ATM Network Performance Report

November 2019

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Summary

November Performance

Network Performance in November 2019 was affected by instances of lower capacity operations at Melbourne and Sydney in response to meteorological conditions that resulted in elevated airborne delay. Smoke haze regularly impacted operations in Sydney this month. The combined 75th percentile performance during November for airborne delay across the four major airports (Sydney, Melbourne, Brisbane and Perth) was **4.8** minutes, and the median airborne delay across these airports was **1.3** minutes. These results did not meet the 2019/2020 KPI targets of 3.3 minutes and 0.6 minutes respectively. The median and 75th percentile have increased compared to the same period last year.

The main contributing factors to elevated airborne delay in November include:

- continued taxiway works on rapid exit taxiways F and G at Melbourne Airport,
- worse than (or different to) forecast conditions,
- thunderstorm activity in Sydney and Melbourne,
- smoke haze in Sydney, and
- concentrated demand during peak, or low capacity, periods.

The taxiway works at Melbourne airport are planned to be complete in early 2020. During this time, close monitoring of the airborne delay is being undertaken to ensure appropriate controls are in place to regulate delay. This includes offering revisions to the Ground Delay Program (GDP) through a Collaborative Decision Making (CDM) process with our airline customers. The result of this CDM process can be a greater tolerance for airborne delay by airlines in favour of decreased gate holding, which explains some of the observed increase in airborne delay.

The following terms are used to categorise delay events in this report:

1. **Significant event**: prolonged and moderately elevated airborne delay for the entire day (i.e. 75th percentile greater than 7 minutes across the entire day). In contrast to previous months, not all of these events are included under each of the airport sections. Only those categorised under the "distinctive event" terminology are included.
2. **Notable event**: shorter and more intense periods of elevated airborne delay (i.e. two or more consecutive hours where the 75th percentile was over 10 minutes). These are included so comparisons to previous months can be made, and counts are included in the Arrival Airborne Delay KPI commentary. In contrast to previous months, not all of these events are included under each of the airport sections. Only those categorised under the "distinctive event" terminology are included.
3. **Distinctive event:** noteworthy disruption, generally that was not planned or forecast. Identification of distinctive events is through a qualitative and quantitative assessment during the Daily Post Operational Review call. These events may include a subset of the significant and notable events.

There were thirty three significant and/or notable events in November, six less than in October (fifteen in Sydney, fourteen in Melbourne, three in Brisbane, and one in Perth). Eighteen of these events were 'significant', due to prolonged and moderately elevated airborne delay for the entire day; these events are labelled in **Figure** 1.

There were also eighteen distinctive events in November and these are summarised under each of the airport sections below. There were nine distinctive events in Sydney, seven in Melbourne, and one in each Brisbane and Perth.

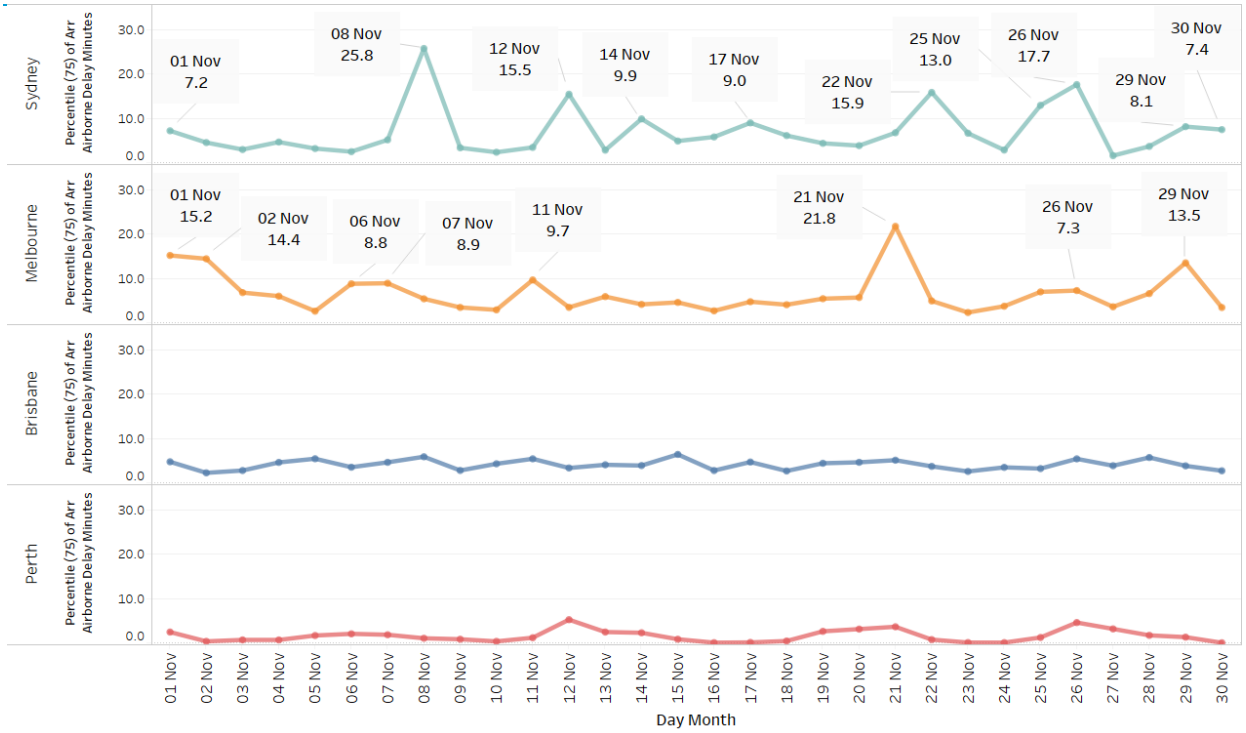

Figure 1: Significant events during November 2019. The marked events indicate the extent of the 75th percentile of airborne delay in minutes across each day.

Network Wide Performance

Airborne delay

The 24-month combined median and 75th percentile airborne delay at the four major airports is indicated in **Figure 2**. The trends are upward for both measures.

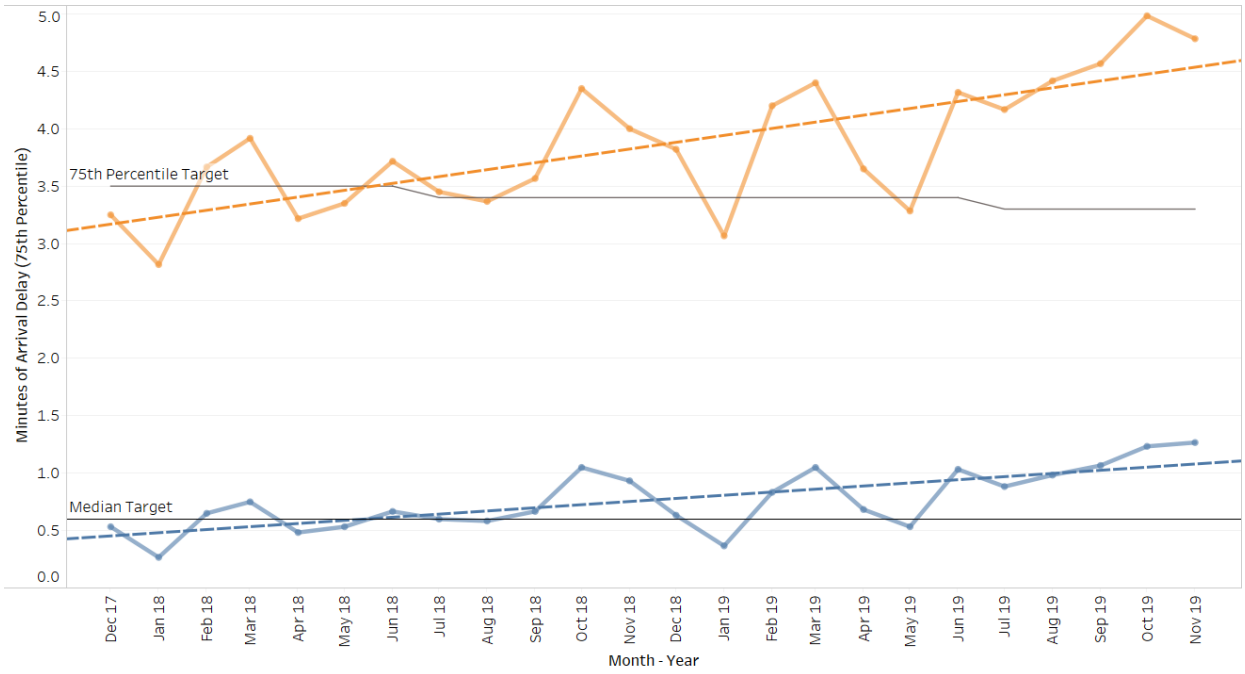

Figure 2: 24-month trend for airborne delay

The long term (48-month) trends of the 75th percentile airborne delay for each of the four major airports are depicted in **Figure 3.** The trends for Sydney and Melbourne are upwards. More detailed analysis for each airport is presented later in this report.

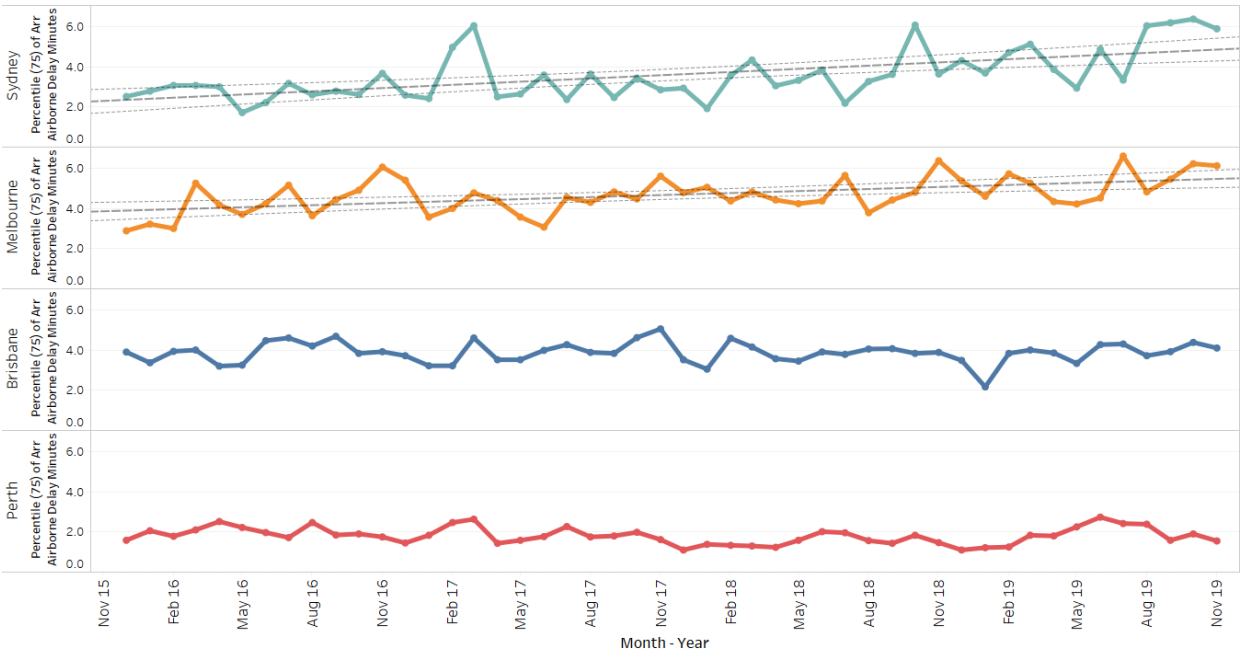

Figure 3: 48-month trend for airborne delay (75th percentile) by airport

Runway configuration

The runway configuration usage for each airport is shown in **Figure 4**.

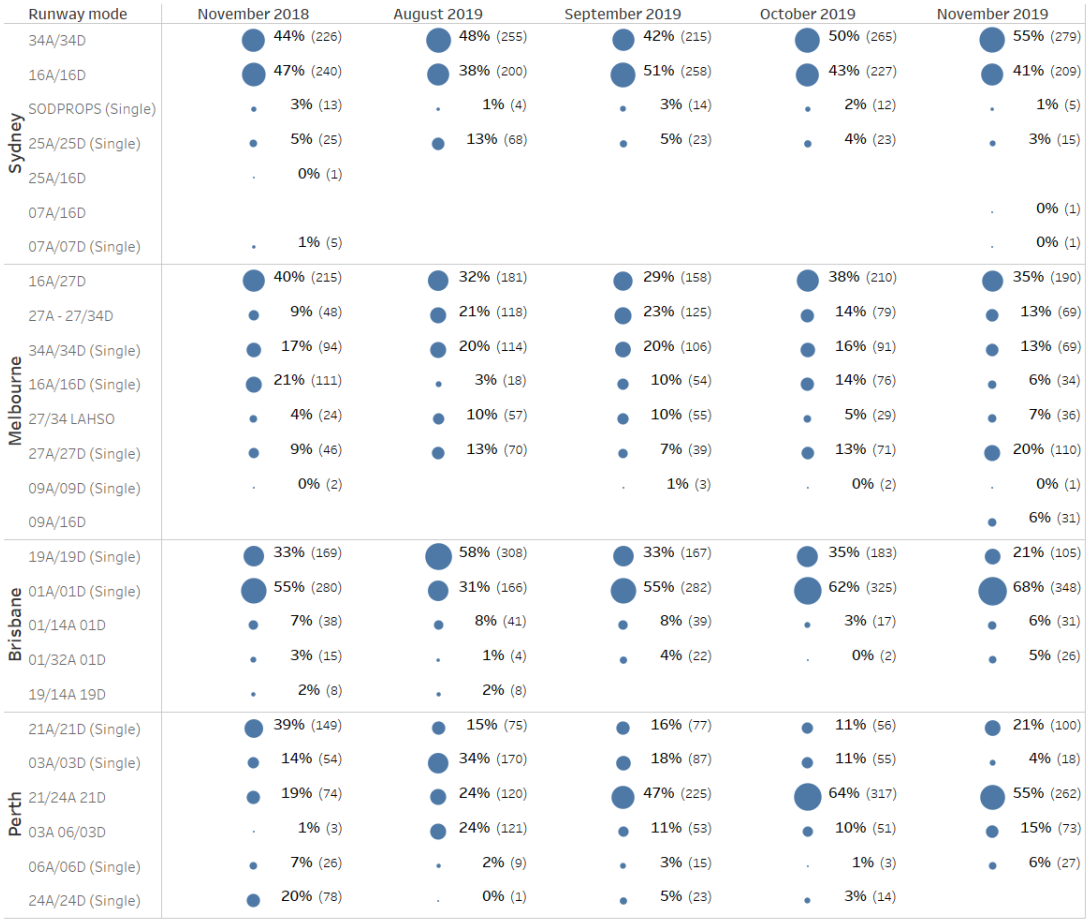

Figure 4: November runway configuration usage (percentage of total and hours in brackets) by airport (Sydney 06-22L, Melbourne 06-23L, Brisbane 06-22L and Perth 06-21L). Single runway configurations indicated in parentheses. Note: Sydney runway mode selection takes into account the Long Term Operating Plan to manage aircraft noise.

In Melbourne the availability of Land and Hold Short Operations (LAHSO) increased by 50% compared to the same month last year (36 hours compared to 24 hours in November 2018). Single runway usage decreased by 15% (214 hours compared to 253 hours in November 2018). The use of Runway 34 for arrivals (single runway 34 and LAHSO operations) decreased by 13% (to 105 hours) compared to October (120 hours).

In Sydney the use of parallel 34 runway operations increased by 23% (279 hours compared to 226 hours in November 2018). Additionally, the use of parallel 16 operations decreased by 13% compared to the same month last year (209 hours compared to 240 hours in November 2018). The overall single runway usage (runway 07/25 and SODPROPS) decreased by 22 hours compared to the same month last year, with the use of single runway 25 decreasing by 10 hours (compared to 25 hours in November 2018) and single runway 07 decreasing by 4 hours (compared to 5 hours in November 2018). Extended use of runway 07 or 25 only is dictated by weather conditions, as opposed to SODPROPS which is generally used in low demand periods for noise sharing purposes.

Brisbane had single runway operations for 88% of the time in November 2018 and 89% of the time in November 2019. Single runway 01 operations increased by 24% compared to the same

month last year (348 hours compared to 280 hours in November 2018). Single runway 19 operations decreased by 38% (105 hours compared to 169 in November 2018). The use of two runways for arrivals in Brisbane decreased by 7% compared to the same month last year (57 hours compared to 61 hours in November 2018). In November 2018 and 2019 the more common configuration was runways 01 and 14 for arrival, with Runway 01 for departure.

Perth was required to use single runway operations for 30% of the time in November 2019. Single runway operations are 53% lower compared to the same month last year (145 hours compared to 307 hours in November 2018). Changes to reporting at Perth now capture weekend operating configurations. This is creating an artefact change to year-on-year differences (November 2018 had 384 hours, compared to November 2019 having 480 hours of recorded runway usage). Typically weekends at Perth have low traffic volumes which favour single runway configurations.

Traffic levels and composition changes

Figure 5 shows traffic levels and composition changes since the beginning of 2017.

Comparing overall traffic levels in November 2019 to November 2018, Sydney (-0.4%) and Melbourne (-0.9%) have decreased, while Brisbane (0.5%) and Perth (0.3%) have increased. Traffic at Brisbane and Perth did not grow as much is it did in recent months. International traffic numbers have decreased in Sydney (-3.9%) and Melbourne (-0.8%), while Brisbane (2.4%) and Perth (3.2%) showed an increase. This is the first month of the calendar year in which international traffic grew at Perth.

In Sydney the domestic traffic comparison between months in 2018 and 2019 fluctuates; and November 2019 is slightly up on November 2018. The general increase of international traffic in 2018 has levelled off in 2019. Traffic in Melbourne for 2019 is fairly steady compared to the previous year, with the strong growth of international traffic in 2018 no longer seen. In 2018 Brisbane traffic generally showed a decrease compared to the same month in the previous year, but with growth in international traffic. For 2019 traffic is increasing, driven by domestic traffic, as international growth has slowed. Perth traffic levels were relatively stable in 2018, while 2019 has shown overall growth driven by domestic traffic (with a drop in the international component).

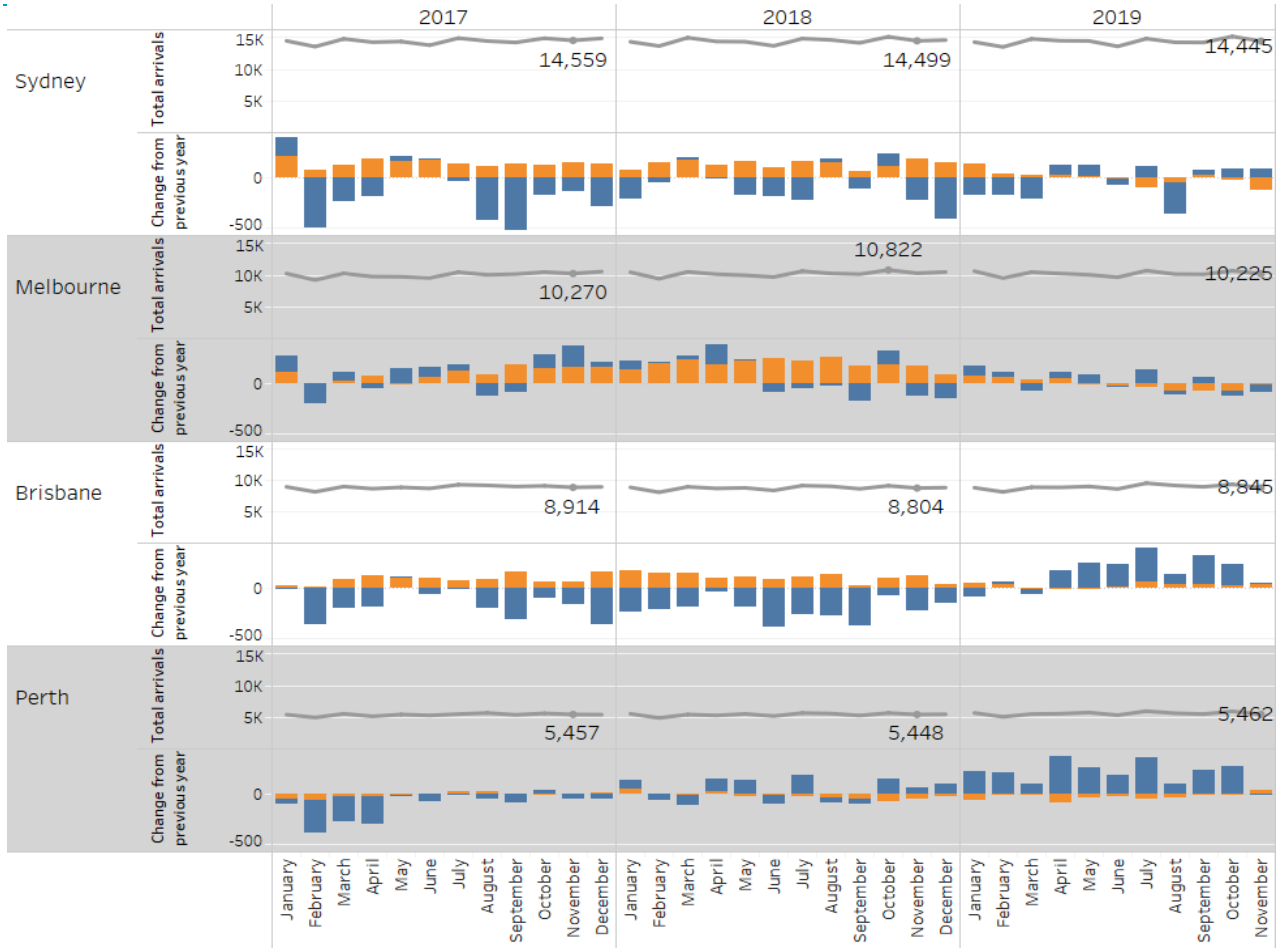

Figure 5: Traffic levels and composition change since January 2017. Grey lines show overall traffic numbers (annotated figures compare current month to same month one and two years earlier). Coloured bars show change in traffic compared to the same month the previous year for domestic (blue) and international (orange) flights.

Demand and capacity

Figure 6 shows estimates of the number of hours each month where scheduled demand is significantly above capacity (hours where demand is three or more flights higher than the METCDM rate) for each of the four major airports. The 24-month trend for excess demand is upward in Perth. **Figure 7** shows the day of week and local hour of day when demand exceeded capacity most often. The displayed hours are 07, 08, 16, 17 and 18. Sydney shows excess demand in each of these hours, Melbourne is more noticeable in 07 and 17, and Brisbane in 07, 16 and 18.

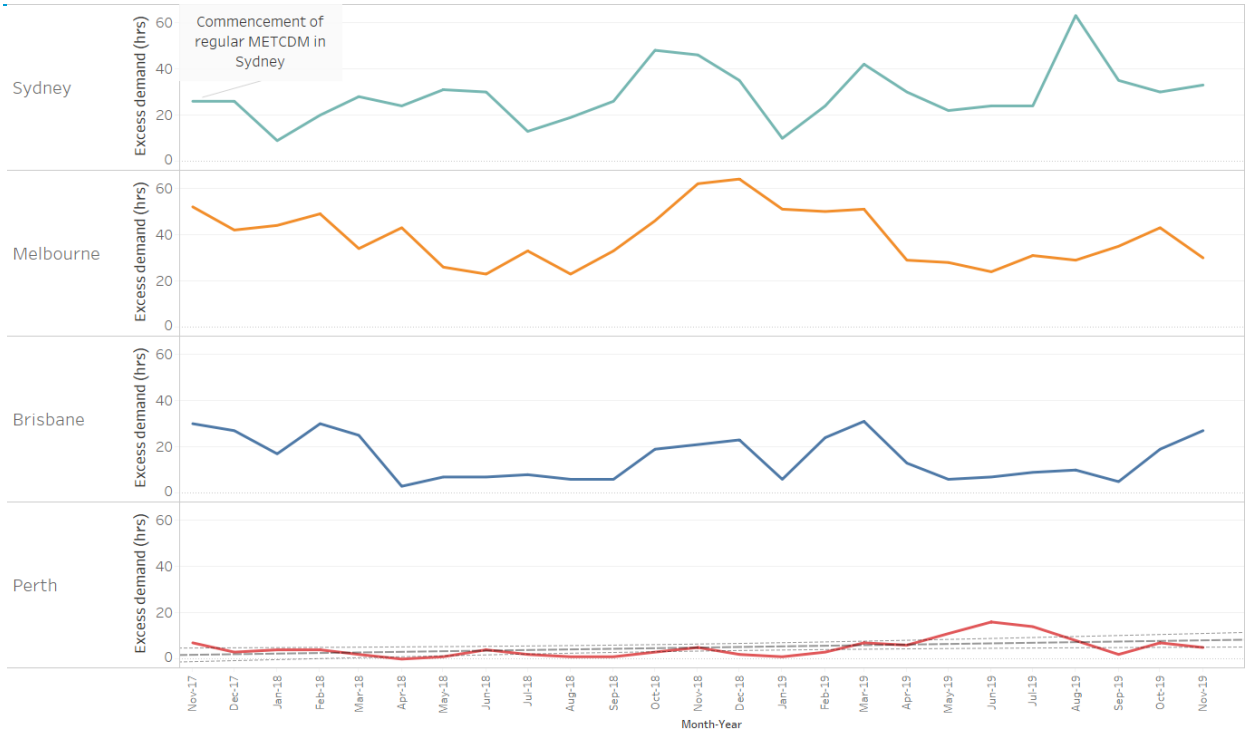

Figure 6: Excess demand estimates. Lines indicate the number of hours where estimated demand exceeds the METCDM rate for that hour by three or more flights. Demand is estimated using Harmony Base Estimated Landing Time.

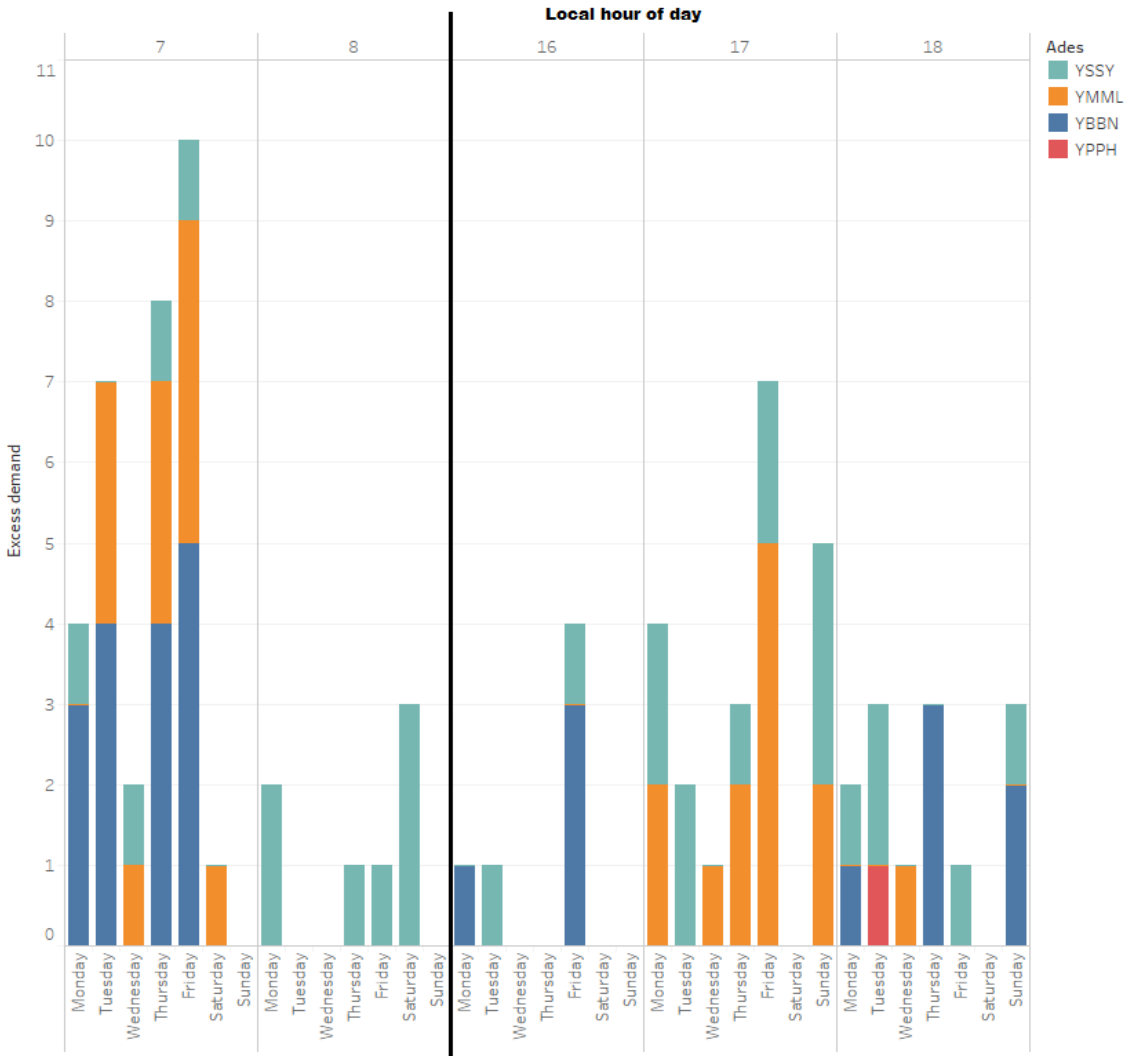

Figure 7: Excess demand estimates by day of the week (bottom axis) and local hour of day when scheduled demand is most likely to exceed capacity (top axis) in November. The count is incremented for a bar when the estimated demand exceeds the METCDM rate for that hour and day of week by three or more flights. Demand is estimated using Harmony Base Estimated Landing Time. Colours on the stacked bars are indicated by airport in the legend (ICAO airport codes – YSSY: Sydney, YMML: Melbourne, YBBN: Brisbane, YPPH: Perth).
Note: There are five of each Fridays and Saturdays during the month, with all other days of the week occurring four times.

Sydney

Airborne delay

The 75th percentile performance figures for airborne delay at Sydney are indicated in **Figure 8.** November performance for the median (1.6 minutes) and the 75th percentile (5.9 minutes) did not meet the targets (0.6 minutes and 3.3 minutes respectively). Compared to the same month last year, there was an increase in the airborne delay median performance (from 0.7 minutes) and in 75th percentile performance (from 3.6 minutes).

The long-term (48-month) and 24-month trends for airborne delay at Sydney are upwards.

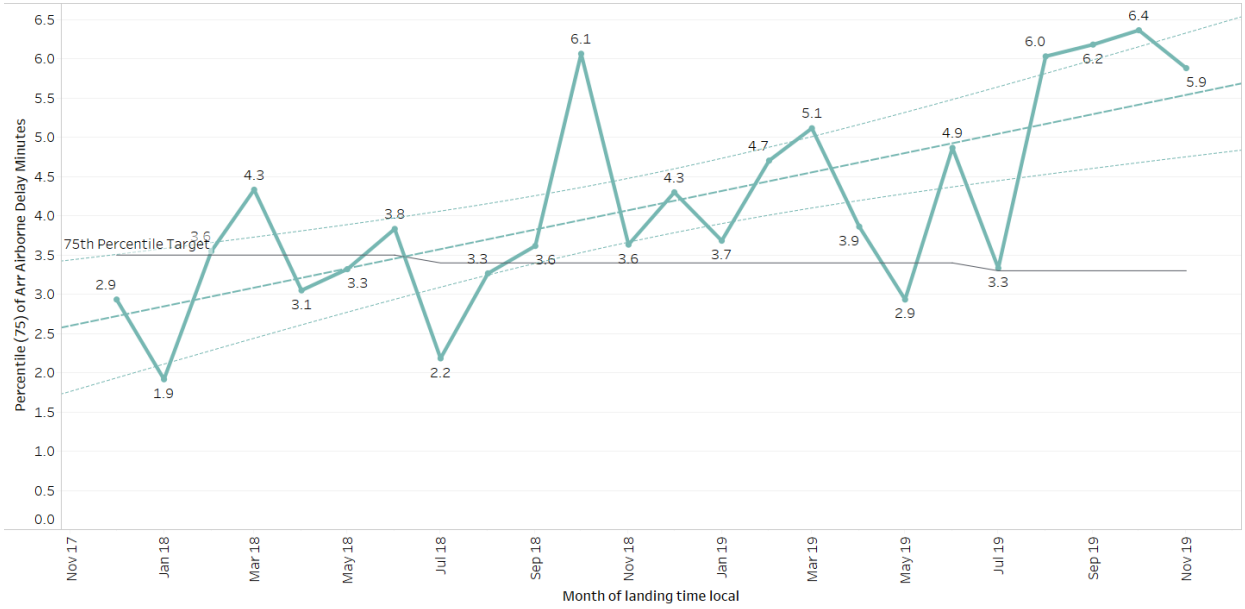

Figure 8: Sydney airborne delay 75th percentile (last 24 months)

Distinctive events

Table 1 describes the distinctive events during November in Sydney.

Day	Event Category	Delay (minutes – 75th percentile)	Event Descriptions (*Contributing causes to increased delays*)
1 November	Significant	7.2	Tactical rates were reduced from planned due to smoke haze that reduced visibility.
8 November	Significant	25.8	Afternoon: Switched to single runway mode early due to debris on runway. In addition, there was a concentration of demand due to non-compliant flights.
12 November	Significant	15.5	Afternoon: Uncertainty around time of change to single runway mode. Go-arounds due to windshear. In addition, there was a concentration of demand due to off-schedule internationals and non-compliant flights.
14 November	Significant	11.1	Morning: Off-schedule internationals. Afternoon: Tactical rates were reduced from planned due to smoke haze that reduced visibility.
16 November	-	5.8	Morning: Eurocat operating in degraded mode resulted in airborne delay and diversions.

22 November	Significant	15.9	Morning: Off-schedule internationals and non-compliant flights. Tactical rates were reduced from planned due to smoke haze that reduced visibility. Afternoon: Thunderstorm activity resulted in a ground stop. Tactical rates were reduced from planned due to smoke haze that reduced visibility and a medical flight operation.
25 November	Significant	13.0	Afternoon: Thunderstorm impacted airport with a level 2 revision run at 1730 local. Multiple go-arounds with a ground stop at 1834 local. This caused flight cancellations and curfew dispensations.
26 November	Significant	17.7	Morning: Tactical rates were reduced from planned due to smoke haze that reduced visibility with strong winds deteriorating conditions further. Thunderstorms began to affect the airport region causing weather diversions. Rapid exit taxiway blocked by disabled aircraft. Afternoon: Extended period of single runway operations following thunderstorm activity, with strong winds and a rescue flight. Approximately 30 cancelled flights.
29 November	Significant	8.1	Afternoon: Tactical rates were reduced from planned due to smoke haze and low cloud that reduced visibility. In addition, windshear caused go-arounds, and there was a concentration of demand due to non-compliant flights.

Table 1: Distinctive event descriptions for Sydney.

CTOT variations

Variations from CTOT at Sydney from 0600-2300 local are the focus of this section due to non-compliance being evident at almost any time of day at some point during the month. **Table 2** provides the flights within this period that departed either early or late with respect to their CTOTs (-5 to +15 minutes). Flights that appear at least twice early or five times late have been included. This facilitates collaboration to identify patterns and causes of delay.

The CTOT against the ATOT (actual take off time) measure is used as a proxy until the COBT (calculated off blocks time) against AOBT (actual off blocks time) can be routinely reported on.

CTOT Variation	ACID	ADEP	Local - ALDT HOUR	
Early	QLK220D	Wagga	7	3
	JST750	Launceston	22	2
	N922JW	YSBK	8	2
	PE421	YMDG	9	2
	QLK41D	Dubbo	10	2
	QLK161D	YPMQ	7	2
	QLK181	YMOR	10	2
	QLK206D	Albury	11	2
	QLK261	YLHI	16	2
	QLK408	YBDG	8	2
	RXA114	YMRY	8	2
	RXA134	YMRY	17	2
	RXA167	YORG	10	2
	RXA456	YNAR	8	2
	RXA464	YNAR	12	2
	RXA472	Griffith	19	2
	VOZ1148	YSTW	7	2
Late	JST514	Melbourne	17	8
	QFA400	Melbourne	7	8
	JST510	Melbourne	12	6
	JST785	YBSU	13	6
	QFA424	Melbourne	12	6
	TGG218	Melbourne	11	6
	VOZ827	Melbourne	10	6
	VOZ853	Melbourne	16	6
	VOZ932	Brisbane	11	6
	QFA420	Melbourne	11	5
	QFA434	Melbourne	14	5
	QFA517	Brisbane	11	5
	TGG369	Brisbane	14	5
	VOZ811	Melbourne	8	5

Table 2: CTOT variation for Sydney arrivals 0600-2300 local – November 2019. Number of occasions that each flight departed early or late with respect to its CTOT (-5 to +15 minutes).

Melbourne

Airborne delay

The 75th percentile performance figures for airborne delay at Melbourne are indicated in **Figure 9.** November performance for the median (2.1 minutes) and the 75th percentile (6.1 minutes) did not meet the targets. Compared to the same month last year, the median remained unchanged, and there was a decrease in the 75th percentile (from 6.4 minutes)

The long-term (48-month) and 24-month trends for airborne delay at Melbourne are upwards.

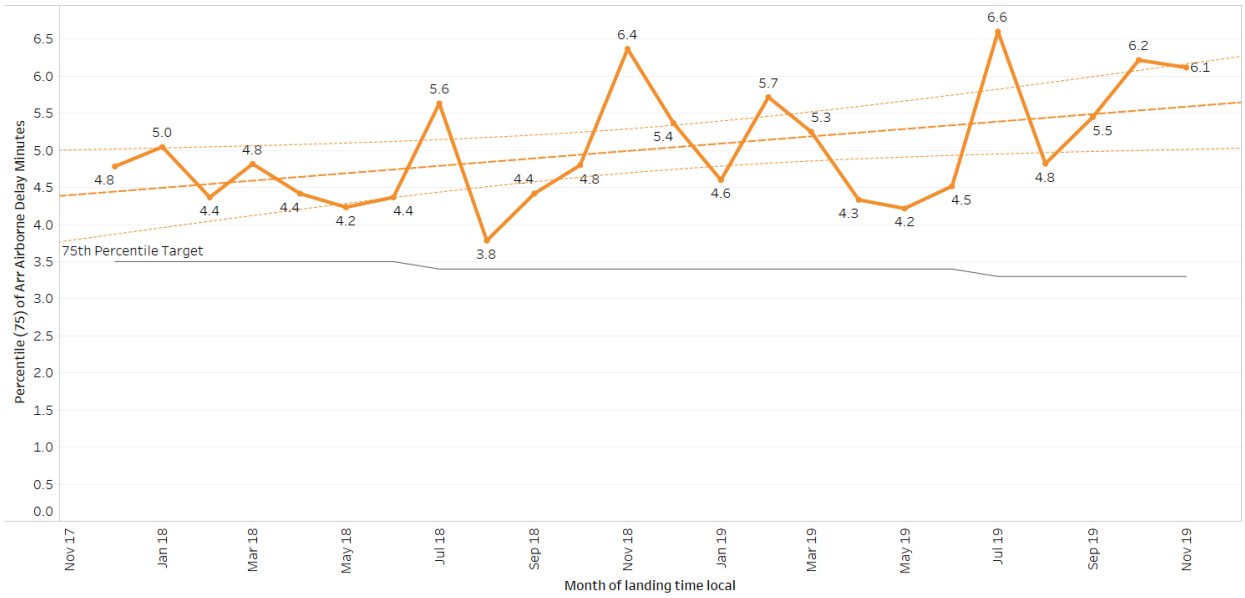

Figure 9: Melbourne airborne delay 75th percentile (last 24 months)

Distinctive events

Table 3 describes the distinctive events during November in Melbourne.

Any events marked with an asterisk (*) in the table indicates that the arrival rate reduction required for the Rapid Exit Taxiway F works was a contributing factor to the delay event. Collaborative decision making with our airline customers about the impact of these works on network performance has resulted in an increased tolerance for Airborne Delay for arrivals into Melbourne rather taking higher levels of ground holding. The works are anticipated to be completed in early 2020 with a break over the Christmas period to avoid disruption during the busy holiday period. Co-ordination group meetings with airlines and airports decided to monitor the situation each month to determine if any further controlling actions are required to manage delay.

Day	Event Category	Delay (minutes – 75th percentile)	Event Descriptions (*Contributing causes to increased delays*)
1 November	Significant	15.2 *	Morning: Extended period of single runway operations. In addition, there was a concentration of demand due to off-schedule internationals and non-compliant flights. Afternoon: Extended period of single runway operations. In addition, there was a concentration of demand due to off-schedule internationals and non-compliant flights.
2 November	Significant	14.4 *	Morning: Tactical rates were reduced from planned due to thunderstorm activity and heavy showers. Extended period of single runway operations with un-forecast use of runway 34. Afternoon: Extended period of single runway operations with un-forecast use of runway 34. In addition, there was a concentration of demand due to non-compliant flights.
3 November	Notable	6.8	Morning: Fog, un-forecast use of Runway 16 for arrivals (planned Runway 34).
6 November	Significant	8.8 *	Afternoon: Extended period of single runway operations with Taxiway E unavailable in addition to Taxiway F. A level 1 revision was conducted at 1400 local to reduce the rates.
11 November	Significant	9.7 *	Morning: Concentration of demand due to non-compliant flights. In addition, there was a concentration of demand due to off-schedule internationals.
25 November	Notable	7.0 *	Afternoon: Extended period of single runway operations with un-forecast use of runway 34. In addition, there was a concentration of demand due to non-compliant flights.
29 November	Significant	13.5 *	Morning: Single runway arrivals with forecast low cloud reducing rates. In addition, there was a concentration of demand due to off-schedule internationals and non-compliant flights with strong winds impacting the airport. Afternoon: Extended period of single runway operations which occurred earlier than expected reducing rates for several hours. In addition, there was a concentration of demand due to non-compliant flights with showers impacting the airport.

Table 3: Distinctive event descriptions for Melbourne.

CTOT variations

Variations from CTOT at Melbourne from 0600-2300 local are the focus of this section due to non-compliance being evident at almost any time of day at some point during the month. **Table 4** provides the flights within this period that departed either early or late with respect to their CTOTs (-5 to +15 minutes). Flights that appear at least twice early or five times late have been included. This facilitates collaboration to identify patterns and causes of delay.

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CTOT Variation	ACID	ADEP	Local - ALDT HOUR	
Early	RXA3772	Mount Gambier	18	5
	QLK58D	Devonport	18	4
	RXA3685	Mildura	19	4
	QLK50D	Devonport	7	3
	QLK77D	Mildura	7	3
	RXA3562	YWYY	15	3
	RXA3657	Mildura	11	3
	JST708	Hobart	16	2
	JST740	Launceston	19	2
	QLK54D	Devonport	14	2
	QLK77D	Mildura	8	2
	QLK280D	Launceston	7	2
	QLK282D	Launceston	10	2
	QLK284D	Launceston	14	2
	QLK286D	Launceston	18	2
	RXA3558	YWYY	12	2
	RXA3772	Mount Gambier	19	2
	VOZ284	Canberra	20	2
Late	QFA839	Darwin	17	11
	JST515	Sydney	15	10
	QFA439	Sydney	15	9
	JST437	Gold Coast	15	8
	JST517	Sydney	15	8
	QFA415	Sydney	9	8
	QFA437	Sydney	15	8
	JST519	Sydney	20	7
	JST523	Sydney	20	7
	QFA417	Sydney	10	7
	QFA421	Sydney	11	7
	TGG243	Sydney	14	7
	VOZ858	Sydney	17	7
	VOZ878	Sydney	20	7
	JST471	Williamtown	20	6
	JST509	Sydney	12	6
	JST567	Brisbane	23	6
	QFA425	Sydney	12	6
	QFA435	Sydney	14	6
	QFA447	Sydney	17	6
	QFA479	Sydney	20	6
	TGG565	Gold Coast	17	6
	VOZ332	Brisbane	17	6
	VOZ866	Sydney	19	6
	VOZ868	Sydney	19	6
	VOZ886	Sydney	21	6
	VOZ1375	Launceston	18	6

JST531	Sydney	18	■	5
JST563	Brisbane	12	■	5
JST708	Hobart	14	■	5
QFA431	Sydney	13	■	5
QFA441	Sydney	16	■	5
QFA445	Sydney	17	■	5
QFA459	Sydney	19	■	5
		20	■	5
QFA465	Sydney	21	■	5
QFA467	Sydney	21	■	5
QFA473	Sydney	17	■	5
QFA613	Brisbane	12	■	5
QFA617	Brisbane	14	■	5
QFA881	Gold Coast	15	■	5
TGG221	Sydney	10	■	5
TGG239	Sydney	13	■	5
TGG243	Sydney	15	■	5
TGG517	Brisbane	12	■	5
TGG703	YCFS	15	■	5
VOZ322	Brisbane	13	■	5
VOZ738	Gold Coast	15	■	5
VOZ816	Sydney	9	■	5
VOZ824	Sydney	10	■	5
VOZ838	Sydney	13	■	5
VOZ854	Sydney	17	■	5
VOZ870	Sydney	19	■	5
VOZ888	Sydney	22	■	5
VOZ1325	Hobart	14	■	5

Table 4: CTOT variation for Melbourne arrivals 0600-2300 local – November 2019. Number of occasions that each flight departed early or late with respect to its CTOT (-5 to +15 minutes).

Brisbane

Airborne delay

The 75th percentile performance figures for airborne delay at Brisbane are indicated in **Figure 10**. November performance did not meet the target for the median (1.3 minutes) or the 75th percentile (4.1 minutes). Compared to the same month last year, there was an increase in the airborne delay median performance (from 1.2 minutes) and the 75th percentile (from 3.9 minutes).

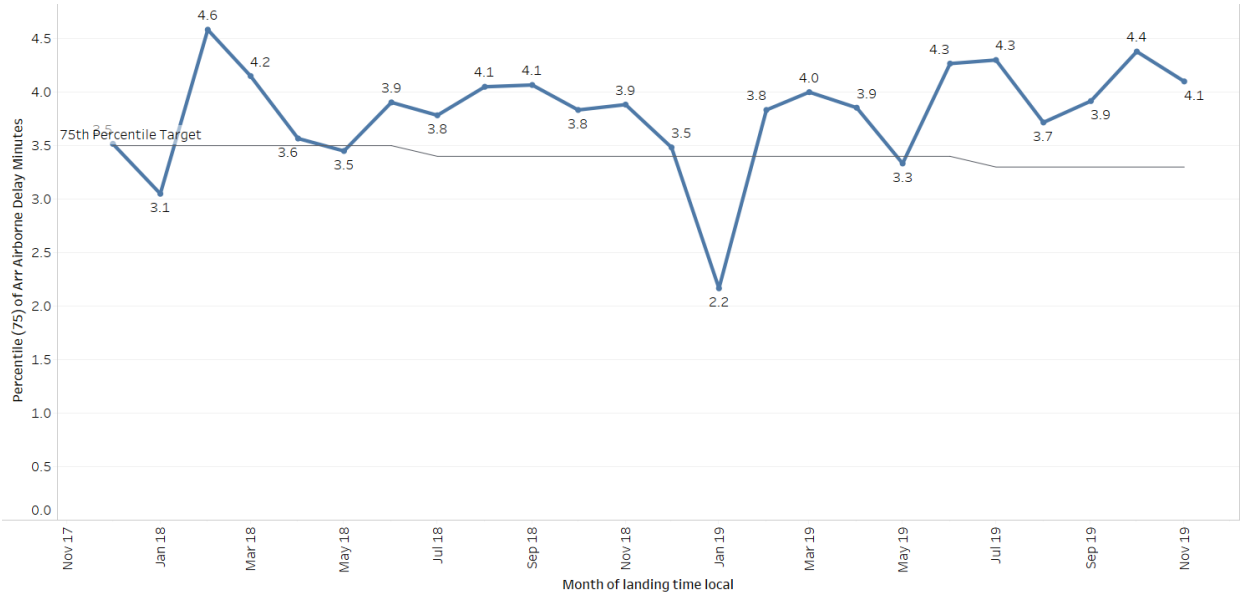

Figure 10: Brisbane airborne delay 75th percentile (last 24 months)

Distinctive events

Table 5 describes the distinctive events during November in Brisbane.

Day	Event Category	Delay (minutes – 75th percentile)	Event Descriptions (*Contributing causes to increased delays*)
14 November	-	3.9	Morning: Aircraft disabled on runway at 0804 local caused 2 go-arounds and a temporary suspense of arrivals.

Table 5: Distinctive event descriptions for Brisbane.

CTOT variations

Variations from CTOT at Brisbane from 0600-2300 local are the focus of this section due to non-compliance being evident at almost any time of day at some point during the month. **Table 6** provides the flights within this period that departed either early or late with respect to their CTOTs (-5 to +15 minutes). Flights that appear at least twice early or five times late have been included. This facilitates collaboration to identify patterns and causes of delay.

The CTOT against the ATOT (actual take off time) measure is used as a proxy until the COBT (calculated off blocks time) against AOBT (actual off blocks time) can be routinely reported on.

CTOT Variation	ACID	ADEP	Local - ALDT HOUR	
Early	SKP738	YCCA	17	4
	HT724	Moranbah	18	3
	QLK465D	Moranbah	18	3
	TFX5	YBTL	20	3
	TFX161	Mackay	21	3
	VEM	YBSU	15	3
	KAK	Maryborough	19	2
	QLK349D	Rockhampton	8	2
	QLK453D	Moranbah	9	2
	QLK461D	Moranbah	16	2
	QLK761D	Moranbah	19	2
	SKP752	YMLS	9	2
	SKP754	YMLS	17	2
Late	VOZ341	Melbourne	18	9
	JST566	Melbourne	19	8
	QFA628	Melbourne	18	8
	VOZ1225	Canberra	18	7
	VOZ1248	Rockhampton	18	7
	JST820	Sydney	19	6
	QFA634	Melbourne	20	6
	QFA825	Darwin	17	6
	TGG522	Melbourne	11	6
	VOZ353	Melbourne	21	6
	VOZ931	Sydney	10	6
	VOZ965	Sydney	17	6
	JST812	Sydney	10	5
	QFA540	Sydney	17	5
	QFA542	Sydney	18	5
	QFA636	Melbourne	21	5
	TGG534	Melbourne	18	5
	VOZ337	Melbourne	17	5
	VOZ347	Melbourne	19	5
	VOZ454	Darwin	18	5

Table 6: CTOT variation for Brisbane arrivals 0600-2300 local – November 2019. Number of occasions that each flight departed early or late with respect to its CTOT (-5 to +15 minutes).

Perth

Airborne delay

The 75th percentile performance figures for airborne delay at Perth are indicated in **Figure 11**. November performance for the median (-0.4 minutes) and the 75th percentile (1.6 minutes) met the targets. Compared to the same month last year, there was a decrease in the airborne delay median performance (from -0.3 minutes) and an increase in 75th percentile performance (from 1.5 minutes).

The 24-month trend for airborne delay at Perth is upwards.

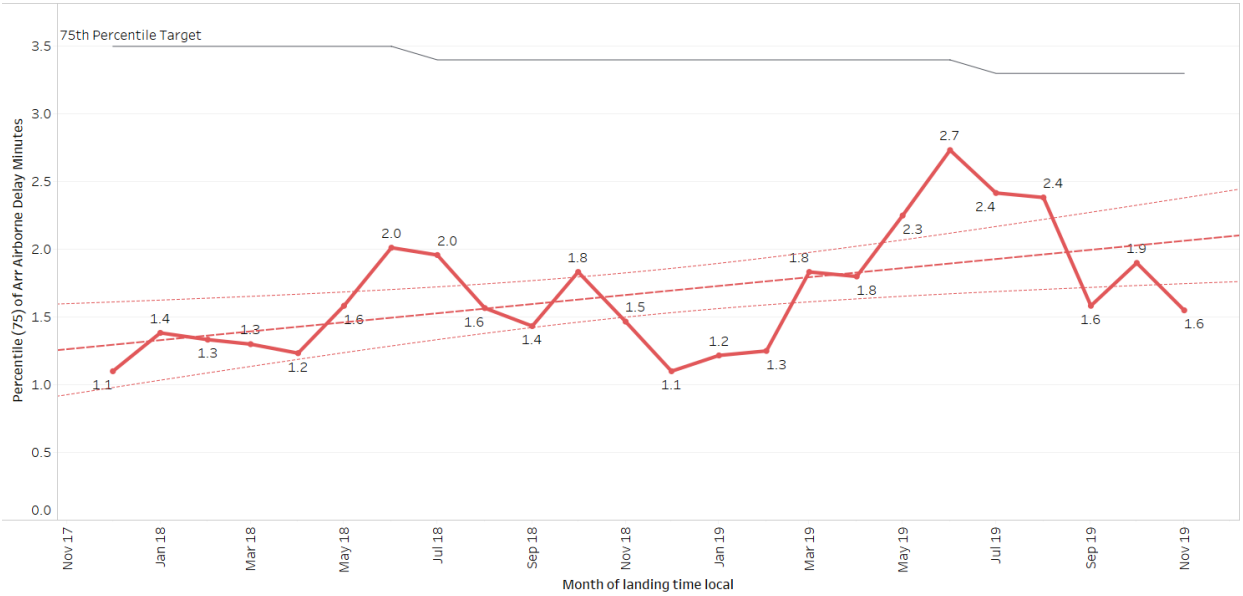

Figure 11: Perth airborne delay 75th percentile (last 24 months)

Distinctive events

Table 7 describes the distinctive events during November in Perth.

Day	Event Category	Delay (minutes – 75th percentile)	Event Descriptions (*Contributing causes to increased delays*)
27 November	-	3.1	Afternoon: Harmony outage from 1510 until 1821 local resulted in flights unable to adjust off-block time information leading to a concentration of demand due to non-compliant flights.

Table 7: Distinctive event descriptions for Perth.

Appendix A

Corporate Plan Key Performance Indicator Profile: Arrival airborne delay

Corporate Plan Description:

The median (and 75th percentile) excess time incurred during the arrival airborne phase of flight in reference to the estimated time of arrival for high-volume operations. (High volume operating environments defined as Brisbane, Melbourne, Perth and Sydney).

Corporate Plan Targets:

Year	18/19	19/20	20/21	21/22
75%	3.4	3.3	3.2	3.1
Median	0.6	0.6	0.6	0.6

What is it: Excess time incurred during the arrival phase of flight.

What is measured: It is measured by comparing the estimated flight time and actual flight time for the portion of the flight within 250 NM of the destination aerodrome.

Why 250NM: The 250NM threshold has been identified as the distance from the aerodrome at which tactical arrival demand/capacity balancing measures start taking effect. It is a true reflection of the tactical arrival management of the flight, and is not skewed by other non-related issues such as congestion at the departure aerodrome.

Why measure Median rather than Average/Mean: In some cases, the actual flight time within 250NM of the destination aerodrome will be less than the estimated flight time (e.g.: ATC has provide track shortening). In the dataset, this translates into a 'negative' value for that particular flight.

The Median shows the mid-point of the data set and allows us to demonstrate our impact on all flights, not just the ones that were delayed. Additionally, over short timeframes and small datasets (such as a daily report), Median measurement is more resilient to data errors and small groups of outliers which may skew the average.

Why measure the 75th percentile: This supplements the Median and is valuable to demonstrate how effectively we have managed the arrival of most of the fleet.

The last 25th percentile can typically contain arrival data from flights that were impacted by non-routine events, such as Medical priority traffic or aircraft in an emergency or diversion.

How do we measure:

Uses the high-fidelity Dalí aircraft trajectory model. For Sydney, some assumptions are built in to calculations as the actual flight path is unique for each flight (open STARs).