



1 Efficient flight operations



Airspace design and flight paths are becoming increasingly topical with planned new runways at major international airports and for the Western Sydney Airport.

BARA has developed a simplified description of the main standard terminal arrival routes (STAR) that aircraft can follow in approaching and landing at an airport.

BARA's preference is to encourage the ongoing development of strategic and tactical flow management services to support the implementation of 'Closed STAR' operations, allowing aircrews to maximise the use of their on-board flight management systems.

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2 2015-16 international passenger statistics



International passenger numbers increased by some 2.4 million or nearly 7% to over 36 million in 2015-16.

The number of short-term overseas visitors to Australia increased by nearly 10% to 7.8 million. The number of Australians traveling overseas on a short-term trip increased by just over 4% to 9.7 million (source ABS).

BARA's members cover more than 90% of international passenger flights and most freight exports and imports.

3 Jet fuel supply to Melbourne Airport



IATA, international airlines and BARA have written to the Victorian Government expressing concern over the reliability of jet fuel supply to Melbourne Airport.

The supply of jet fuel to Melbourne Airport has become increasingly tight with the ongoing growth in airline demands not being matched by necessary investments in the jet fuel infrastructure supply chain.

Melbourne Airport's jet fuel supply was subject to 'black traffic lights' in January and October 2015. With no orderly investments in supply capacity to the airport or on-airport storages to date, the risk of fuel shortages has continued to increase in line with the growing demand from airlines.

4 Western Sydney Airport Position Statement



BARA's Position Statement describes the key outcomes necessary for efficient aviation infrastructure services to support a commercially viable airport.

The commercial success of Western Sydney Airport (WSA) in attracting international flights will depend on the efficiency of critical aviation infrastructure services.

WSA's commercial success, with flow-on benefits for the fast growing region, will fundamentally depend on the ability of industry participants to deliver value to passengers and freight forwarders. There is much that can be done prior to the airport's opening to unlock its future potential economic and social contribution.

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Efficient flight operations

Over the next decade there will be additional runways at major international airports plus the planned Western Sydney Airport (WSA). The quality of air navigation services and flight paths will directly influence the efficiency and predictability of safe aircraft operations.

A critical component of an aircraft's flight path is termed the 'standard terminal arrival route' (STAR). A STAR approach takes the aircraft from the airway to the instrument approach procedure, which leads onto the runway.

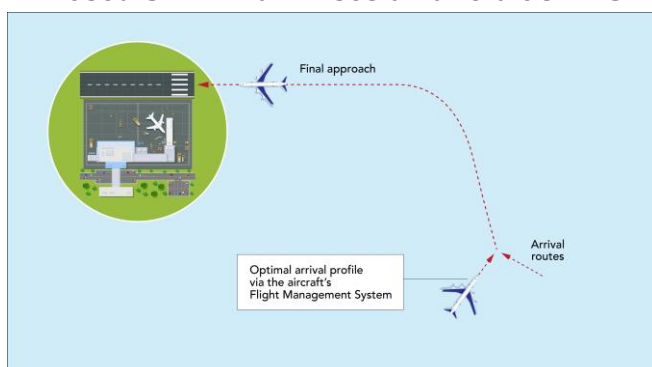
To encourage informed debate over the future of aircraft operations into Australian airports, BARA has developed a simplified description and assessment for the three main STAR options: Closed Star, Open Star and Point Merge.

Closed STAR

Currently used at Melbourne, Brisbane and Perth airports, a Closed STAR is effectively a 'fixed route' followed by aircraft in landing at the airport.

From arrival routes aircraft fly via a waypoint to join the STAR which takes the aircraft to join final approach. Flow management is applied early during the flight to ensure the sequencing of aircraft onto the runway. The Closed STAR exploits the aircraft's flight management system (FMS) to optimise the descent profile.

A Closed STAR maximises an aircraft's FMS

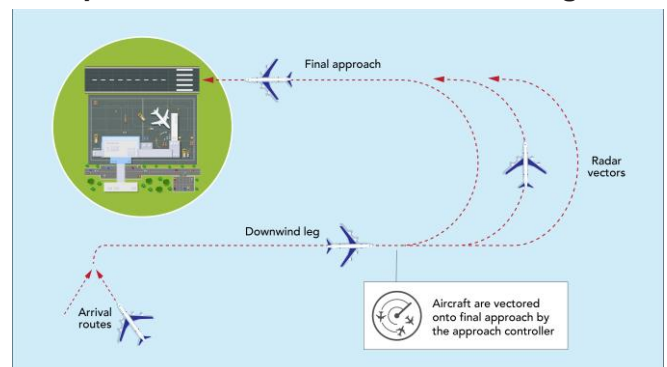


Open STAR

Currently used at Sydney Airport, an Open STAR includes 'radar vectoring' of aircraft by controllers. It is used at Sydney Airport due to the narrow distance between the two parallel runways.

From arrival routes aircraft fly via a waypoint to join a STAR which places the aircraft on a downwind leg (parallel to the final approach path). The controller then navigates the aircraft by issuing radar vectors. Arriving aircraft are instructed to turn onto the final approach with appropriate separation from the preceding aircraft at the discretion of the controller.

An Open STAR involves 'radar vectoring'

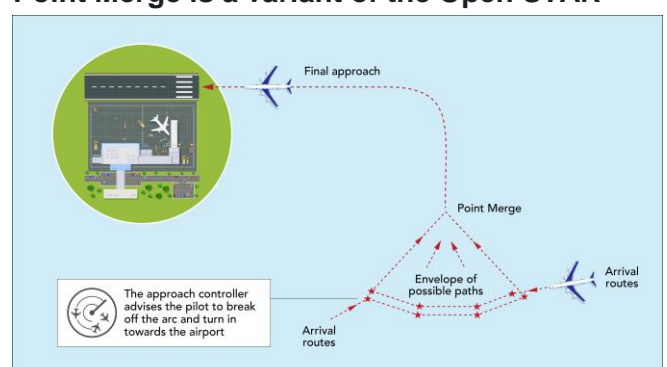


Point Merge

Currently used at some overseas airports, individual aircraft flight paths are shortened or lengthened through a series of known routes.

From arrival routes aircraft fly via a waypoint to join a STAR, which includes an open ended arc subscribed on the track point merge. Controller judgement is applied in determining when the aircraft should turn in towards the point merge.

Point Merge is a variant of the Open STAR





Design considerations

Designing suitable terminal area flight paths for an individual airport involves balancing capacity, complexity and constraints with operating efficiency and pilot and controller workload considerations, while always ensuring the highest standards in safety.

The Closed STAR relies on strategic and tactical flow management by air navigation providers – by reducing or increasing the speed of aircraft well out from landing – to achieve sequenced landings at the airport. As flight crews are given a timing to arrive at a waypoint location then landing, the aircraft's FMS can then determine the most efficient profile.

Using new satellite-based computer technology installed on aircraft also allows for the choice of multiple Closed STARs during the aircraft's landing approach. This means aircraft are no longer restricted to flying over the same point on the ground and instead can fly one of multiple routes, allowing for greater flexibility in noise sharing across the community.

The Open STAR and Point Merge use the lengthening or shortening of flight paths by controllers to achieve sequenced landings at the airport. Because pilots fly a route determined by controller discretion, it limits the use of the aircraft's FMS. This approach to air navigation services is necessary in instances where Closed STAR operations cannot currently be certified (e.g Sydney Airport) or other complexities that limit the effective implementation of strategic and tactical flow management techniques.

For Australian airports, BARA considers that the optimum terminal airspace design should incorporate Closed STAR operations where certification is possible. It maximises the use of the aircraft's FMS, minimising fuel burn and pilot workload. BARA further supports the continued development of Airservices Australia's Long Range Flow Management in supporting Closed STAR operations.

Western Sydney Airport Position Statement

BARA supports the development of a commercially viable airport in western Sydney. Western Sydney Airport (WSA) could bring international air passenger and freight services to the region while also supporting the growth in demand for access to Sydney more broadly.

With a forecast population of nearly three million people by 2031, WSA can support western Sydney's economic and social development. Given Kingsford Smith Airport's (KSA) airfield and operational capacity constraints, an unconstrained WSA will also contribute to Sydney's long-term aviation capacity needs.

A commercially viable WSA

WSA's economic and social success will be measured by the number and diversity of passenger and freight markets served by airlines, and its willingness to operate in a balanced manner with the communities it serves.

If WSA is to achieve its potential, it will have to be able to support commercially viable domestic and international air services.

But its passenger and freight services will only be commercially viable if they cost less to provide than the amount the people and businesses of Western Sydney are prepared to pay.

Critical infrastructure outcomes

There are four critical infrastructure service outcomes to support a commercially viable WSA:

Outcome 1: Innovation in delivering airport services – achieving airline expectations for operational excellence for safety, on time performance, baggage and freight management, and the overall passenger experience.



Outcome 2: A competitive and reliable supply of jet fuel – lowering the price of international aviation's largest cost item.

Outcome 3: Efficient and predictable safe aircraft operations – air navigation services and flight paths to reduce flight times, lower fuel burn and increase airline performance in safe aircraft operations.

Outcome 4: Best practice aircraft noise mitigation – balancing aircraft operations and community expectations in allowing international airlines to make the most of available market opportunities.

Combined, these outcomes will maximise airline operating efficiencies, minimise industry costs and deliver the best possible service outcomes for passengers and freight forwarders.

Financial assistance

BARA's Position Statement describes the infrastructure service requirements that will lead to the greatest number and diversity of international air services (passenger and freight) available at WSA. Achieving these infrastructure efficiencies will maximise the airport's total value, which means they are critical to minimising any financial assistance that the airport operator may require.

If financial assistance is necessary given the capital investment required to design and construct an airport, then it should be funded directly from the Australian Government's consolidated revenue.

BARA does not support any form of levy on airfares, which would effectively impose an additional tax on existing passengers. International airlines have underpinned the growth of passenger services into Australia through real airfare reductions of some 30% over the last decade. Placing an extra levy on otherwise commercially viable air routes, now or in the future, will only serve to reduce airfare affordability, which would damage inbound tourism and decrease the opportunities for Australians to holiday and visit family and friends overseas.

WSA's different market dynamics

For an international airline to establish and expand its presence in Australia it usually has to operate to/from KSA and Melbourne Airport, hence the market power these airport operators have in setting airport prices and delivering services.

WSA's market dynamics should be very different. If an international airline decides to serve WSA, it's because the airline could extend the range and frequency of services it offers in Australia. This means negotiations will be more commercially-balanced between WSA's operator and the international airlines, and will focus more on what will be offered to airlines seeking to establish air routes into and out of Sydney's west.

The operations of all industry participants, including the airport operator, have the potential to be profitable through the delivery of value to passengers and freight forwarders. As in all competitive markets, profitability cannot be assumed or guaranteed and must be earned through delivering services that meet the needs of its airline customers.

Extending accountability and trust

For a commercially successful WSA, the operator's accountability will need to extend well beyond delivering and maintaining the infrastructure and on to delivering outcomes that meet the need of passengers and freight forwarders in Western Sydney and beyond, who will ultimately fund all service providers at WSA.

This level of accountability and engagement from the outset will prove both a substantial opportunity and a challenge for WSA's operator.

WSA's operator must also engender trust with the airlines in its scope and application of charges for services provided. This is especially so for charges on third parties providing essential input to airlines. It will be critical for the airport operator to structure its charges principally based on delivering value and continuous improvement in service delivery.