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ATFM – An Airline Perspective

*What is the operational impact
of*

ATM & increasing traffic levels?



Overall Impact – CPA & HDA

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Year	Delayed Sectors - ATC	Delay Minutes - ATC	Average delay per delayed flight
2010	32,470	394,333 (274 days)	12.14
2011	32,156 (22% of total)	314,751 (219 days)	9.79
2012 (Jan-May)	12,463 (20% of total)	144,605 (100 days)	11.60

Year	Rank by Frequency (ATC Delay)	Rank by Minutes (ATC Delay)
2010	1	3
2011	1	3
2012 (Jan-May)	2	4





Taxi Time Trend

Port	Taxi Out Time (average minutes)			Taxi In Time (average minutes)		
	2000	2004	2011	2000	2004	2011
HKG	15.4	16.7	19.0	6.8	7.2	6.3
TPE	13.6	14.5	16.0	7.0	6.8	4.7
BKK	15.5	17.3	18.8	7.0	6.7	7.1
MNL	15.0	17.0	20.6	7.5	7.2	5.8
SIN	14.6	16.0	21.0	6.6	6.2	7.0
ANC	12.8	11.1	10.8	9.6	10.4	6.4
YVR	19.4	19.7	19.3	8.4	7.8	6.4
DXB	15.9	19.2	17.3	7.5	7.3	8.4
SYD	16.1	16.4	17.2	7.6	6.0	6.3
LHR	22.1	23.8	25.5	8.6	7.3	7.2



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Flight Time Trend

Port	Port	Difference in Average Flight Times in Minutes (2011 vs 2004)	% Change in Standard Deviation of Block Times (2011 vs 2004)
HKG	BKK	5.3	10%
BKK	HKG	-1.6	0%
HKG	SIN	2.9	-10%
SIN	HKG	3.9	22%
HKG	MNL	6.1	60%
MNL	HKG	3.3	43%
HKG	TPE	1.8	14%
TPE	HKG	2.4	29%
HKG	SYD	7.4	8%
SYD	HKG	4.1	7%
HKG	DXB	13.6	0%
DXB	HKG	1.0	0%



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What are the implications of increasing trend for sector times?

- Sector times (ground + airborne) are gradually getting longer – e.g. HKG/SIN on average 5.2 minutes longer in 2011 than 2004
- No immediate reversal of this is expected
- Where will it stop?



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What's important for operators?

- Minimum fuel burn – i.e. minimum “engines on” time – this means preferring delays on the ground rather than in the air
- On Time Performance (OTP)

Q. What's the best way to achieve the most efficient balance of the above?

A. a robust centralised ATFM system



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What is the operational impact of flow control – *as we currently know it?*





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“Flow Control” Delays

Case studies

- – CPAxxx (a daily flight)
 - April – June 2012/total of 93 flights/40 flights delayed by more than 15 minutes (21 by 1 hour or more) /1 flight airborne return/5 flights cancelled and aircraft ferried to destination
- HDAxxx/10Jul12/ – total time spent by passengers on the aircraft – around 9 hours for a 3 hour sector

Impact of Ad-hoc Flow Control



Example from 4 August 2012 – flights planned to overflight Mainland China to the Polar routes but not able to depart due unexpected flow control restrictions and had to return to the Gate and refuel and be replanned via non-China airspace

Flight	Sector	Cargo Offloaded (Kgs)	Extra Fuel Burn (Kgs)	Extra Flight Time (Mins)
CPA 840	HKG-JFK	- 5,600	5,600	52
CPA 826	HKG-YYZ	- 3,700	3,800	34
CPA 846	HKG-JFK	- 6,000	6,000	50



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**Are we really busy enough to warrant
a true ATFM system in this region?**

e.g. Mainland China Airspace – it really is busy



- Typically 1,000+ flights airborne at any one time
- 7M+ flights in 2012
- 14% average annual growth rate in flights over the last 20 years



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HKG Airspace – also really busy

➤ 4 of the world's top 20 routes (by pax numbers) are in HKG airspace:

- #5 HKG/TPE
- #15 HKG/SIN
- #16 HKG/PVG
- #20 HKG/BKK

➤ HKG airspace handles ½ the total annual number of aircraft movements of the entire North Pacific Ocean



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Q. How can we reduce delays, reduce fuel burn and introduce predictability and regularity into the main Asian traffic flows?

A. By implementing centralised, sub-regional ATFM