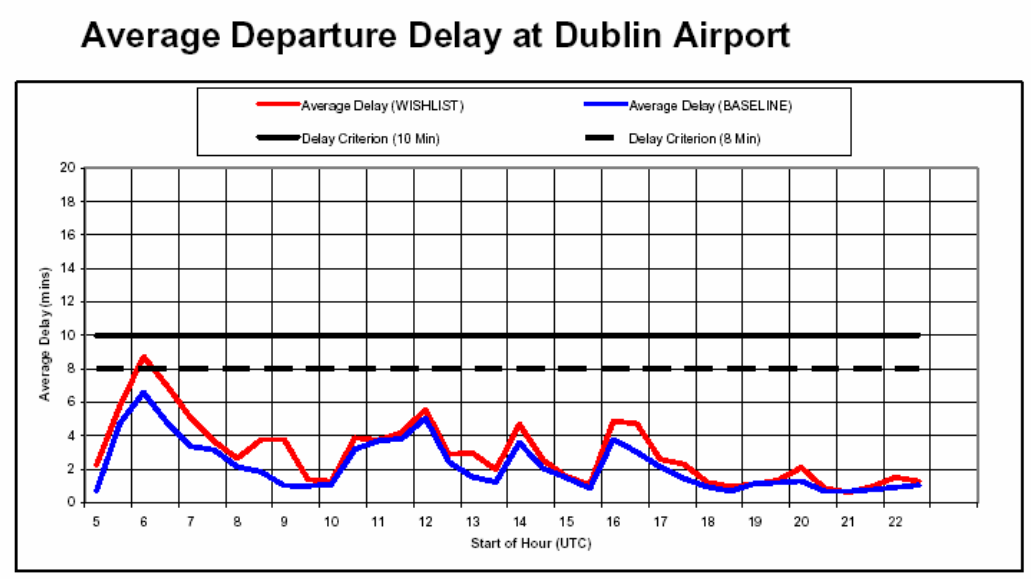
5.11 In the 'conclusions' section of this chapter Jacobs imply that bussing will become a constraint. Please clarify what is meant by a constraint? How much bussing would be

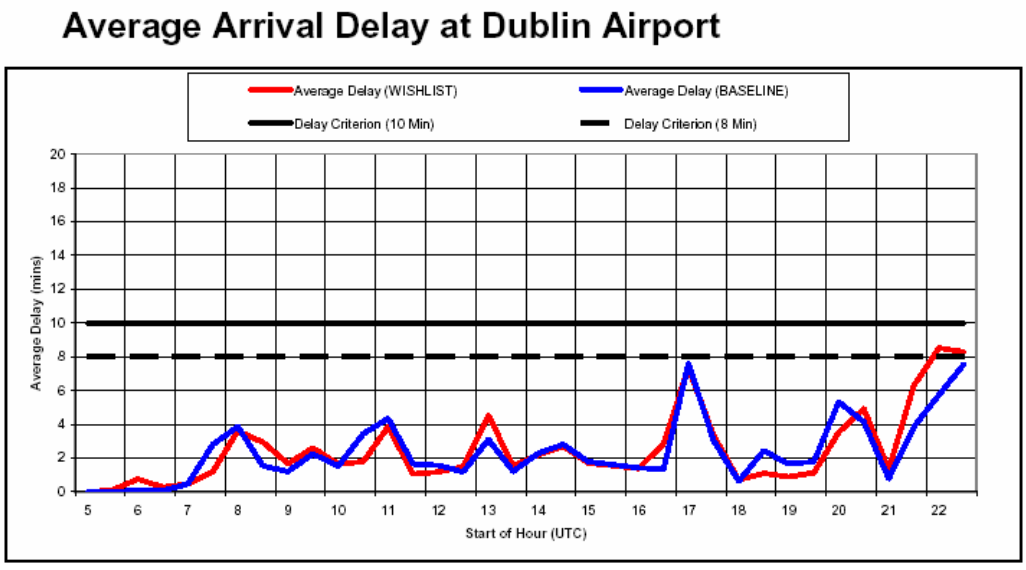
avoided by retention of Pier C and its stands and how much would the costs of bussing be reduced by?

5.12 Will the apparent shortfall in stand supply during the DAA strategy associated with the construction of T2 risk a loss of new growth? If so, will this growth be permanently lost or delayed? How will such losses affect the annual forecast line?

6 Chapter 5

6.1 Jacobs incorrectly report the NATS 2007 runway capacity assessment as being based on a 10 minute delay criterion. It was not. The chart below shows clearly that the 2007 'Wishlist' demand was accommodated within an 8 minute delay criterion, with substantial headroom for future growth in future years using a 10 minute criterion.





6.2 The practice of declaring only the 'Wishlist' demand as capacity, leading to less capacity being available in some hours is also not normal practice. Available capacity should be declared whether there is expected to be demand or not as to do otherwise

could deny competitive entry into Dublin Airport in contravention of the aims of the Regulation.

6.3 Jacobs have used their VisSim tool to replicate the results of the NATS HERMES study stating on page 58 that VisSim is used to test other issues that HERMES does not evaluate. The report then simply focuses on comparing the outputs from both models suggesting that VisSim is producing similar results to HERMES. It does not then suggest what these other issues are that VisSim is testing for, and so it is not clear what the value of this VisSim study is.

6.4 We are unclear as to the track record of the VisSim Software as this is not an industry standard package. Validation to the HERMES output is less meaningful than validation to actual measured runway performance as there is some evidence from elsewhere that HERMES may itself be conservative, i.e., tending to overstate predicted delays compared to actual. Hence, there are doubts about the confidence which can be applied to this modelling work.

6.5 We cannot reconcile the results presented in Table 23 with the outputs from the NATS modelling shown above. It appears that VisSim is substantially overstating delay relative to the NATS work. However, the figures which follow appear to indicate that average delays remain below 10 minutes up to 50 movements per hour (or even greater) under the various sensitivity tests. These results do not support the conclusion that there is a capacity problem. Furthermore, it is difficult to evaluate when the capacity of the runway would be reached in the absence of a simulation of realistic future years' busy day schedules.

6.6 Jacobs question the ability of DUB to introduce reduced separations between runway activity, in particular an arrival following a departure. Yet 'best practice' at Gatwick and Manchester and increasingly at Stansted and even smaller airports such as Birmingham illustrate that these can be introduced safely and successfully, thus significantly increasing capacity.

6.7 Generally DUB should be able to apply HIRO (High Intensity Runway Occupancy) practices to reduce occupancy times, response rates, etc, and so raise available capacity reliably up to the high 40's across several hours of the daily profile.

6.8 Jacobs imply that an improvement of just 2 movements is only a small gain, when in fact 2 movements are substantial. As it is not just the peak hour(s) that benefit but the adjacent hours too and hence there is significant new capacity available across the peak periods.

6.9 We would then disagree that increases over the 2007 Wishlist will automatically lead to unacceptable increases in delays when there is significant scope for ATC improvements, improvements to pilot response times, potential to modify SIDS and STARS as well as provide capacity enhancing infrastructure improvements to the runway.

6.10 A fundamental issue is that no account has been taken by NATS, or it would appear Jacobs, of the tactical use of runway 11/29 to assist in managing peaks of departure demand without increasing average delay. By estimating the capacity of Runway 10/28 in isolation, this does not give a true indication of the available runway capacity at Dublin Airport. The excuse may be that DAA intends to park aircraft on it at peak times but this is unacceptable if runway capacity is potentially a limiting factor. It highlights the lack of creativity in DAA's approach to optimising capacity at Dublin

and the unquestioning approach adopted by Jacobs to assumptions given to them by DAA.

7 Chapter 6: Coordination Status

7.1 Jacobs refer to the risk of airlines lack of willingness to engage with the coordinator as justification for why full scheduled coordination may be required. Airlines are willing to engage. In any event, this in itself is a misleading measure and not of itself a relevant criterion in relation to any change to coordination status as determined by the 2006 Judgement.

7.2 Jacobs go on to make assertions about the implications of schedule adjustments for Summer 2007 and the likelihood of increased delays if airlines operate beyond the 'Wishlist' parameters. This is pure speculation and has no validity in relation to the coordination status of the Airport unless it is proved that there were excess delays.

7.3 Reference is made to the criteria over which flexibility is required by the airlines with respect to the use of contact stands. Stand allocation strategies are the responsibility of the airport authority in consultation with the airlines; it will not and cannot be managed by the schedule coordinator as it sits outside of their competence. Stand allocation issues will not then be managed by a move to full schedule coordination.

7.4 We fundamentally challenge Jacobs view that their role was to assess only the capacity provided in DAA's plans. The role of the capacity assessment is to identify if there are means to overcome capacity constraints such that a change to coordination status can be avoided. Capacity cannot be allowed to be constrained simply by accepting DAA's plans, particularly given that users have complained that DAA is purposely constraining capacity in order to justify unnecessary capex. The failure of Jacobs to consult fully with users and to consider in an open minded manner whether there are solutions to the identified constraints, whether preferred by DAA at this stage or not, is a significant failure of the report which invalidates any conclusions drawn at this stage.

8 Chapter 7: Conclusions and Recommendations

8.1 We have already commented earlier regarding the conclusions and recommendations summarized by Jacobs in this chapter.

8.2 We would add that there is no need to introduce schedule coordination at DUB. We entirely fail to understand how the need for full coordination is being driven by the shortfall in stands when Pier D, which will add a further 14 pier served stands, will come on stream in winter 2007. Furthermore, any claimed stands issues are a direct consequence of a wasteful and expensive strategy by the DAA to introduce a T2 sooner than is required and in such a way that disposes of perfectly sound existing stand and pier capacity and fails to maximize the potential of the current terminal.

8.3 The runway system is already capable of more capacity and a package of measures, operational and procedural, coupled to a cost benefit assessment of the merits of the infrastructure, will ensure that significant new capacity can be realized without the need for full coordination.