

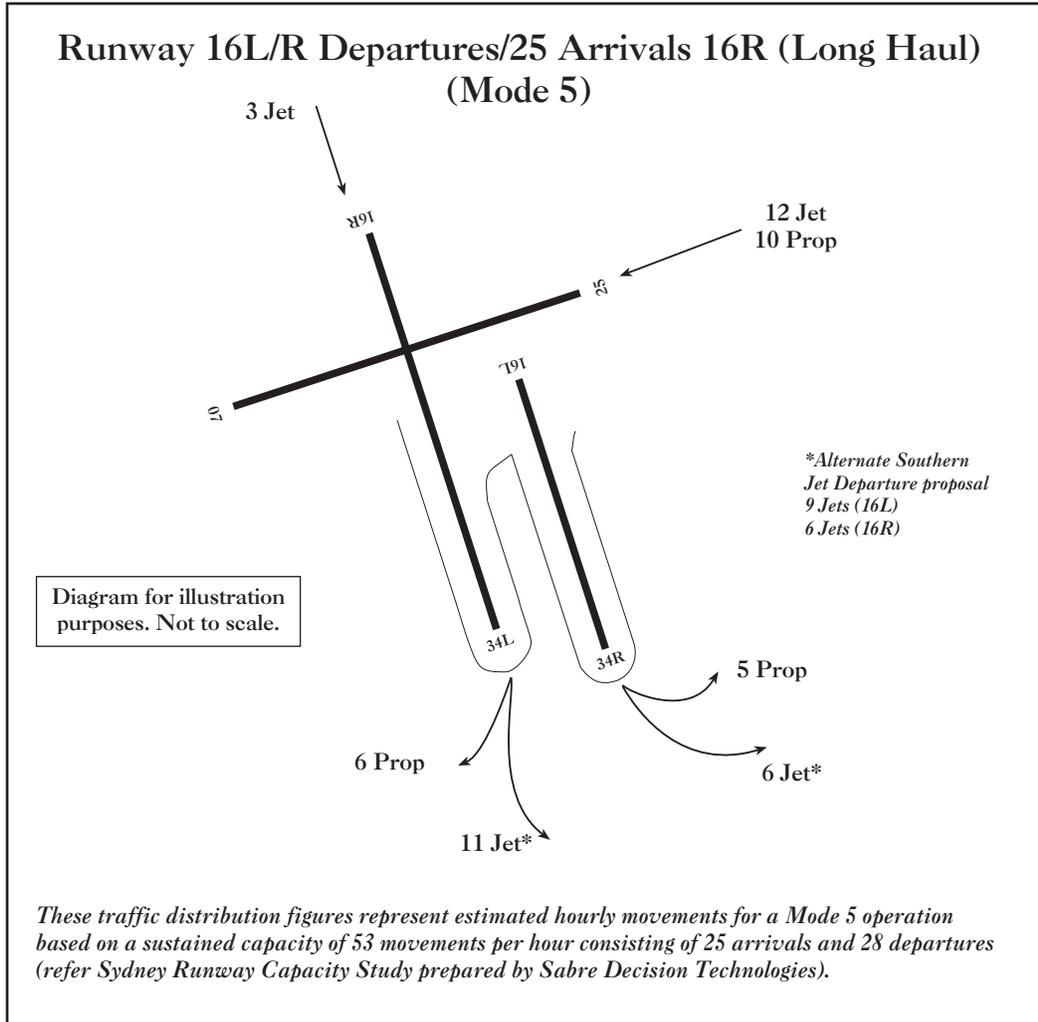
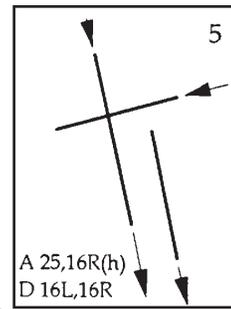
Mode 5

Method of operation

Departures to the south from Runways 16L and 16R.

Arrivals from the east on Runway 25. Arrivals from the north for those aircraft requiring to use the long runway.

This runway mode of operation confines departures to over-water and directs the majority of arrivals from the east.

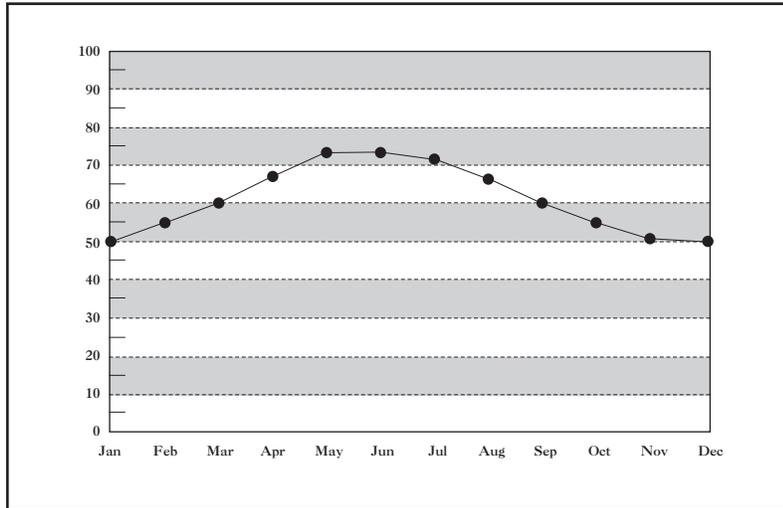


Availability of configuration

Operationally acceptable in wind conditions from south-south-east to west, depending on wind strength and in particular where traffic conditions are biased towards departures.

The Bureau of Meteorology wind data for the 55 years to December 1995 indicates that:

- the all months average availability would be 61 per cent.
- the average monthly availability ranges from 49 per cent in January and December to 74 per cent in May and June.



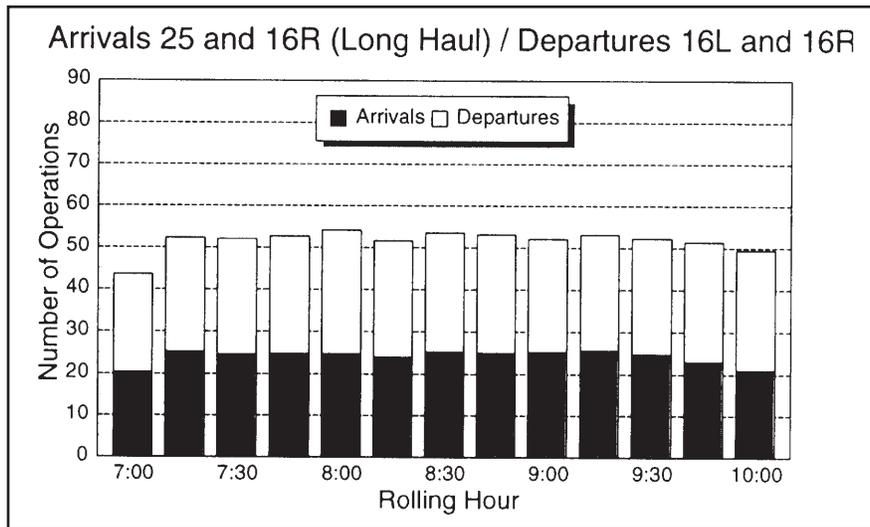
This graph indicates the 55 year average availability from January to December. Where nil downwind criteria is specified the average of all months availability is 35 per cent

Operational capacity

Sabre SIMMOD modelling found a sustained capacity of 53 operations per hour consisting of 25 arrivals and 28 departures. Peak observed capacity of 54 operations

The capacity of this Mode does not quite reach the capacity of Mode 14 because of the use of a single arrival runway that intersects with a departure runway. Mode 14 allows more balanced arrivals on runways 07 and 16R.

This Mode will not reach 80 movements per hour. Sabre reported that the use of intersecting runways without LAHSO procedures will not allow 80 operations per hour due to the increase procedure time requirements.



Graph presents Sabre simulation results for a rolling hour period.

Operational complexity

Complexity increases as traffic levels increase where traffic from the south and west is tracked south of the airport over Kurnell. This creates a potential conflict with departing traffic which must cross over all these arrivals.

Departures are required to remain beneath the traffic arriving from the south and west which is routed 5 nautical miles south of the airport and out to sea to descend before turning back to the west to land.

Propeller aircraft to the north would be required to depart 16R. To offset this jet aircraft to the south would use 16L.

Controller workload is high during this mode of operation. Coordination between tower controllers is required to manage all runway crossings by aircraft, vehicles, and aircraft under tow. Additional coordination may be required for helicopter operations on, and in the vicinity of the airport. Controller workload may be reduced, and operating efficiency improved with the addition of an aerodrome control coordinator position (ADCC).

Constraints to optimisation of capacity

Capacity is constrained by the use of only a single arrival runway.

All departures need to cross the arrival runway, either during take-off roll on Runway 16R, where they must be sequenced by the aerodrome controller, or when taxiing for departure from Runway 16L.

Most arrivals will need to re-cross Runway 16R after landing, when proceeding to the domestic apron areas. This mode of operation may create problems with taxiway congestion around the International Terminal.

Use of Runway 25 is constrained in non VMC conditions due to the lack of a precision approach aid.

Helicopters may incur significant delays during this mode of operation due to the proximity of the heliport and the 25 threshold.

Risk associated with this mode is provided for in the procedures employed and in the development of the operating standard.

Environmental implications

Arrivals 16R (Heavy)

The number of people exposed to noise of 70 dB(A) or more for B747-200 aircraft is a total of 134,400.

At the outer tip of the contour for each particular type of aircraft the noise reaching the ground will be close to 70 dB(A) and the aircraft will be at the following heights.

B747-200	3,400ft	at	Turrumurra, Beecroft.
B747-400	3,100ft	at	West Pymble, Epping.

Arrivals 25

The number of people exposed to noise of 70 dB(A) or more for B747-200 aircraft is a total of 44,200.

At the outer tip of the contour for each particular type of aircraft the noise reaching the ground will be close to 70 dB(A) and the aircraft will be at the following heights.

B747-200	3,400ft	at	Over Water
B747-400	3,100ft	at	Over Water
B767	2,900ft	at	Over Water
Saab 340	850ft	at	Coogee

Departures 16L & R

The number of people exposed to noise of 70 dB(A) or more for B747-200 aircraft is a total of 9,800.

At the outer tip of the contour for each particular type of aircraft the noise reaching the ground will be close to 70 dB(A) and the aircraft will be at the following heights.

B747-200	10,000ft	at	Over Water
B747-400	6,500ft	at	Over Water
B767	6,000ft	at	Over Water
Saab 340	3,000ft	at	Botany Bay

For further details refer to Appendix 9

Conclusions

This is a suitable mode that can be employed to provide respite to residents to the north and northwest of the airport when the wind is in a southerly direction.

Proposed use

It is proposed that this mode be included in the plan and be available to provide respite and as an alternative to parallel operations when conditions are suitable.



**SYDNEY MODE 5 DEPARTURES 16L, 16R ARRIVALS 25
(LONG HAUL JET ARRIVALS 16R)**



MAP 96544 8.5
November 1996

■ Built-up-area (1993)
Note: Tracks shown are indicative
© Commonwealth of Australia

0 km 6
Scale approx



DEPARTURES		ARRIVALS	
	Jet track		Jet track
	Non-Jet track		Non-Jet track
	Dual track		Dual track



SYDNEY NOISE IMPRINT MODE 5 JET DEPARTURES 16L, 16R ARRIVALS 25



November 1996 MP 56/54/9.5 © Commonwealth of Australia

0 5
km
Scale approx



The diagram above indicates that a 767, 737 and similar aircraft leave a significantly smaller imprint than 747-200 series aircraft

- Noise imprint Arrivals (70dBA or above based on a single movement of a 747-200 series aircraft)
- Noise imprint Departures (70dBA or above based on a single movement of a 747-200 series aircraft)
- Built-up-area (1993)

Note: The noise imprints shown are based on a single aircraft movement on the centreline of the indicative flight track