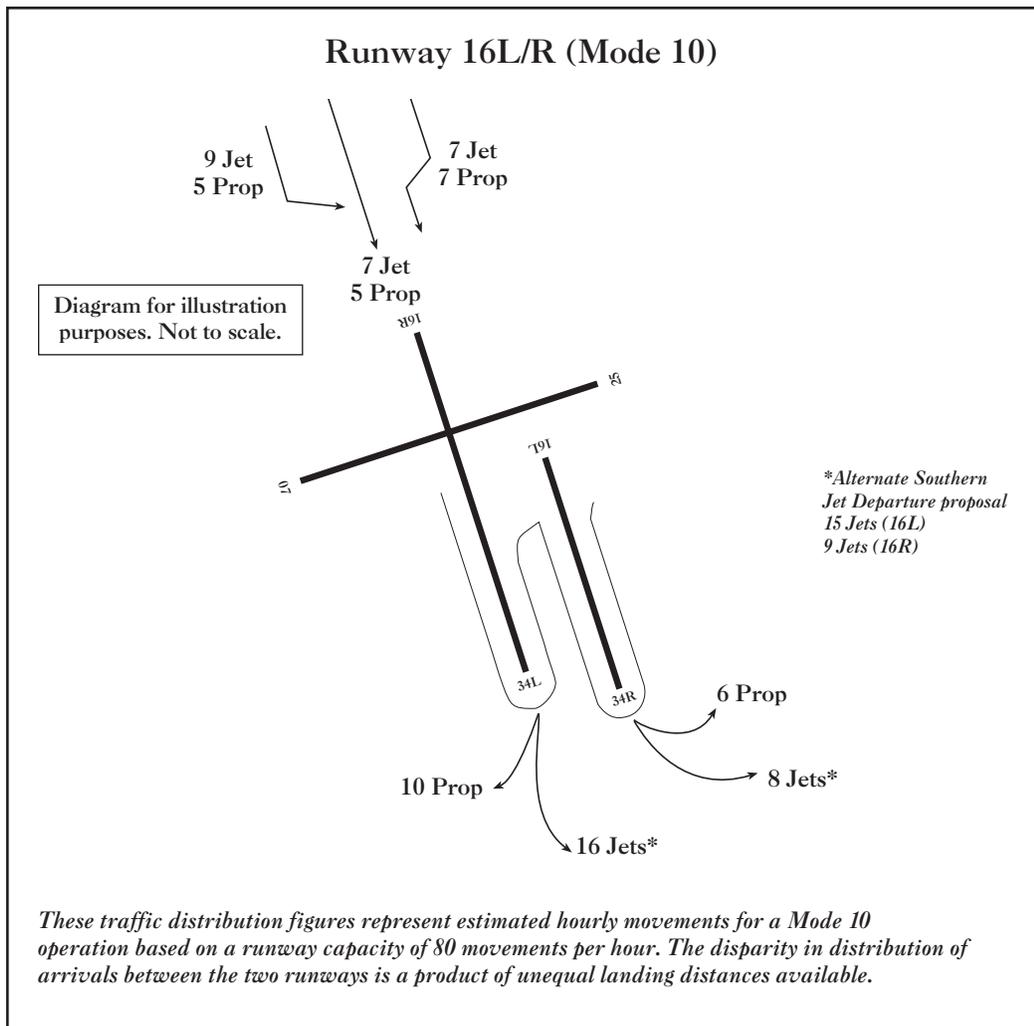
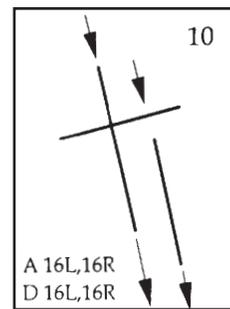


Mode 10

Method of operation

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

Arrivals from the north on Runways 16L and 16R.



Availability of configuration

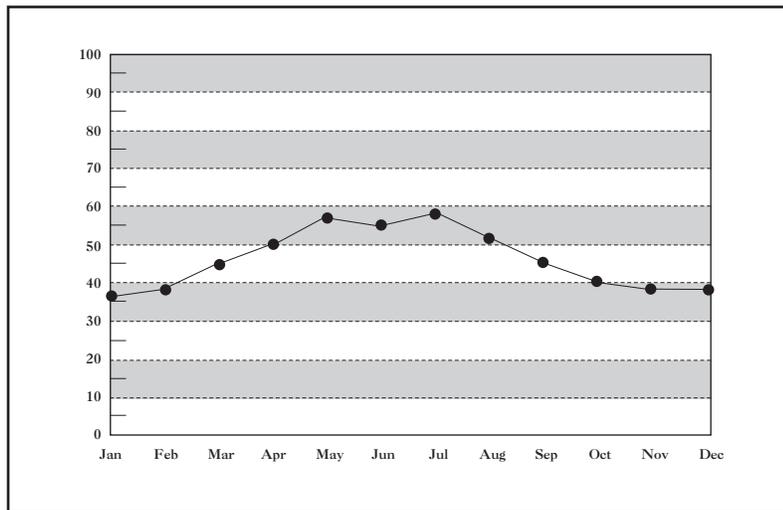
Operationally acceptable in wind conditions up to 5 knots southerly component..

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

- the all months average availability would be 76 per cent.
- the average monthly availability ranges from 71 per cent in Septembers' to 80 per cent in the months of March, April, May and June.

The graph below indicates the 55 year average availability from January to December.

Where nil downwind criteria is specified the average of all months availability is 55 per cent



Operational capacity

Initial Sabre SIMMOD modelling found a sustained capacity of 73 operations per hour consisting of 40 arrivals and 33 departures. Peak observed capacity of 74 operations

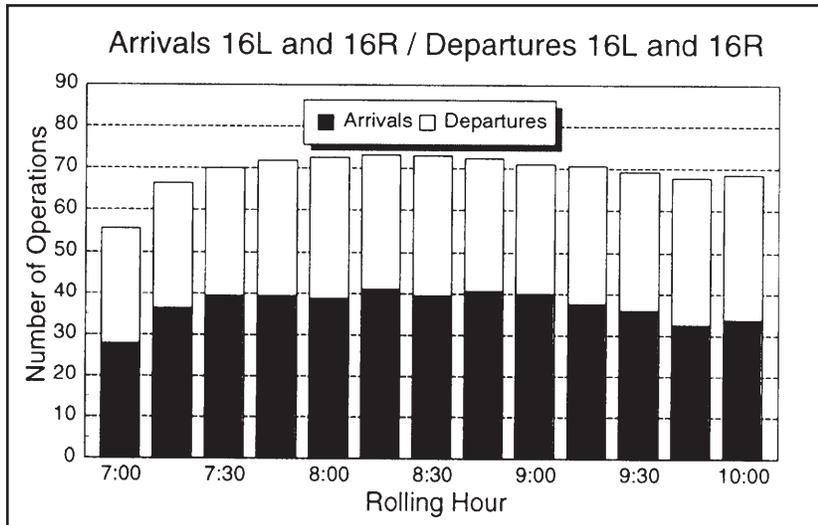
The Sabre modelling assigned arrivals 50/50 to 16L and 16R and departures were assigned 52/48 to 16L and 16R to attain the 73 operations per hour. Sabre found capacity may be limited by inefficient runway exits on both runways.

This Mode will attain 80 operations per hour. However, new runway exits for 16L and 16R that will shorten landing rolls, may be required.

Further Sabre modelling, with both new runway exits and a reduced buyout of 2 nautical miles, produced a sustainable capacity of 87 movements per hour consisting of 49 arrivals and 38 departures. Peak observed capacity of 88 operations

Sabre indicated that Mode 10 produced a significantly higher capacity than Mode 9 due to more optimal location of the new high speed exits on the arrival runways.

Graph below presents the simulation results for a rolling hour period.



Operational complexity

Current parallel operating mode allowing segregation of airspace. Complexity is increased as procedures providing flight paths that spread arriving aircraft over three separate arrival tracks north of Sydney Harbour are employed to lessen the impact of concentrated flight paths. A higher degree of skill and accuracy will be required in aircraft sequencing beyond 15 miles from the airport in order to achieve optimum spacing of aircraft on final approach.

Constraints to optimisation of capacity

Traffic levels up to the cap of 80 movements per hour would be achievable under this mode with some variation, dependent on traffic mix, wake turbulence separation requirements and whether instrument or visual approaches are being used.

Cloud below 4000 ft or visibility below 20 km will limit or preclude operations employing independent visual approaches. Dependent instrument approaches will be required in where weather conditions are worse than 3000 ft cloud base and 5 km visibility and all aircraft will be required to join the runway centreline by 9 nm from touchdown

Environmental implications

Arrivals 16L & R

The number of people exposed to noise of 70 dB(A) or more for B747-200 (16R) and B767 (16L) aircraft is a total of 169,900.

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	Beecroft, Turramurra (16R).
B747-400	3,100ft	at	Epping, West Pymble (16R).
B767	2,900ft	at	Ryde, Lane Cove (16R); Hunters Hill, Waverton (16L).
Saab 340	850ft	at	Leichhardt (16R); Newtown (16L).

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 Mode of operation has the capability to provide high movement rates. All departing traffic is over Botany Bay and turns, either left or right, to avoid the Kurnell township. There is some capability to provide alternate flight paths north of Sydney Harbour in visual conditions, but this leads to a concentration of all arriving aircraft along the extended centrelines of the runways when south of Sydney Harbour or within nine nm when instrument approaches are in use.

Proposed use

In accordance with the runway selection plan, to meet peak traffic demands and during peak periods when strong southerlies prevent use of other Modes.



SYDNEY MODE 10 DEPARTURES 16L, 16R ARRIVALS 16L, 16R



MP 06/544.0.10
November 1996

Built-up-area (1993)
Note: Tracks shown are indicative
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