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Wake Turbulence at Sydney Airport

The ATSB has released the results of its [analysis](#) into wake turbulence events at Sydney Airport between 2012-2016.

The investigation concluded that there is a disproportionate occurrence rate compared with the other major Australian airports. It summarised that:

“Given the parallel runway configuration, wake turbulence occurrences at Sydney Airport were found to be associated with:

- *Arrival densities of one or more aircraft per minute (including parallel runway arrivals), especially on flights that arrived on Runway 34 Right*
- *Wind direction from the west or north-west for aircraft arriving on Runway 34 Right, especially when coinciding with a heavy or super heavy aircraft arriving on Runway 34 Left*
- *Arrivals following an Airbus A380 compared to other aircraft.*

More than half of the wake turbulence occurrences during arrival at Sydney Airport were associated with one or more of the above three factors. Removing all of these factors would halve the occurrence rate and make it more comparable to other major airports, however, the rate at Sydney Airport would likely still be higher than other major Australian airports. This suggests other factors beyond the scope of this investigation are also influencing wake turbulence at Sydney.”

The ATSB acknowledges that the mitigation measures taken or proposed by Airservices will help to reduce the frequency of wake turbulence encounters but does not consider these to be sufficient. The mitigation measures are:

1. *Airservices Australia will publish an Aeronautical Information Circular (AIC) aimed at operators who operate into Sydney Airport. The AIC will advise industry of the injuries associated with wake turbulence for Runway 34 Right as identified in the ATSB Report. The AIC will also recommend that cabin crew should be seated and secured in the earlier part of the approach.*
2. *When the wind is from the north or northwest (i.e. the potential for wake turbulence is more prevalent), to increase pilot awareness and caution, the following action is being taken.*
 - a. *Air traffic controllers will be required to place a standard caution on the Aeronautical Terminal Information Service (ATIS).*
 - b. *A wake turbulence caution will be included in the local En Route Supplement Australia (ERSA).*
3. *When ATIS notification of parallel wake turbulence applies, APP/DIR provide traffic information and awake turbulence caution to aircraft on approach to 34R that will operate within the wake turbulence distance of a Heavy or Super aircraft making an approach to runway 34L.*

Example:

'QFA501, TRAFFIC A380 SUPER RUNWAY LEFT 4 MILES AHEAD CAUTION WAKE TURBULENCE'

4. Increasing separation distances for arrivals from 4 NM to 5 NM on runways 16L/R and 34L
5. Reapplying the single-runway wake turbulence standard to the parallel runways when the leading aircraft is a super heavy like an A380 and the following aircraft is light (under 25,000 kg).

The ATSB agrees that these have the potential to reduce the wake turbulence risk but encourages Airservices to consider conducting their own quantitative analyses to explore other options that could further reduce the risk of wake turbulence for aircraft arriving into Sydney Airport.

How will these measures affect pilots?

1. These (or further) measures could affect the capacity at Sydney when the 34 parallels are in use.
2. Medium aircraft (B737/A330/Q400/SAAB340/F28) crews making an approach on 34R should be aware that there is a potential for wake turbulence if a super heavy/heavy is making an approach ahead on 34L, especially if there is a northwest/ westerly wind. Cabin crew should be seated earlier in the approach.
3. If there is a general alert on the ATIS for wake turbulence, potentially affected aircraft may also receive a specific caution (e.g. QFA501, TRAFFIC A380 SUPER RUNWAY LEFT 4 MILES AHEAD CAUTION WAKE TURBULENCE)

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