



**Decision on Winter 2019 Coordination
Parameters at Dublin Airport**

Commission Paper 2/2019

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Commission for Aviation Regulation

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1. Executive Summary

- 1.1 The Commission for Aviation Regulation, as the authority charged with declaring coordination parameters at coordinated Irish Airports, herein sets out our Decision on the parameters for the Winter 2019 scheduling season at Dublin Airport. This Decision is unchanged from our Draft Decision.
- 1.2 There were a number of demand motivated changes proposed by Dublin Airport with respect to the hourly movement limits on the runway; collectively this set of changes is referred to as the Winter 2019 (W19) Wishlist. Taking the W18 declaration as a baseline, the W19 Wishlist would have added one departure in the 0700 hour, together with Arrivals and Totals rebalancing from the 0800 to the 0900 hours and from the 1100 to the 1200 hours. It would also add one extra Total allowed movement (i.e. arrival or departure) in three hours across the day.
- 1.3 Aer Lingus then proposed two alternative Wishlists, 'Option 1' which contained only the increases set out in Dublin Airport's proposed W19 Wishlist, and 'Option 2' which contained only the rebalancing. By majority vote, the Coordination Committee advised us to implement 'Option 1' as the declared hourly runway capacity.
- 1.4 Relative to the Winter 2018 limits, no changes were proposed for the terminal limits or the referral limits which relate to Terminal 2 Check-in desks, US Preclearance and Terminal 2 morning arrivals. Nor is it proposed to alter the allocation based, hard limit on stands. By majority vote, the Committee then advised us to roll forward the Winter 2018 limits to Winter 2019 in relation to these parameters.
- 1.5 Our Draft Decision was to implement 'Option 1' as the hourly runway capacity, leaving the other parameters unchanged from Winter 2018.
- 1.6 We received 2 responses to the Draft Decision:
 - Aer Lingus supports it in full.
 - Dublin Airport asks us to reconsider the runway limits through implementing Dublin Airport's original proposed W19 Wishlist rather than 'Option 1'. It supports the other aspects of the Draft Decision.
- 1.7 This Decision follows engagement over the past number of months between stakeholders. This includes consultation between the Commission, Helios and industry on the simulation modelling being carried out. In addition, there has been extensive engagement and sharing of information between members of the Coordination Committee in arriving at their advice for the Commission. The Coordination Committee comprises Dublin Airport, the Irish Aviation Authority and airlines operating at Dublin Airport. The Commission attends meetings of the Committee in which the coordination parameters are discussed.
- 1.8 Our airfield simulation consultants, Helios, have assessed the likely effect of implementing each of the above sets of changes, relative to rolling forward the W18 limits, on a busy day in Winter 2019. The assessment demonstrated that implementing any of the proposed options would not cause any significant changes in key airfield metrics such as taxi out times or ground delay. We have also considered modelling work conducted by NATS and ARUP, both for Dublin

Airport, together with other evidence presented by Dublin Airport. We considered all evidence which was presented to us.

- 1.9 We have published the responses from Aer Lingus and Dublin Airport. Alongside the Draft Decision, we published the results from Helios as well as the advice we received from the Coordination Committee.
- 1.10 References to times or hours are in UTC 24 hour format. As this is a winter declaration, UTC matches local time. Where a reference is made to a particular hour, such as the 0500 hour, this refers to a time period of one hour from the stated time. To give an example, the 0500 hour spans from 5 am to 6 am.

2. Background

Legislation

- 2.1 Section 8(1) of the Aviation Regulation Act, 2001, states that the Commission is the competent authority in Ireland for the purposes of Council Regulation (EEC) No. 95/93, as amended by Regulation (EC) No 793/2004 (“the Slot Allocation Regulations”). The Commission is therefore responsible for:
- The designation of the Coordination status of Irish airports.
 - Appointing a qualified schedules facilitator or coordinator, as appropriate, at airports which have been designated as Schedules Facilitated or Coordinated.
 - The declaration of coordination parameters at Coordinated airports, taking into account relevant technical, operational, and environmental constraints.
- 2.2 Dublin Airport is designated as Coordinated by the Commission; Airport Coordination Limited (ACL) is the appointed coordinator. No other airport in Ireland has been designated as either Schedules Facilitated or Coordinated.
- 2.3 Under Regulation No. 95/93, one of the roles of the Coordination Committee is to advise on appropriate coordination parameters.
- 2.4 Article 6(3) of the Slot Allocation Regulations details the required interaction between the Commission and the Coordination Committee:
- “The determination of the parameters and the methodology used as well as any changes thereto shall be discussed in detail within the coordination committee with a view to increasing the capacity and number of slots available for allocation, before a final decision on the parameters for slot allocation is taken. All relevant documents shall be made available on request to interested parties.”*
- 2.5 Subsequent sections of this paper detail how this requirement was met by the Commission.

Winter 2019 Coordination Committee Process

- 2.6 As part of the Winter 2019 process, airlines were asked to submit their wishlist flights to ACL. These submissions were aggregated by ACL, with the aggregation compared to the Winter 2018 capacity to assess where adjustments may be required to facilitate them. This was then used by Dublin Airport when formulating the W19 Wishlist and the W19 flight schedule for modelling.
- 2.7 Taking the W18 declaration as a baseline, the W19 Wishlist would have added one departure in the 0700 hour, together with Arrivals and Totals rebalancing from the 0800 to the 0900 hours and from the 1100 to the 1200 hours. It also proposed to add one extra Total allowed movement (i.e. arrival or departure) in three hours across the day. Aer Lingus then proposed two alternative Wishlists, ‘Option 1’ which contained only the increases set out above, and ‘Option 2’ which contained only the rebalancing.
- 2.8 The Commission previously appointed Helios to build and validate fast time simulation models

of both the airfield and the passenger terminal buildings. In January 2019, Helios consulted with Coordination Committee members to obtain views on capacity constraints and other issues ahead of the declaration process. To help inform our decision on the parameters for Winter 2019, we asked Helios to coordinate a potential flight schedule on a busy day in Winter 19 (“the W19 Schedule”) according to both the proposed Winter 2019 and the current Winter 2018 runway limits, simulate both flight schedules in the airfield model, and compare the results. Draft results were circulated to the Committee on 18 March. Aer Lingus’ requests were then also modelled.

- 2.9 The final set of results was circulated on 28 March, ahead of the Committee meeting on 3 April. Comparisons were provided between simulated taxi times, ground delay and runway holding delay. Helios attended both the pre-meeting and the meeting to present its results and take questions from members.
- 2.10 The W19 Schedule was based on the flight schedule which operated on 30 November 2018. This day was selected as representative of a typical busy day in Winter 2018. Assumptions regarding traffic growth were then made by ACL in conjunction with Dublin Airport, based on airline submissions to ACL where available, and also to allow the modelling to test out the increases being proposed by Dublin Airport.
- 2.11 Dublin Airport circulated various pieces of analysis and modelling results to Committee members ahead of the pre-meeting, namely:
- Simulation modelling carried out for Dublin Airport by NATS in relation to runway holding delay with the proposed W19 runway limits in place.
 - Simulation modelling carried out for Dublin Airport by ARUP which compared the W18 baseline schedule with the W19 schedule.
 - An update on performance during Winter 2018, current/prospective projects to enhance capacity, and projects which may be under construction during Winter 2019.
 - An update from ACL containing an overview of Winter 2018, the Winter 2019 Wishlist, and details in relation to overbidding for Summer 2019.
 - Dublin Airport’s proposed coordination parameters for Winter 2019.
- 2.12 Ahead of the final Meeting, updated versions of these documents were circulated. This included NATS modelling of the alternative scenarios proposed by Aer Lingus.

Coordination Committee Advice on Parameters for Winter 2019

- 2.13 At the Committee meeting on 3 April, votes were cast to finalise the advice to the Commission on coordination parameters for Winter 2019. Voting rights for Committee members are set out in the Coordination Committee Constitution. A set number of votes are allocated to Dublin Airport and the IAA, with the rest shared out among other members present at the meeting based on the number of movements flown at Dublin in the preceding year. Tables 2.1 and 2.2 summarise the voting with regard to the runway limits and other limits respectively.

Table 2.1: Committee votes in favour of Wishlist ‘Option 1’

Member	Number of votes	In Favour	Against	Abstention
Aer Lingus	327	✓		
BA	36	✓		
Cityjet	27	✓		
Dublin Airport	40		✓	
IAA	20		✓	
Lufthansa	32			✓
Ryanair	407		✓	
Stobart	110	✓		
Total	999	500	467	32

Source: Coordination Committee. Variance of +/- 1 is due to rounding.

- 2.14 Based on the voting rights, the advice of the Committee is therefore to implement the ‘Option 1’ Wishlist as the declared runway limits for Winter 2019. Section 3 sets out the full list of amendments under this Wishlist.
- 2.15 Dublin Airport, the IAA, and Ryanair remained supportive of Dublin Airport’s original proposed Winter 2019 Wishlist.
- 2.16 The Committee also voted on the terminal, stand and referral parameters, which Dublin Airport proposed to roll forward from Winter 2018. Votes were cast as follows:

Table 2.2: Committee votes in favour of the proposed terminal, stand, and referral limits

Member	Number of votes	Terminal	Stands	Referrals
Aer Lingus	327	✓	✓	✓
BA	36	✓	✓	✓
Cityjet	27	✓	✓	✓
Dublin Airport	40	✓	✓	✓
IAA	20	✓	✓	✓
Lufthansa	32	-	-	-
Ryanair	407	x	x	x
Stobart	110	✓	✓	✓
In Favour		560	560	560
Opposed		407	407	407
Abstention		32	32	32

Source: Coordination Committee. Variance of +/- 1 is due to rounding.

- 2.17 The advice of the Committee is, therefore, to implement the terminal, stands, and referral parameters as proposed. Ryanair opposed these limits as it believes the terminal limits are too low, although it did not make any specific alternative proposal.
- 2.18 The formalised advice from the Committee is published alongside this paper.

3. Airfield Coordination Parameters

- 3.1 The Commission’s Decision is to amend the runway coordination parameters in accordance with the ‘Option 1’ Wishlist.

Table 3.1: Changes under W19 Wishlist ‘Option 1’

Hour (UTC/Local)	Departures	Arrivals	Totals
0700	+1		+1
1000			+1
1600	+1		
1700			+1

- 3.2 We have retained the stand parameter as a hard constraint.

Helios Airfield Modelling

- 3.3 Using the W19 Schedule, Helios assessed the potential effect on the airfield of a decision to increase the runway limits in line with the various proposals, compared to maintaining the W18 limits. The assessment takes the form of a comparison of taxi-out times, taxi-in times, ground delay for both arriving and departing aircraft, and runway holding delay which relates to departing aircraft only. Results for both rolling forward the Winter 2018 limits and ‘Option 1’ are summarised in Table 3.2; for further details, including results relating to the other scenarios, see the report from Helios published alongside this document.
- 3.4 As well as the new wishlist flights, a number of other flights were added to ensure that the modelling would test out the proposed capacity increases. Thus, on a representative busy day, and in a high growth scenario for Winter 19, Helios summarised the difference between the various potential decisions.
- 3.5 It should be noted that if growth does not materialise to the extent envisaged, the delay related metrics would be lower than those set out by Helios. The modelling assumes Runway 28 only is active; this is the most frequently used runway and thus is used for setting the declared runway capacity. Dual departures operating mode has not been included in Helios’ modelling.
- 3.6 Taxi-out time measures the time elapsed from the aircraft coming off blocks until it crosses the runway stop bar to begin its take-off roll. Taxi-in time is measured from when an arriving aircraft vacates the runway safety area, until it comes on blocks. Ground delay is the accumulation of all delay experienced while taxiing in or out, i.e. all components of taxi time other than unimpeded taxi-time.¹ The difference column in Table 3.2 shows the increase in

¹ These are the metrics as defined by Helios. Some variation may apply in how others define these metrics.

the various metrics from implementing the 'Option 1' Wishlist (whether positive or negative).

Table 3.2: Maintaining the W18 Limits compared to implementing the 'Option 1' Wishlist

Metric (minutes and seconds)	Period	W18 Limits	Option 1	Difference
Taxi-out time	Daily average	15:50	15:08	-00:42
Taxi-out time	Peak	26:18	25:13	-01:05
Taxi-in time	Daily average	06:34	06:33	-00:01
Departure ground delay	Daily average	07:11	06:42	-00:29
Arrival ground delay	Daily average	00:33	00:32	-00:01

Source: Helios

- 3.7 In broad terms, Helios' results indicate that no significant change in the delay metrics would be likely to result from any of the potential options modelled. In fact 'Option 1' shows a marginal improvement relative to the current limits, likely due mainly to one fewer flight in the peak departures hour. Any deterioration in airfield metrics is likely to occur regardless of whether any of these adjustments are made to the limits.

NATS runway modelling

- 3.8 Dublin Airport commissioned NATS to assess the impact of the changes in runway parameters proposed under the W18 Wishlist. It is important to note that the purpose of the NATS assessment is different to the purpose of the airfield modelling carried out by Helios. NATS assesses whether the runway alone is capable of delivering a theoretical schedule, whereby the traffic in each hour fills the proposed runway limits, without breaching a 10-minute runway holding delay criterion. The main difference is that Helios' assessment includes modelling of the runway, taxiways and stands whereas NATS assesses the runway only.
- 3.9 In practice, slots could not be allocated such that the runway limits are completely filled due to the hard constraint on stands.
- 3.10 NATS modelled each of the proposed W18 runway parameter options; the 10-minute delay criterion was not breached under single runway operations on Runway 28, the runway off which we base capacity declarations.

ARUP Modelling

- 3.11 Dublin Airport commissioned ARUP to carry out simulation modelling. The approach is broadly similar to that used by Helios. The assessment drew a comparison between the W18 baseline schedule and the W19 forecast schedule.
- 3.12 This comparison is useful for putting in context the possible differences in the airfield metrics which can be expected due to growth in traffic. However, it is not directly relevant to the decision on the parameters, as most of the estimated increases are the result of traffic growth which could occur regardless of whether the limits were to change from Winter 2018.

On Time Performance (OTP), Scheduling Delay and Taxi-out Times in Winter 2018

- 3.13 In Winter 2018, average taxi-out times have increased by 1-2 minutes across the various piers and apron areas relative to 2017.
- 3.14 Relative to Winter 2017, On Time Performance has decreased by just under 3%. While Airline-Rotation and en-route Air Traffic Control remain the biggest contributors to delay minutes, there has been an increase in delay minutes attributed to Dublin Airport. These delay reasons are self-reported; there are a wide range of factors and stakeholders that impact OTP. Ahead of future seasons we should have more detailed and reliable data from A-CDM to allow consideration of how ground delays may be impacting OTP.

Potential Capacity Enhancements or Diminutions in Winter 2019

- 3.15 There are a number of Programme of Airport Campus Enhancement (PACE) projects, as well as apron rehabilitation works, which may be under construction during W19. Dublin Airport has indicated that these projects are not expected to impact airfield operations and will have only a minimal impact on the availability of stands. The number of stands at Aircraft Park Charlie (APC) will reduce from 13 to 8 due to the North Runway works.
- 3.16 The West Apron stands project is expected to be completed in Q2 2019 and so has been included in the Helios modelling.
- 3.17 Depending on weather conditions, dual runway operations on Runways 28 and 34 are generally possible on some mornings. This allows the first wave of departures to depart more efficiently. It is expected that, during Winter 2019, resurfacing works will be carried out on parts of the crosswind runway. The modelling assumes single runway operations only. However, during the departure peak, the use of RW 34 relieves pressure from RW 28, and this will not be possible during Winter 2019.
- 3.18 Projects are phased around delivering the flight schedule; that is, the first priority is maintaining the operational performance of the flight schedule, with works fitted in around this to the extent possible.
- 3.19 Dublin Airport is expected to be an Airport Collaborative Decision Making (A-CDM) certified airport by Winter 2019, which would lead to improved information sharing among stakeholders. This should translate into improved operational efficiency. The Helios modelling does not take into account any such improvement.

Draft decision – Airfield

- 3.20 Our Draft Decision was to amend the runway coordination parameters in accordance with 'Option 1', as advised by the Coordination Committee. The following points were made in the Draft Decision.
- 3.21 The W19 Wishlist was demand led; the proposed increases were tailored to fit the expected demand for additional movements. It is therefore in the broader interests of all stakeholders for us to implement these limits, provided that they are feasible and that a corresponding flight schedule can be operated without adding significant delay. The modelling demonstrates that little or no operational impact is likely to result from the associated capacity increases.

- 3.22 By majority vote, the Committee advised us not to implement the rebalancing. The wishlist analysis suggests that the rebalancing would lead to parameters better suited to airline plans in the hours in question. However, across each of the pairs of hours where rebalancing was proposed, there is no overall increase. Furthermore, given the infrequency with which these hours are full, especially in winter, it seems unlikely that not implementing the rebalancing would significantly preclude carriers from obtaining slots at or near their preferred times. We are also concerned that the rebalancing reduces capacity in certain hours, which, while not currently used, may be required in the future. Thus, we are proposing to implement 'Option 1', which excludes the rebalancing.
- 3.23 The increases proposed for Winter 2019 are relatively limited, with no further increases in departures in the 0600 hour; this seems a sensible approach given that the crosswind runway will not be available for dual ops during first wave departures, together with the observed increase in taxi-out times since Winter 2017.
- 3.24 Where demand for stands exceeds supply, movements are referred to Dublin Airport for detailed assessment. If the issue cannot be resolved, a slot will not be allocated. The number of stands available at APC will be reduced from 13 to 8 in the declaration.

Submissions on Draft Decision- Airfield

- 3.25 Aer Lingus supports the implementation of 'Option 1'.
- 3.26 Dublin Airport asks us to instead implement its original proposed W19 Wishlist. It provides graphs highlighting that, in a busy week in the current W18 season, there is significant spare capacity in the 0800 and 1100 hours which would allow for rebalancing into the 0900 and 1200 hours. It states that the modelling indicates only minor differences between the W19 Wishlist and 'Option 1'.
- 3.27 Dublin Airport supports maintaining the stand parameter as a hard limit.

Final Decision

- 3.28 We have decided to implement 'Option 1' to the runway limits and maintain the stand parameter as a hard limit.
- 3.29 As set out above, we recognised in the Draft Decision that the modelling indicates no significant change in the delay metrics would be likely to result from any of the potential options modelled. The Coordination Committee, by majority vote, advised us not to implement the rebalancing.
- 3.30 As set out in paragraph 3.22, it seems unlikely that not implementing the rebalancing would significantly preclude carriers from obtaining slots at or near their preferred times. The graphs presented by Dublin Airport support our view; on no day in the W18 busy week presented are the Arrivals or Totals limits reached in the 0900 or 1200 hours. While we recognise that the limits could be reached on busy days during Winter 19, significant capacity is likely to be available in the adjoining hours, particularly given that they will not be reduced through the rebalancing proposed. On this basis, we do not see any reason to make a decision which differs from the Committee advice and has received further support from Aer Lingus.

4. Terminal Parameters

- 4.1 Our Decision is to roll forward the W18 terminal limits and referral parameters. This decision is in line with the advice of the Coordination Committee.

Proposed Parameters – Dublin Airport

Dublin Airport proposed rolling forward the Winter 2018 limits, which are set out in Table 4.1.

Table 4.1: Departure and Arrivals- Rolling Hour Limits

	Winter 2019 Limits	
	Departures Hourly Limits	Arrivals Hourly Limits
Terminal 1	3700	3550
Terminal 2	3700	3050

Hourly limit rolled every 10 minutes.

Proposed Referral Limits – Dublin Airport

- 4.2 If a proposed operation hits a referral limit, it is referred to the airport to attempt to find a workable solution.
- 4.3 The airport proposed retaining the referral parameter for Terminal 2 check-in desks 1-28 (Terminal 2 operators excluding Aer Lingus) – where demand exceeds 28 desks.
- 4.4 It recommended retaining the referral for US Preclearance, which applies to any new flights, or time changes to pre-existing flights, intending to use this facility.

Proposed Parameters – Other parties

- 4.5 No other party, except for Dublin Airport, made concrete proposals on changes to the coordination parameters for terminal buildings. Ryanair believes that the declared terminal capacity is too low but did not provide evidence for this or suggest an alternative declaration.

Dublin Airport Terminal Capacity

- 4.6 The Commission previously published a report from Helios which contained detailed analysis of the overall Passenger Terminal Building (PTB) capacity. In broad terms, it can be concluded from the Helios report that:
- For Terminal 2, the proposed limits are appropriate.
 - For Terminal 1, the processing ability of the facilities would allow for higher limits to be declared, namely 4,600 for departures and 4,100 for arrivals. However, based on simulation of passenger flow through the Pier 1/Pier 2 immigration process, this arrivals limit would result in a significant quality of service issue in the late evening. The issue, which relates to wait times and space per passenger, is currently experienced on certain days; any further increase in passengers through this facility could exacerbate the situation.

- The referral limits relating to US Preclearance and Terminal 2 check-in desks should be maintained.

Load Factors

- 4.7 For the purposes of assessing a slot request against the PTB limits, a load factor of 85% is currently assumed for scheduled flights. There was no proposal to change this during the Committee meetings.

Draft Decision

- 4.8 Our Draft Decision was to follow the advice of the Committee by implementing the terminal limits proposed by Dublin Airport. We are not proposing to increase the Terminal 1 departures limit, given that it remains unlikely to be a constraining factor relative to the runway limits during Winter 2019, and were advised to not do so by the Coordination Committee. A thorough re-assessment of the terminal capacity will be required as the North Runway and/or other capacity projects become operational.
- 4.9 During the peak departure hour with 35 departures, and with the 85% load factor assumption in place, we estimate that the peak rolling hour required terminal capacity would be around 3,000. Thus, no change in this parameter is required for Winter 2019.
- 4.10 We follow the advice of both the Coordination Committee and Helios in maintaining the US Preclearance and Terminal 2 check-in desk referral parameters only.

Submissions Received and Final Decision

- 4.11 Both Aer Lingus and Dublin Airport support the Draft Decision in relation to rolling forward the terminal parameters from W18. Our final Decision is unchanged.

5. Appendix 1: Coordination Parameters at Dublin Airport for IATA Winter 2019 Season

The Commission for Aviation Regulation has declared the following scheduling limits for the Winter 2019 season.

Runway Scheduling Parameters:

Runway Hourly Limits			
Time UTC	Arrivals Limit	Departures Limit	Total Limit
0000	23	23	32
0100	23	23	32
0200	23	23	32
0300	23	23	32
0400	23	23	32
0500	23	25	32
0600	23	35	40
0700	21	31	40
0800	25	23	44
0900	24	25	42
1000	23	24	41
1100	28	26	48
1200	26	28	46
1300	24	27	43
1400	24	24	40
1500	23	27	43
1600	24	26	46
1700	24	27	47
1800	24	26	43
1900	23	24	38
2000	24	24	39
2100	25	23	39
2200	29	23	39
2300	23	23	32
Totals	575	606	942

Maximum number of movements per 10 minute period	
Maximum Total	9
Maximum Arrivals	6*
Maximum Departures	6*
*Exceptions Departures Limit is 7 movements at 0600, 0610, 0620, 0630, 0700, 0710, 0720 UTC. Arrivals Limit is 7 movements at 2150, 2200, 2210 UTC.	

Passenger Terminal Parameters:

	Departures Hourly Limit	Arrivals Hourly Limit
Terminal 1	3,700	3,550
Terminal 2	3,700	3,050

Notes:

- 1) The hourly limit for passengers is rolled every 10 minutes.
- 2) Load factors of 85% and 95% are applied to Scheduled and Charter services respectively.

Stand Parameters:

	GA		Non-Turnaround		Turnaround Stands								All
	LAB	APC	W.A.	Total	5G	P1	P2	P3	P4	S.A	Triangle	Total	Total
Contact						21	10	11	19			61	61
Remote	12	8	21	29	14	2			1	9	5	32	73
All	12	8	21	29	14	23	10	11	20	9	5	93	134

Note: Stands defined based on ICAO Code B and C size.

Area	Constraint
Stands	Where demand for stands exceeds supply based on coordination allocation, flights to be referred to Dublin Airport for detailed assessment.

Referral Parameters:

Area	Flag
T2 Check-in Desks 1-28 (T2 Operators excluding EI)	Demand exceeds 28 desks
US Preclearance	New flights and schedule changes