



Australian Government
Bureau of Meteorology

Australian ATFM Meteorological Information

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Australian Government
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Topics

- ATFM
- MET CDM
- Case study
- Impacts of COVID-19



ATFM Overview

- GDP since 2012
- Pre-tactical ATFM
- Evening prior to operations
- Strong CDM culture
- Including prior evening capacity declarations
- Referred to as MET-CDM
- MET-CDM participants
 - BoM Mets imbedded within Airservices Network Coordination Centre (NCC)
 - Airline Mets
 - ATFM personnel within NCC
 - Approach controllers

How we plan for the weather for ATFM

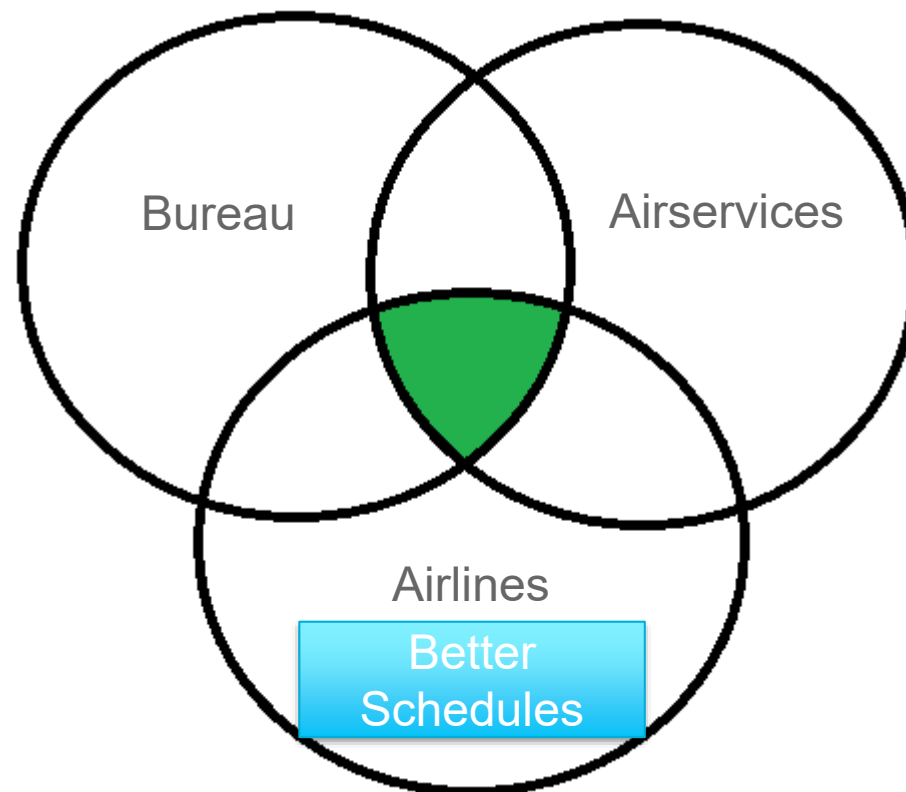
- MET- CDM → Meteorological Collaborative Decision Making
- Collaborative weather decisions made with Bureau Forecasters and Airline Meteorologist
- ATFM collaborative decisions made with ATFM collaborative decisions made with operational ATC and Network Coordination Centre staff.
- Final Airport Arrival Rate (AAR) fed into Harmony and into the Ground Delay Program
- Prior to MetCDM rate AAR's are performed through TAF

MET CDM

Understanding each others business

NCC MET
dedicated to
ATFM

Flexible and
adapting
products to
solve the
problem



Fully
transparent
process

AVMET units
collaborate

Transparency
and better
certainty



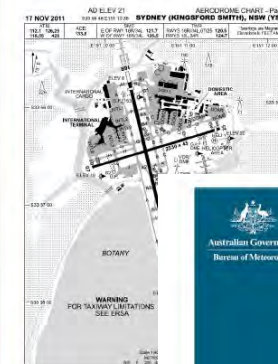
Reference Cards

- Process requires people with combined expertise in meteorology and ATFM.
- Reference cards developed to date reflect the known parameters that affect traffic flows at the airports.
- They are a reflection of documentation and discussions with Airservices traffic management.
- Cards managed jointly.
- NCC MET and AV MET Units need to know the cards.



YSSY Air Traffic Operations

Sydney is the busiest international airport in Australia consisting of two moderately spaced parallel runways in the direction 16/34 magnetic, and a single cross runway of 07/25 magnetic.



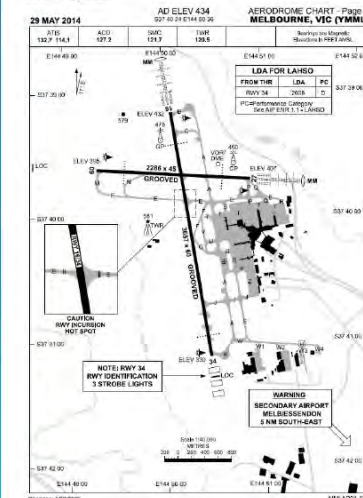
Curfew
Curfew regulates aircraft taking off and landing between the hours of 11p and 6am. A limited number of scheduled approved take-offs and landings are permitted respectively in the 'show periods' of 11pm to midnight and 6am, by Section 12 of the Sydney Curfew Act 1995.

Aircraft Arrival Rates (AAR)
Sydney Airport has a legislated c 80 aircraft movements per hour which cannot be exceeded. For arrivals Sydney Airport has the capacity to rate of 46 or 50 on the parallel run and 24 on the cross runway.



YMML Air Traffic Operations

Melbourne is the second busiest international airport in Australia consisting of two intersecting runways in the direction 16/34 magnetic and 09/27 magnetic.

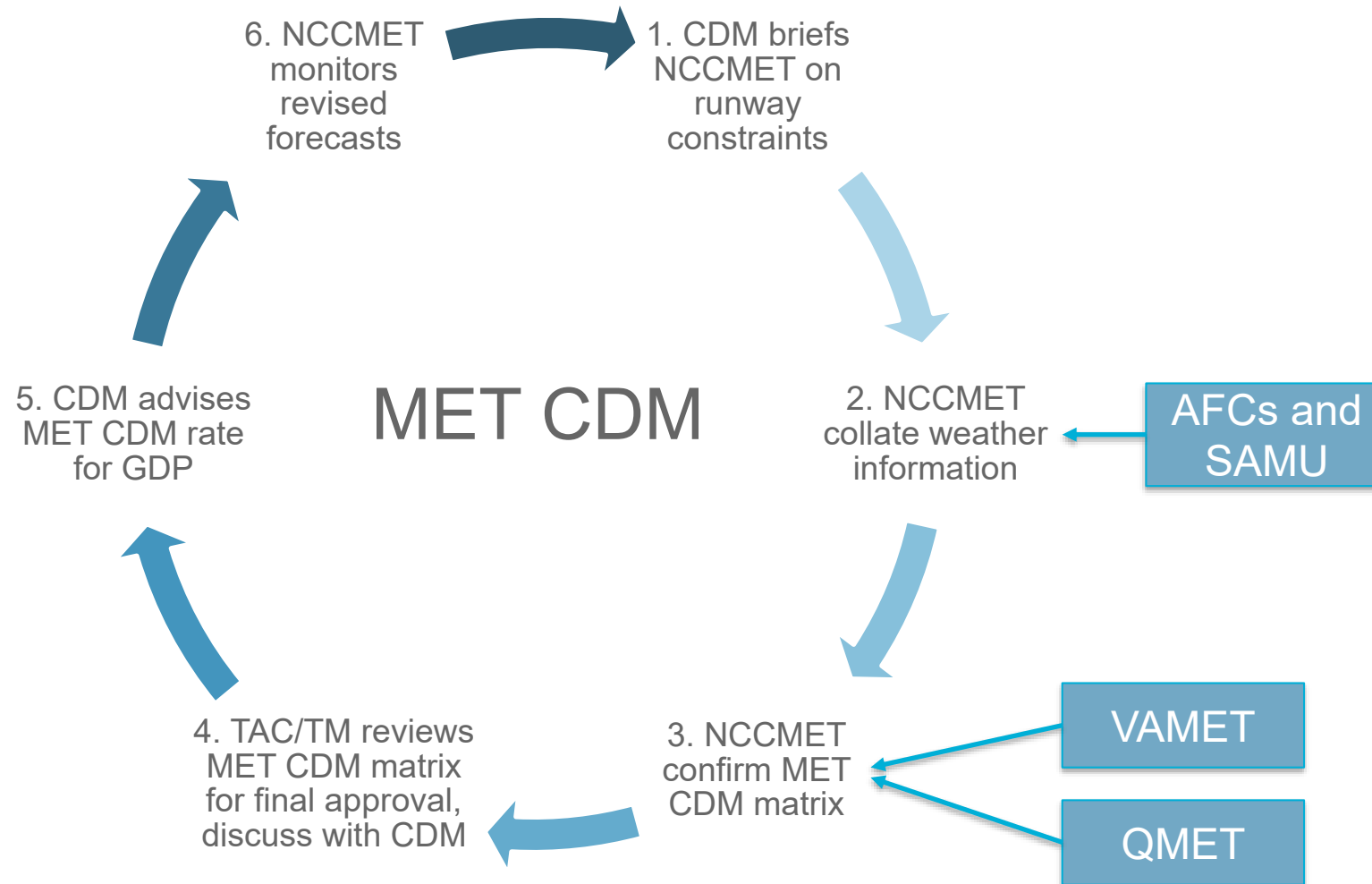


Noise Abatement
There is no curfew at Melbourne airport. However, noise abatement procedures apply. These procedures include a preference to use runway 16 for noise abatement, particularly in the overnight.

Terminal Area (TMA)
This term is used to describe the designated area of controlled airspace surrounding a major airport where there is a high volume of traffic. The Terminal Area (TMA) is a 30nm radial area.



Concept of Operations



Ground Delay Program (GDP) Airports

- A GDP is run for Sydney (YSSY), Melbourne (YMML), Brisbane (YBBN) and Perth (YPPH)
- Other ports around Australia lack the demand to require a GDP
- GDP is run only if a capacity and demand imbalance is identified, which is mostly driven by weather.
- Demand typically less than 75% of capacity when the weather is fine

YSSY	Monday, 28 Oct 2019 - Run 2 - Final																First Light: 1832
	BUSINESS RULES RATES FROM TAF																SHOW / HIDE CALCULATIONS
DATE/TIME	271900	272000	272100	272200	272300	280000	280100	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100
BUSINESS RULES SUMMARY																	
BR RWY	16	16	16	16	16	16	16	16	16	16	16	16	16	16	34	34	34
Tailwind (Worst)	-5.9	-5.9	-5.9	-5.9	-8.7	-8.7	-8.7	-8.7	-8.7	-8.7	-8.7	-2.7	-2.7	-2.7	-2.5	-2.5	-2.5
Crosswind (Worst)	5.4	5.4	5.4	5.4	9.7	9.7	9.7	9.7	9.7	9.7	9.7	12.7	12.7	12.7	7.6	7.6	7.6
BR Approach Mode	FEW30	FEW30	FEW30	FEW30	DVAB	DVAB	DVAB	DVAB	DVAB	DVAB	DVAB	DVAA	DVAA	DVAA	IVA	IVA	IVA
BR Rate	34	42	42	42	38	38	38	38	38	38	38	42	42	42	50	50	37
RESET BELOW	MET CDM RATE																EXPAND/CONTRACT MET CDM
Wind *True	220	220	210	170	150	130	120	120	120	120	120	090	090	090	060	060	060
Significant Wind Speed	8	8	8	8	13	13	13	13	13	13	13	13	13	13	8	8	8
Anticipated RWY	16	16	16	16	16	16	16	16	16	16	16	16	16	16	34	34	34
Tailwind (Main RWY)	-4.9	-4.9	-5.6	-5.0	-12.4	-10.2	-8.7	-8.7	-8.7	-8.7	-8.7	-2.7	-2.7	-2.7	-2.5	-2.5	-2.5
Crosswind (Main RWY)	6.3	6.3	5.4	0.3	4.0	8.0	9.7	8.7	9.7	0.7	9.7	12.7	12.7	12.7	7.6	7.6	7.6
Tailwind (Cross RWY)																	
Crosswind (Cross RWY)																	
Anticipated Approach	FEW30	FEW30	DVAB	DVAB	DVAB	DVAB	DVAB	DVAB	DVAB	DVAB	DVAB	DVAA	DVAA	DVAA	DVAA	DVAA	DVAA
MET CDM Initial Rate	34	42	38	38	38	38	38	38	38	38	38	42	42	42	44	44	34
MET CDM Notes	1	1	2	2	2	2	2	2									
MET CDM X-Factor																	
MET CDM Final Rate	34	42	38	38	38	38	38	38	38	38	38	42	42	42	44	44	34
	TCU SWTM ADJUSTMENT																
SM/TM Notes		1	1	1	1												
SM/TM X-Factor			4	4	2												
Adjusted Arrival Rates	34	42	42	42	40	38	38	38	38	38	38	42	42	42	44	44	34
	ATFM PLAN APPROVAL																
DLM Notes																	
DLM X-Factor																	
ATFM Plan Segmentation	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Final Arrival Rates	34	42	42	42	40	38	38	38	38	38	38	42	42	42	44	44	34
DATE/TIME	271900	272000	272100	272200	272300	280000	280100	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100
Previous Arrival Rates	34	46	46	42	40	38	38	38	42	42	42	42	42	42	42	42	34
Programmed Rates																	
MET CDM Notes	<ol style="list-style-type: none"> Light SW wind expected with cloud around 2500-3000ft developing. Slight risk of a light shower, 16// now considered more likely RWY configuration than 34// from start of the program. S/SE winds increasing bringing the possibility of some light showers. Cloud thickening with base around 2500-3000ft. Chance of heavier showers (very slight chance of a thunderstorm) offshore in the eastern TMA 																
SM/TM NOTES	<ol style="list-style-type: none"> PRM RATES - adjustment in the 2200 and 2300 hours due possible 180 degree runway change 																

- Busiest port
- Important node within national network
- Two parallel runway, one cross runway
- Capacity significantly reduced when excess crosswind on parallel runway's

YMML	Monday, 28 Oct 2019 - Run 1 - Final																	File Light: 1850
	BUSINESS RULES RATES FROM TAF																	EXTRACTED ON: 20191028
DATE/TIME	271900	272000	272100	272200	272300	280000	280100	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100	281200
BUSINESS RULES SUMMARY																		
BH RWY	16	16	27/34	27/34	27/34	27/34	27/34	27/34	27/34	27/34	27/34	16/27	16/27	16/27	16/27	27/34	27/34	
Lashwind (Worst)	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crosswind (Worst)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BH Approach Mode	IMCA	IMCA	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	VMCA	VMCA	VMCA	VMCB	VMCB	VMCB	VMCB
BH Rate	22	22	40	40	40	40	40	40	40	40	40	27	27	27	25	25	24	24
MET CDM RATE																		
Wind True	300	300	280	280	300	300	300	300	300	300	300	270	270	270	270	270	270	270
Significant Wind Speed	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Anticipated RWY	27	27	27	27/34	27/34	27/34	27/34	27/34	27/34	27/34	27/34	16/27	16/27	16/27	16/27	16/27	16	54
InfoWind (Main RWY)	-0.0	-0.0	-0.0	-0.0	-0.0	1.4	2.2	3.0	3.8	4.6	5.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Crosswind (Main RWY)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InfoWind (Cross RWY)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crosswind (Cross RWY)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Anticipated Approach	IMCA	IMCA	VMC	VMCB	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	LAHSO	VMCA	VMCA	VMCA	VMCB	VMCB	VMC	VMC	VMC
MEI CDM Initial Rate	22	22	24	30	40	40	40	40	40	40	50	27	27	27	25	25	24	24
MEI CDM Notes	1	1	1	1&2	2	2	2	2	2	2	3	3	3	3	3	3&4	4&5	4&5
MEI CDM X-Factor				-4	-4	-4	-4	-4	-4	-4								-4
MEI CDM Final Rate	22	22	24	26	36	36	36	36	36	36	26	27	27	27	25	25	24	20
TCU SMTM ADJUSTMENT																		
SMTM Notes																		
SMTM X-Factor																		
Adjusted Arrival Rates	22	22	24	26	36	36	36	36	36	36	26	27	27	27	25	25	24	20
ATFM PLAN APPROVAL																		
GLM Notes																		
GLM X-Factor																		
ATFM Plan Segmentation	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
Final Arrival Rates	22	22	24	26	36	36	36	36	36	36	26	27	27	27	25	25	24	20
WIND REPORT																		
DATE/TIME	271900	272000	272100	272200	272300	280000	280100	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100	281200
Previous Arrival Rates																		
Programmed Rates																		
MEI CDM Notes	<ol style="list-style-type: none"> 1 A ridge of high pressure moves over Melbourne, resulting in light winds with significant variability in direction. Low cloud developing overnight and lingering into the early hours. 2 Cloud dissipating. Light and variable winds tending NNE to NW, favouring LAHSO. X-factor for RET F works. 3 A S to SW sea breeze pushes in, favouring RWY 16/27. 4 RWY 09/27 not available 1100-1845Z. 5 Winds ease and turn NW. 6 7 																	
SMTM NOTES	<ol style="list-style-type: none"> 1 2 																	
GLM NOTES	<ol style="list-style-type: none"> 1 Concur with GDP as proposed. 2 3 																	

- Second busiest port
- One long runway, one short cross runway
- Land And Hold Short Operations greatly increase capacity
- Nuances in wind direction a significant forecasting problem with large impacts on ATFM

BUSINESS RULES RATES FROM TAF																	
DATE/TIME	272000	272100	272200	272300	280000	280100	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100	281200
BUSINESS RULES SUMMARY																	
BL RWY	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Landnd (Worst)	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5	-6.7	-7.7	-7.7	-7.7	-7.7	-7.7	-7.7	-7.7	-7.7	-7.7	-7.7
Crossnd (Worst)	3.9	3.9	3.9	3.9	3.9	3.9	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
BL Approach Mode	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC
BL Rate	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
MET COM RATE																	
Wind True	170	170	160	140	130	120	120	120	120	110	110	110	110	110	110	110	110
Significant Wind Speed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Anticipated RWY	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Landnd (Main RWY)	-6.5	-6.0	-5.5	-5.0	-4.5	-4.0	-3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5	-0.5	-0.5	-0.5	-0.5
Crossnd (Main RWY)	7.5	7.2	6.8	6.5	6.2	5.8	5.5	5.2	4.8	4.5	4.2	3.8	3.5	3.2	2.8	2.5	2.2
Landnd (Cross RWY)																	
Crossnd (Cross RWY)																	
Anticipated Approach	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC	IMC
ME1 COM Initial Rate	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
ME1 COM Notes	1	1&2	1&2	1&2	1&2	1&2	2&3	2&3	2&3	2&3	2&4	2&4	2&4	4	4	4	4
ME1 COM K-Factor																	
ME1 COM Final Rate	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
TCU SM/TM ADJUSTMENT																	
SM/TM Notes																	
SM/TM K-Factor																	
Adjusted Arrival Rates	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
ATFM PLAN APPROVAL																	
DLM Notes																	
DLM K-Factor																	
ATFM Plan Segmentation	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Final Arrival Rates	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
PREVIOUS ARRIVAL RATES																	
Previous Arrival Rates																	
Programmed Rates																	
ME1 COM Notes	1 Cloud 1500-2500ft with a few light showers in the NE TMA. 2 RWY 14/32 not available 2100-0900Z. 3 Cloud lifting to 3000ft. 4 Thunderstorms may develop inland over the W TMA, but with S to SW steering, are unlikely to reach the aerodrome. However thunderstorms are more likely at YAMB and YBAF. 5 6																
SM/TM Notes	1 2																
DLM Notes	1 Concur with GDP as proposed. Forecast T5 activity will be monitored. 2 3																

- Third busiest port
- Summer thunderstorms have a large impact on ATFM
- Third runway recently completed.

YPPH		Monday, 28 Oct 2019 - Run 1 - Final														File: Light: 2019 Led: Light: 1102	
		BUSINESS RULES RATES FROM TAF														EXPANDED WIND FACT MAT DATA	
DATE/TIME		272200	272300	280800	280900	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100	281200	281300
BUSINESS RULES SUMMARY																	
ISN RWY		21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	
Tailwind (Worst)		-0.7	-0.8	-10.8	-20.8	-10.8	-18.8	-18.4	-18.8	-14.8	-11.8	-19.8	-24.8	-24.8	-24.8	-24.8	
Crosswind (Worst)		4.7	4.7	5.5	5.3	5.3	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
ISN Approach Mode		IMCA	IMCA	IMCA	IMCA	IMCA	VMC	VMC	VMC	VMC	VMC	VMC	VMC	VMC	VMC	VMC	
ISN Rate		26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
ROBT DELTA		MET CDM RATE														EXPANDED WIND FACT MAT DATA	
Wind True		290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	
Significant Wind Speed		15	16	20	20	16	16	16	18	22	20	16	16	16	12	12	
Anticipated RWY		21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	21/24	
Tailwind (Main RWY)		-12.2	-16.2	-10.0	-22.0	-16.2	-19.2	-19.2	-18.2	-16.0	-19.6	-26.2	-15.0	-27.0	-23.0	-21.0	
Crosswind (Main RWY)		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	
Tailwind (Cross RWY)		-15.8	-17.1	-19.0	-19.0	-17.1	-17.1	-17.1	-17.1	-20.9	-20.9	-17.1	-17.1	-19.0	-19.0	-19.0	
Crosswind (Cross RWY)		4.8	5.0	5.2	5.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Anticipated Approach		IMCA	IMCA	IMCA	IMCA	IMCA	VMC	VMC	VMC	VMC	VMC	VMC	VMC	VMC	VMC	VMC	
M01 CDM Initial Rate		26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
M01 CDM Note		1	1	1	1	1											
M01 CDM X-Factor		-2															
M01 CDM Final Rate		24	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
		TCU SMTM ADJUSTMENT															
SMTM Note																	
SMTM X-Factor																	
Adjusted Arrival Rate		24	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
		ATFM PLAN APPROVAL															
DLR Note																	
DLR X-Factor																	
ATFM Plan Segmentation		1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	
Final Arrival Rate		24	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
		PREVIOUS ARRIVAL DATA															
DATE/TIME		272200	272300	280800	280900	280200	280300	280400	280500	280600	280700	280800	280900	281000	281100	281200	281300
Previous Arrival Rate																	
Programmed Rate																	
M01 CDM Note		1	A cold front moving across Perth overnight brings low cloud, although only a small chance of any precipitation. The low cloud could linger into the early part of the program before gradually lifting and dissipating. X-factor applied to first hour for risk of cloud below 1500ft.														
		2															
		3															
SMTM NOTES		1															
		2															
DLR NOTES		1	Concur with GDP-D as proposed, and nil requirement for GDP-A														
		2															
		3															

- Fourth busiest port
- Two cross runways
- Very isolated with limited to no alternates
- Due to high departure demand a GDP-Departure, along with a GDP-Arrival, is also run



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Case study on the impacts of a missed fog event on the air traffic network and the impacts on ATFM



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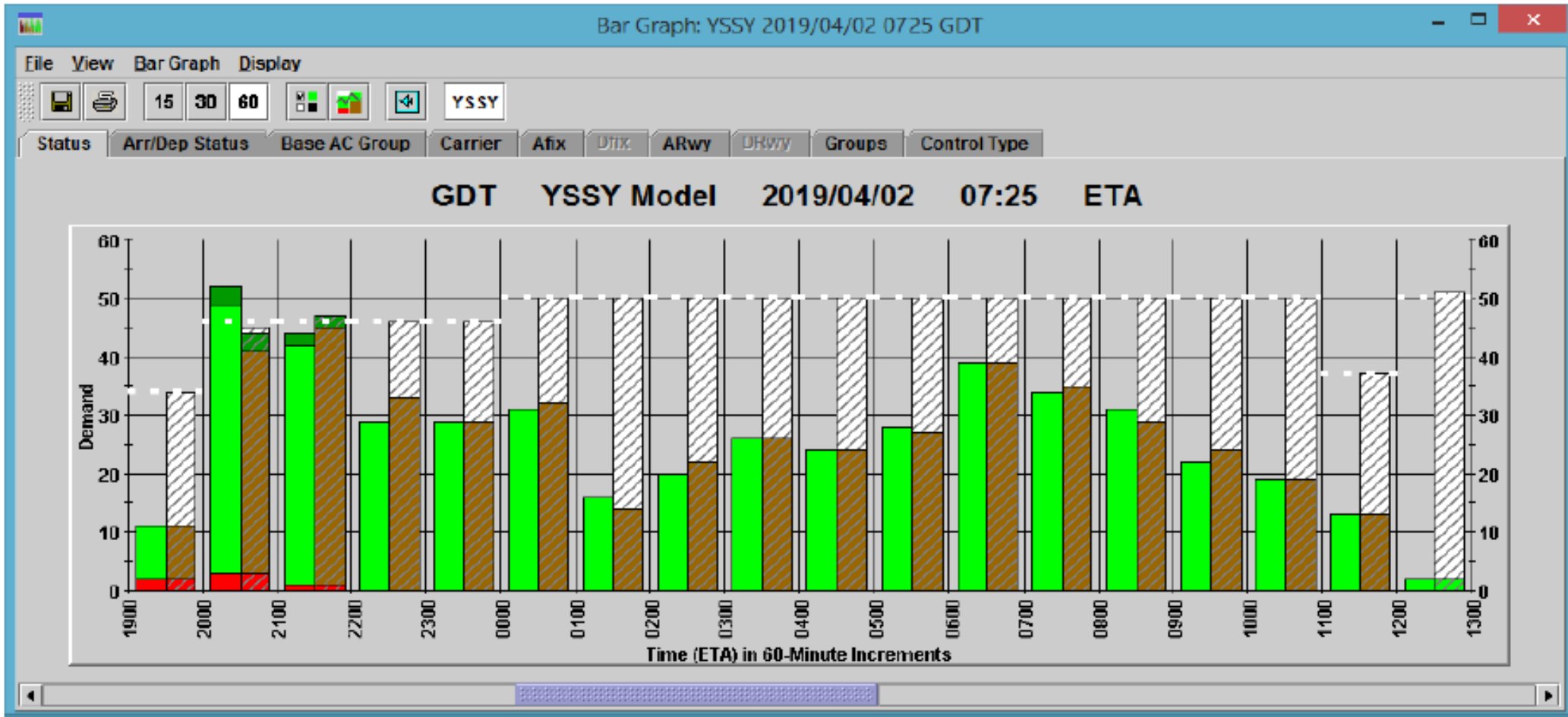
TAF YSSY 020505Z 0206/0312
07008KT 9999 SCT035
FM021400 29008KT 9999 FEW030
FM030000 06010KT 9999 FEW045
RMK
T 22 21 20 19 Q 1025 1026 1027 1026

YSSY		Wednesday, 03 Apr 2019 - Run 1 - Final																First Light: 1944	Last Light: 0813
		BUSINESS RULES RATES FROM TAF																SHOW / HIDE CALCULATIONS	
DATE/TIME		021900	022000	022100	022200	022300	030000	030100	030200	030300	030400	030500	030600	030700	030800	030900	031000	031100	
BUSINESS RULES SUMMARY																			
BR RWY		34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	
Tailwind (Worst)		-4.2	-4.2	-4.2	-4.2	-4.2	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	
Crosswind (Worst)		6.8	6.8	6.8	6.8	6.8	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	
BR Approach Mode		IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	
BR Rate		34	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	37	
RESET BELOW		MET CDM RATE																EXPAND/COMPACT MET CDM	
Wind *True	LOAD WINDS	290	290	290	290	290	060	060	060	060	060	060	060	060	060	060	060	060	
Significant Wind Speed		8	8	8	8	8	10	10	10	10	10	10	10	10	10	10	10	10	
Anticipated RWY		34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	
Tailwind (Main RWY)		-4.2	-4.2	-4.2	-4.2	-4.2	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	
Crosswind (Main RWY)		6.8	6.8	6.8	6.8	6.8	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	
Tailwind (Cross RWY)																			
Crosswind (Cross RWY)																			
Anticipated Approach		FEW30	FEW30	FEW30	FEW30	FEW30	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	
MET CDM Initial Rate		34	46	46	46	46	50	50	50	50	50	50	50	50	50	50	50	37	
MET CDM Notes		1	1	1	1	1													
MET CDM X-Factor	EXPORT PDF																		
MET CDM Final Rate	NOTIFY SM/TM	34	46	46	46	46	50	50	50	50	50	50	50	50	50	50	50	37	
		TCU SM/TM ADJUSTMENT																	
SM/TM Notes																			
SM/TM X-Factor																			
Adjusted Arrival Rates	NOTIFY NCC	34	46	46	46	46	50	50	50	50	50	50	50	50	50	50	50	37	
		ATFM PLAN APPROVAL																	
DLM Notes																			
DLM X-Factor																			
ATFM Plan Segmentation		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	
Final Arrival Rates	FINALISE	34	46	46	46	46	50	50	50	50	50	50	50	50	50	50	50	37	
		SHOW / HIDE CALCULATIONS																	
DATE/TIME		021900	022000	022100	022200	022300	030000	030100	030200	030300	030400	030500	030600	030700	030800	030900	031000	031100	
Previous Arrival Rates																			
Programmed Rates																			
MET CDM Notes		1 Early fog and mist inland but not expected to affect the airport. After discussion with SAMU, a FEW patches of cloud near 3000ft so the FEW MET CDM rate has been indicated in this period.																	



METCDM Proposal

Time (Hour UTC)	021900	022000	022100	022200	022300	030000	030100	030200	030300	030400	030500	030600	030700	030800	030900	031000	031100	
Runway Mode	34 FEW30	34 FEW30	34 FEW30	34 FEW30	34 FEW30	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	34 IVA	
Rate	34	46	46	46	46	50	50	50	50	50	50	50	50	50	50	50	37	



Model Results
Run/Model Time
1100
Total # Flights
469
Flights Affected
352
Total Delay
990
Average Delay
2.8



TAF AMD YSSY 021636Z 0218/0324
 28005KT 9999 FEW030
 FM030300 04010KT 9999 FEW045
 FM031200 28008KT CAVOK
 PROB30 0219/0221 4000 BR
 PROB30 0316/0322 4000 BR
 RMK
 T 17 17 22 24 Q 1025 1027 1027 1025

YSSY	Wednesday, 03 Apr 2019 - Run 3 - Final																
	BUSINESS RULES RATES FROM TAF																
DATE/TIME	021900	022000	022100	022200	022300	030000	030100	030200	030300	030400	030500	030600	030700	030800	030900	031000	031100
BUSINESS RULES SUMMARY	SHOW / HIDE CALCULATIONS																
BR RWY	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Tailwind (Worst)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Crosswind (Worst)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
BR Approach Mode	ILSB	ILSB	ILSB	FEW30	FEW30	FEW30	FEW30	FEW30	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA
BR Rate	34	34	34	46	46	46	46	46	50	50	50	50	50	50	50	50	37
RESET BELOW	MET CDM RATE																
Wind *True	280	280	280	280	280	280	280	280	040	040	040	040	040	040	040	040	040
Significant Wind Speed	5	5	5	5	5	8	8	8	10	10	10	10	10	10	10	10	10
Anticipated RWY	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Tailwind (Main RWY)	-1.9	-1.9	-1.9	-1.9	-1.9	-3.0	-3.0	-3.0	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Crosswind (Main RWY)	4.6	4.6	4.6	4.6	4.6	7.4	7.4	7.4	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Tailwind (Cross RWY)																	
Crosswind (Cross RWY)																	
Anticipated Approach	FOG	FOG	FOG+1	FOG+2	DVAA	FEW30	FEW30	FEW30	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA
MET CDM Initial Rate	15	15	24	34	44	46	46	46	50	50	50	50	50	50	50	50	37
MET CDM Notes	1	1	1&2	2	2	2&3	3	3	4	4	4	4	4	4	4	4	4
MET CDM X-Factor	EXPORT PDF																
MET CDM Final Rate	15	15	24	34	44	46	46	46	50	50	50	50	50	50	50	50	37
	TCU SM/TM ADJUSTMENT																
SM/TM Notes																	
SM/TM X-Factor																	
Adjusted Arrival Rates	15	15	24	34	44	46	46	46	50	50	50	50	50	50	50	50	37
	ATFM PLAN APPROVAL																
DLM Notes																	
DLM X-Factor																	
ATFM Plan Segmentation	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	2	2
Final Arrival Rates	15	15	24	34	44	46	46	46	50	50	50	50	50	50	50	50	37
	SHOW / HIDE CDM																
DATE/TIME	021900	022000	022100	022200	022300	030000	030100	030200	030300	030400	030500	030600	030700	030800	030900	031000	031100
Previous Arrival Rates	34	46	46	46	46	50	50	50	50	50	50	50	50	50	50	50	37
Programmed Rates																	
MET CDM Notes	1 Mist and low cloud. 2 Mist and low cloud lifting from 21Z. Low cloud still possible due lifting fog from western suburbs. 3 FEW cloud possible below 3000ft. 4 IVA with NE winds. 5 6																



GDP rerun at 1825Z as a level 2 revision

Time of GDP Run	GDP Start	GDP End	Total # Flights	Affected Flights	Total Delay	Average Delay	Telecon time	Revision time	Type/Level
Initial	1900	1200	469	352	990	2.8	n/a	1100	INITIAL
0400 L	1900	1200	472	352	1,175	3.3	n/a	1700	1
Midday Plan Proposal									
Revision 1	1900	1200	474	349	8,314	23.8	n/a	1825	2

Impacts of COVID-19

- All GDPs initially suspended
- PH GDP reinstated first due to demand from mining operations
- East coast GDP reinstated on an ad-hoc basis from late April
- Domestic demand typically at about 80% of pre-COVID levels
- International demand remaining very low, though international flights have always been exempt from GDPs.



Australian Government
Bureau of Meteorology



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Discussion



KNOW YOUR WEATHER.
KNOW YOUR RISK.