Airbus A380

Australian Airports
Operational Issues

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Brisbane Airport Corporation
Airbus A380

A380 Australian Airport Operational Issues

- There are no problems with the A330 however there are some issues to solve
- We will look at the operational issues in these areas
  - Airfield
  - Terminal
  - Miscellaneous/Costs to Operator
Airfield

Firstly look at the differential between and A380 and the 747-400

- B747 – 400 ER
  Code E
  Box 64.4m x 70.66m

- A380
  Code F
  Box 78.60m x 73.60m

- A comparison of what this means to the airfield is as follows:
## Airbus A380

### Aircraft

<table>
<thead>
<tr>
<th>Runway Width</th>
<th>ACN No</th>
<th>Passengers</th>
<th>MTOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>B747</td>
<td>45</td>
<td>&gt;97</td>
<td>396</td>
</tr>
<tr>
<td>A380</td>
<td>45/60?</td>
<td>&gt;103</td>
<td>548</td>
</tr>
</tbody>
</table>
## Airbus A380

### Airport Runway Information

<table>
<thead>
<tr>
<th>Airport</th>
<th>Runway Length</th>
<th>Runway Width</th>
<th>PCN</th>
<th>Taxiway Runway Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perth</td>
<td>(3444)</td>
<td>(45)</td>
<td>55</td>
<td>X E</td>
</tr>
<tr>
<td>Melbourne</td>
<td>(3657)</td>
<td>(45)</td>
<td>79</td>
<td>X E</td>
</tr>
<tr>
<td>Sydney</td>
<td>(3962)</td>
<td>(45)</td>
<td>67</td>
<td>X E</td>
</tr>
<tr>
<td>Brisbane</td>
<td>(3500)</td>
<td>(45)</td>
<td>97</td>
<td>G</td>
</tr>
</tbody>
</table>

### Runway Dimensions

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE E</td>
<td>(B747)</td>
<td>182.5</td>
<td>80.0</td>
</tr>
<tr>
<td>CODE F</td>
<td>(A380)</td>
<td>190.0</td>
<td>97.5</td>
</tr>
<tr>
<td>CODE G</td>
<td></td>
<td>200.0</td>
<td>122.0</td>
</tr>
</tbody>
</table>
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- Solutions
- rebuild the taxiway system to achieve separation
- introduce taxiway management system to control operation to avoid conflicts.
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- Taxiway Width/Strength
- Most Australian taxiways are 23 metres wide and could be a problem with taxiway curve radius
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• Aprons
  Some solutions are:
  - additional length of A380 could cause problem with width of apron
  - or load through second doors?
  - or tugs to project onto perimeter road?
  - Bay spacing will have to increase or down grade adjacent bays
  - Strength of aprons
    Not much change to B747 – 400
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Terminals

- Size issues
- Gate spacing as above
- Passenger processing
  - increase of numbers of 39%/aircraft
  - loading and unloading increase of time of 39%?
  - time on bay to increase by 20 minutes
- Refuelling – maybe an increase in time for refuel
- Check-in – based on a 747 of 8 counters/flight
- Check-in for an A380 requires 11 counters/flight
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- Gate Capacity
  - seating/queuing
  - single aerobridge head
  - maybe need to introduce double heads
  - need to possibly have two level access to aircraft

- CIQ: Increases of peak load due to arrival of additional passengers at peak
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Miscellaneous/Costs to Operate

- Issues
  - Cost to reconfigure airport to accommodate A380 including taxiway/runway separation
    - reduced capacity if not separated
  - Cost to increase aerobridge spacing
    - reduced usability of adjacent gates if spacing not increased
  - Cost of taxiway widening/increase radius of curves
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Miscellaneous cont.

• Issues

  Cost of additional check-in counters
  Cost of double headed aerobridges
  Cost of additional runway strength
  Cost of additional runway width 45/60?
  Cost of additional CIQ facilitation
  Fire Service will have to be upgraded from Cat 9 to Cat 10
  Noise should not be a problem based on published information
  • maybe a reduction due to reduced frequency
There are some advantages to the airport with the introduction of A380 operations

- reduce frequency and consequently less pressure on slots
- increase of charges of 39% per aircraft based on passenger charges
- increase of charges of 39% based on MTOW compared with 747 400 operations
1. Adapt operations to accommodate A380 if possible with minimum expenditure eg:
   • controlled taxiway operations
   • downgrade adjacent bays in terminal
2. Re-configure airport to accommodate A380 eg:

- reconstruct taxiways and runways to achieve separation
- re-space aerobridges
- introduce double headed aerobridges
- This is an expensive option and the recovery of costs will be difficult
3. **Do nothing**

- do not accept A380 operations until they are commercially viable or are funded by an operator who wants to use the airport.
- possibly accept only diverted aircraft when no other port available and accepting the conditions as is at the airport.