

SMART TRACKING – PERTH

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

Aviation is critical to the broader Australian economy and essentially links our people with each other and the rest of the world. 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'.

To achieve the best aircraft safety, noise and emissions outcomes for Perth, Airservices is working towards making Smart Tracking technology permanently available for all suitably-equipped aircraft landing at this airport.

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', meaning the aircraft can perform in accordance with a strict set of navigation parameters.

WHERE IS THE NEW SMART TRACKING FLIGHT PATH?

The new Smart Tracking arrival flight path is over the Perth Hills to the southeast of the airport (shown in yellow in the map below). The current visual approach (shown in blue) will also be moved to replicate the new Smart Tracking flight path as part of Perth Noise Improvements 2015.

WHAT IS GOING TO CHANGE?

Smart Tracking will be available for all suitably-equipped aircraft (primarily large



Above: Current visual approach flight path shown in blue. New Smart Tracking and visual approach flight path shown in yellow.

commercially-operated aircraft) from 17 September 2015. It is estimated about 6000 aircraft will potentially use Smart Tracking in the first year. Over time, as additional airlines fit-out their aircraft and train their crews, an increasing amount of aircraft will use Smart Tracking.

As a result of Smart Tracking implementation, it is expected;

- there will be no further regular arrival flights over Bickley and Carmel
- around 1100 fewer arrival flights a year at low level at night for suburbs between Canning Vale and Casuarina
- there will be less overflown populated areas in the Perth Hills.
(note: numbers are estimates only)

WILL THERE BE ANY DIFFERENCE IN AIRCRAFT EMISSIONS?

Yes, it is estimated Smart Tracking will immediately save a minimum of 515 tonnes of CO₂ emissions a year.

For aircraft arriving from the north, the Smart Tracking approach is shorter in distance by about 20 nautical miles or 37 kilometres, and from the east by about 10 nautical miles or 18 kilometres, than the existing approaches used at night and in poor weather via the instrument landing system approach. This may represent a saving in aircraft fuel consumption of 50–100 kilograms per flight, with a corresponding reduction in CO₂ emissions as a result of implementing Smart Tracking.

WHEN WILL THIS CHANGE BEGIN?

Smart Tracking will be available for all suitably-equipped aircraft from 17 September 2015.

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 flights paths with high precision and to make smooth, curved approaches even when close to the airport 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 that they could using any other form of navigation. This increases safety through providing a more stable approach at night and during bad weather and significantly reduces pilot workload in the lead-up to landing.

HOW MUCH WILL SMART TRACKING BE USED?

Pilots landing at airports must be able to see the runway by a specified minimum altitude and distance from the runway before they can land; otherwise they must circle in a holding pattern while waiting for weather conditions to improve or divert to another airport. For Runway 03 at Perth Airport, the critical decision altitude for pilots currently not using Smart Tracking technology on the visual flight path is 520 feet when 4.1 kilometres from landing.

The height at which a pilot must make a decision while flying a Smart Tracking approach is reduced to 450 feet when 3.9 kilometres from landing.

WHERE CAN I GET MORE INFORMATION ABOUT SMART TRACKING?

For more information contact the Noise Complaints and Information Service on 1800 802 584 (free call), email NCIS@airservicesaustralia.com or by mail to Noise Complaints and Information Service, PO Box 211, Mascot NSW 1460.

An interpreter service is available on 131 450.