

## SMART TRACKING – BRISBANE

Airservices is updating Smart Tracking at Australian airports to make air travel safer, cleaner and more dependable for approved operators.

In recent years, satellite technology has proved to be a quantum leap in aircraft navigation capability and new aircraft are increasingly being designed to be more capable with this technology. Satellite-assisted navigation is recognised internationally for its safety benefits which are achieved through navigation with high precision. For simplicity, we refer to the most advanced technology currently available as ‘Smart Tracking’.

Smart Tracking aircraft has been successfully operating at Brisbane Airport since 2007. To enable a wider range of aircraft to use Smart Tracking, Airservices is updating procedures to international standards to achieve the best aircraft safety, noise and emissions outcomes for Brisbane.

### WHAT IS ‘SMART TRACKING’

A growing number of modern aircraft are now fitted with navigation systems that use satellite-assisted guidance. Specialised flight management systems in the cockpit use GPS information to fly aircraft with high accuracy and only a small variation in the actual

tracks flown from one aircraft to another. These systems are known in aviation circles by the technical term ‘Required Navigation Performance’ or ‘RNP’, meaning the aircraft can perform in accordance with a strict set of navigation parameters.

### WHAT IS GOING TO CHANGE AND WHY?

Airservices is updating Smart Tracking procedures to enable a wider range of aircraft to use Smart Tracking at Brisbane Airport. This also requires reviewing and updating the flight paths that aircraft use when landing on Runway 01 (arrivals over the city to land at the southern end of the main runway) using Smart Tracking procedures. The updated flight paths can be used by all suitably-equipped aircraft arriving from the north and south to land on Runway 01. The updated flight path from the south replicates the existing flight path. The updated flight path from the north also closely replicates the existing flight path, however it has a slightly wider turn radius before crossing the Brisbane River in the Bulimba area, as shown in the map.



**Above:** Current Smart Tracking flight paths (dashed blue outline) and updated Smart Tracking flight paths (yellow). *Note—the updated flight path from the south replicates the current flight path.*

## **WHEN WILL THE CHANGE HAPPEN?**

The updated flight paths will be available from 17 September 2015.

## **HOW MUCH WILL SMART TRACKING BE USED?**

The flight path from the north is expected to be used on average for six flights a day. The flight path from the south is expected to be used on average between two and eight flights a day.

## **WILL THERE BE MORE AIRCRAFT NOISE?**

The updated flight path from the south replicates the current flight path, so the maximum noise level from each single flight will remain the same.

Although the flight path from the north will be a small distance closer to the Bulimba area (200-300 metres), aircraft using it will continue to be mostly within the existing flight path corridor. Our analysis modelled the Boeing 737-800 aircraft type, as it is currently the aircraft type using this flight path most frequently. The maximum noise level from a single flight over the Bulimba area is estimated to be between 68 and 74 decibels (dBA) (which is equivalent to the noise level of a passenger car travelling at 60 kilometres an hour at a distance of seven metres) and the expected change in maximum noise level for a single flight ranges up to +8 dBA.

## **WILL THERE BE ANY ENVIRONMENTAL BENEFITS?**

Gliding to the runway with engines under minimal power and avoiding straight-in approaches achieves fuel and CO<sub>2</sub> emission reductions. A conservative estimate for Brisbane indicates more than 19 000 tonnes of CO<sub>2</sub> a year could be saved using Smart Tracking, the equivalent of taking 5000 cars a year off the road.

From a national perspective, it is estimated that aircraft using Smart Tracking to arrive at our largest airports would initially save 115 000 tonnes of CO<sub>2</sub> a year. This is equivalent of taking more than 28 000 cars off the road or removing the CO<sub>2</sub> emissions of 8200 families.

As aircraft traffic grows at Brisbane and other Australian airports, all savings will increase over time.

## **HOW DOES SMART TRACKING CHANGE THE WAY AIRCRAFT FLY?**

Smart Tracking aircraft fly with greater accuracy than those using conventional navigation means. This gives them the ability to follow flight paths with high precision and to make smooth, curved approaches even when close to the airport at night and in all weather conditions.

This makes air travel safer, cleaner, more dependable and can provide better noise outcomes for communities living close to airports.

## **HOW IS SMART TRACKING DIFFERENT TO AN INSTRUMENT LANDING SYSTEM?**

An Instrument Landing System is a ground-based navigation aid which uses a radio signal to guide aircraft landing at an airport when there is poor weather and/or low visibility. It consists of two antennas which transmit signals to receivers in the aircraft cockpit—a glide path tower located next to the runway at the northern end and a localiser antenna at the southern end. These antennas provide the pilot with vertical and horizontal guidance when landing in low visibility. Smart Tracking uses satellite signals which are transmitted directly to the aircraft without the use of ground-based equipment. Aircraft using satellite-assisted guidance are able to fly a flight path with far greater accuracy than they could using any other form of navigation.

This increases safety through providing a more stable approach during poor weather and significantly reduces pilot workload during the landing process.

## **WHAT COMMUNITY CONSULTATION WILL OCCUR?**

Residents will be informed of this change through the Brisbane Airport Community Aviation Consultation Group and via Airservices website.

## **HOW CAN I HAVE MY SAY?**

Your feedback is welcomed by contacting the Noise Complaints and Information Service on 1800 802 584 (free call), email [NCIS@airservicesaustralia.com](mailto:NCIS@airservicesaustralia.com) or by mail to Noise Complaints and Information Service, PO Box 211, Mascot NSW 1460.

An interpreter service is also available on 131 450.

## **WHERE CAN I GET MORE INFORMATION ABOUT SMART TRACKING?**

Further information about Smart Tracking is available on Airservices website at [www.airservicesaustralia.com/projects/smart-tracking](http://www.airservicesaustralia.com/projects/smart-tracking)