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AIRPORT PERFORMANCE INSIGHTS

MUNICH AIRPORT GOES GLOBAL

OPTIMIZING ARRIVAL CAPACITY

WHY SUSTAINABILITY MATTERS

THE DIGITAL APRON

OPTIMIZING ARRIVAL CAPACITY

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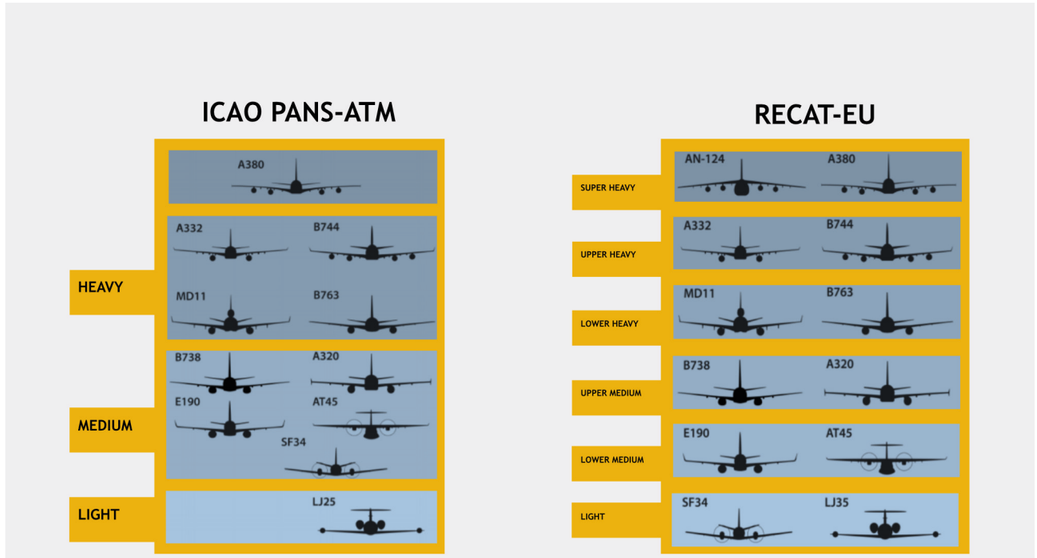
AIRPORTS FACE INCREASED PRESSURE TO MAXIMISE USE OF EXISTING AIRPORT INFRASTRUCTURE TO ACCOMMODATE STRONG TRAFFIC GROWTH. FOR A DEDICATED ARRIVALS RUNWAY, OPTIMIZING CAPACITY IS ALL ABOUT REDUCING THE INTERARRIVAL SEPARATION.



Introducing new aircraft wake categories

Until 2007, separation minima were based on three aircraft categories (Light, Medium, Heavy). The introduction of the A380 required a new category – Super Heavy and significant work on better categorisation leading to RECAT-EU which has six categories – leading to lower separation between some aircraft pairs. The new categories are currently implemented at Paris Charles de Gaulle, Leipzig/ Halle airport and London Heathrow airport.

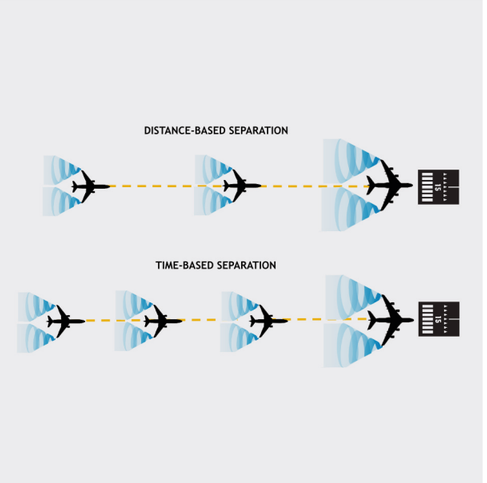
Adopting the new categories: Time-Based Separation

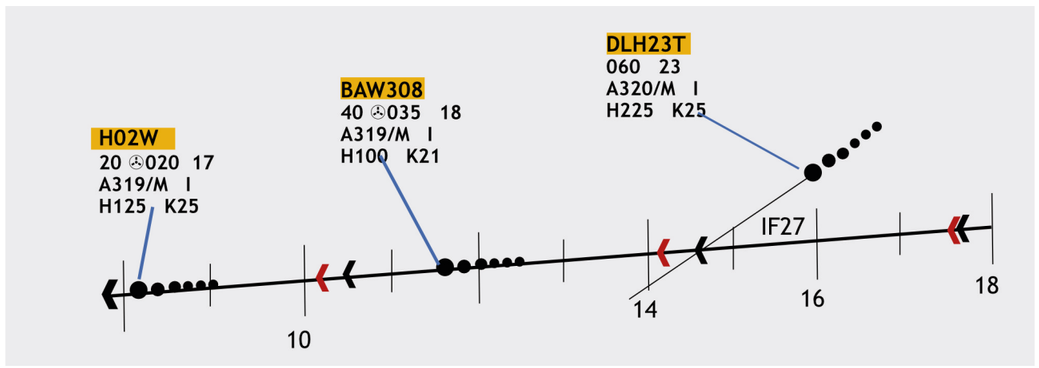
Application of wake categories is called Distance Based separation. In strong headwinds, the time between arrivals increases, but the wake vortices are more quickly dispersed.

Time Based Separation or TBS allows controllers to close the gaps, back up and hence maintain throughput.

TBS was first implemented at London Heathrow airport in March 2015 and is due for deployment at 15 further airports in Europe with airports around the globe showing interest.

TBS requires a dedicated Arrival Spacing Tool (AST) to indicate to the controller the correct safe separation. Use of this tool opens up a number of future possibilities.





The future of aircraft separation: Pairwise Separation

In particular, EU-RECAT Pairwise Separation (PWS) identifies safe separations between specific types of aircraft based on “worse-case scenario” and will give more refined separation standards. Currently 96 types of aircraft have been considered. Rather than have to remember the separation minima, the correct value is presented to the controllers on the AST. PWS can deliver resilience and enhanced capacity, while reducing delays and cancellations, which can be significant benefits for busy airports.

Starting the journey

The common element is the Arrival Spacing Tool. Whatever the background logic in determining the lowest safe separation for a given pair of aircraft and current wind the, AST will inform the controller. Even with distance based separation, use of an AST improves the predictability of delivery to threshold. The operational transition to AST is critical first step. Once this is achieved, the separation logic can be maintained as new techniques, potentially based on Machine Learning and AI become available.