

CONNECTING THE DOTS

ENHANCING OUR NATIONAL AVIATION NETWORK

JULY 2018



ABOUT TTF

The Tourism & Transport Forum (TTF) is the peak industry group for the Australian tourism, transport, aviation and investment sectors. A national, member-funded CEO forum, TTF advocates the public policy interests of the leading corporations and institutions in these sectors.

TTF uses its experience and networks to influence public policy outcomes and business practices and to assist the delivery of major tourism, aviation and transport-related infrastructure projects.

With the slowing of the resources sector and the decline of many traditional manufacturing industries, the visitor economy has become the new hero industry for economic growth.

For further information, please contact:

Tourism & Transport Forum (TTF)

Level 6, 7 Macquarie Place

Sydney NSW 2000

T: +61 2 9240 2000

www.ttf.org.au

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FOREWORD



Australia is a vast country with a sparse population - 24.6 million people spread across almost 7.7 million square kilometres. That's roughly about the same size as the 48 contiguous states of the US, most of Europe, or 28 times the area of New Zealand.

With distance such a major challenge, we rely on a comprehensive and efficient aviation network to provide dependable connectivity for passengers and freight throughout Australia and beyond. Our network is only as strong as its weakest point.

While there is a need to address capacity challenges at other major airports, in this paper we focus on the role of Sydney's Kingsford-Smith Airport, Australia's largest air transport hub, and both the strongest and most vulnerable link in the national aviation network.

Sydney handles more flights, more passengers and more freight than any other airport in the Australasian region, and continues to grow strongly.

It is subject to strict constraints on aircraft movements in order to manage the impact of noise on local communities. But increasingly, those constraints are limiting the airport's ability to meet soaring demand for travel and air services, upending the plans of travellers, disrupting the flow of freight and frustrating the efforts of airlines to recover their schedules after delays.

With caps on hourly movements and a lack of flexibility to recover from disruption, Sydney's restrictions actually compound initial delays, often spilling them into the national network for the rest of the day, and in some cases well into the next.

The most frequent and immediate casualty is the eastern seaboard, with Melbourne and Brisbane in particular constantly caught in Sydney's backwash. The level of interconnectivity and over flow of disruptions highlights the importance in looking at the network as a whole, and ensuring that capacity improvements are considered for their impact across the domestic network.

The impact is even more dramatic when you consider that the Sydney-Melbourne air route is not only Australia's busiest, but also the world's second busiest for passenger journeys, the Sydney-Brisbane route is frequently ranked in the top 10, and countless other destinations served via these hubs continually suffer collateral disruption.

Debate over Sydney's aviation capacity is not new. It goes back over 70 years, even predating the jet age, and the time for resolution is well overdue.

This paper examines the cost to Australia whenever Sydney Airport fails to function properly or, worse, is constrained from doing so, and recommends a series of commonsense reforms which will benefit the national aviation network.

Margy Osmond

Chief Executive Officer

EXECUTIVE SUMMARY

Australia is an island-continent with the majority of its population scattered along its coastal fringe, separated from each other and from the rest of the world by vast distances and sometimes challenging geography.

Despite this, both Australians and those that visit have become accustomed to travelling more frequently between destinations around the country, as well as destinations further afield, be it for business, for leisure, or everything in between. In 2017, 158.6 million passenger journeys took place around the country.

Airfreight is also a crucial part of the aviation mix, with much of our fresh produce and high value goods exported via air, and items including new car parts and computer imports arriving via aircraft on the way back.

An extensive, accessible and efficient national aviation network is therefore critical to the future prosperity of the nation as the world becomes more interconnected and the tyranny of distance is further tamed.

This paper focuses on the role of Sydney's Kingsford Smith Airport, Australia's largest air transport hub, and both the strongest and most vulnerable link in the national aviation network. With Western Sydney Airport around eight years away, interim measures must ensure effective continuity and efficiency for Sydney Airport air travel between now and Western Sydney's commencement in 2026.

The paper then highlights the growth of the aviation network, provides a snapshot of Australia's busiest airports and then details airline reliance and airline constraints at Sydney, including issues like curfew periods, hourly caps, technology development, airport slots, regional ring-fencing and noise management.

If Sydney and Australia are to keep pace with the growth in demand for air transport, and if the nation is to handle the surge in international air travellers which it has courted for decades, common sense reforms are needed.

The Tourism & Transport Forum is urging a series of reforms to improve the operating capacity and efficiency of Sydney Airport for national economic benefit, while managing the impact of aircraft noise on local communities.



RECOMMENDATIONS



The Federal Government has committed to building a curfew-free airport at Badgerys Creek in Western Sydney, an initiative which TTF welcomes and supports.

But the new facility is not scheduled to begin operations until 2026 at the earliest, a wait of at least eight years.

To ensure that Sydney Airport operates efficiently up to and beyond the opening of the new airport, to build demand and to ensure the efficient operation of the national air transport network, TTF is calling for reforms which help to maximise peak period air transport capacity by increasing the productivity of existing infrastructure, while managing the noise impact on communities.

While fully supporting the overnight curfew on most flights, TTF urges the following measured changes to regulations impacting Sydney Airport during its operating hours:

- Replace the separate hourly caps on slots and aircraft movements with a single cap on scheduled movements;
- Eliminate the 60 minute regulated hour, or 'rolling hour', which recommences every 15 minutes and is used to measure airline compliance with Sydney Airport's aircraft movement constraints;
- Amend the legislative framework to allow movement numbers to increase above 80 movements per hour without increasing the slot cap or overall number of movements in any given day, and in doing so help relieve flight backlogs and enable airlines to restore national schedule integrity following instances of major weather disruption, technical issues, late inbound aircraft, infrastructure failure or other significant incidents;
- Introduce provisions to enable evening curfew dispensations in instances of major weather disruption, infrastructure failure or significant incidents; and
- Revise provisions of the overnight curfew at Sydney Airport to enable the operation of freight jets which are compliant with the latest aviation noise standard (ICAO Chapter 4).

Additionally, to accommodate continued growth in air traffic during the next decade, and reflecting the significant global reduction in aircraft noise, TTF urges the Government to seriously consider:

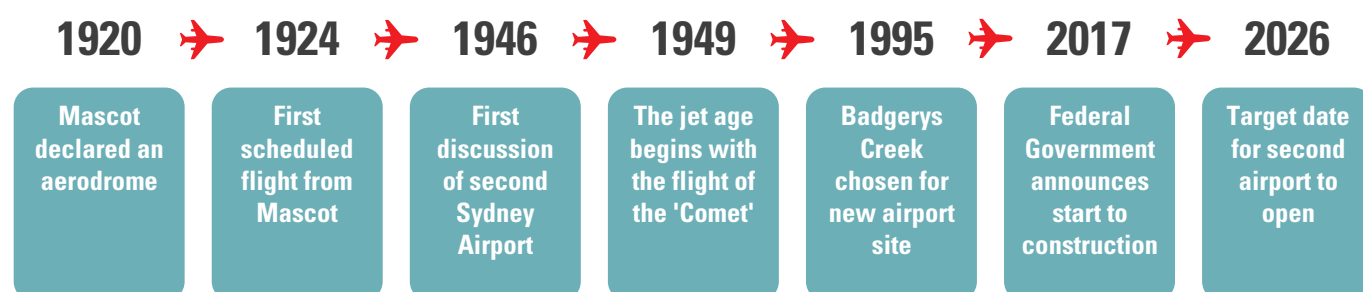
- An increase in the number of movements per hour by noise-compliant aircraft during Sydney Airport's peak periods;
- Removing specific regulations regarding regional air services, to provide airlines with the ability to use any slot held at Sydney Airport to operate either a regional or non-regional service, as is the case at all other airports across Australia; and
- Ensuring that 'shoulder period' operations are permitted to levels approved in the *Sydney Airport Curfew Act 1995*.

THE IMPORTANCE OF AVIATION TO SYDNEY – AND SYDNEY TO AVIATION

Debate about Sydney Airport is not new. The first scheduled flight took off in 1924 from what was then known as Mascot Aerodrome, and by 1946 - three years before Britain's De Havilland Comet aircraft launched the global age of jet travel - discussion had started about the future aviation needs of Australia's largest city.

With excitement mounting about the rise in air travel, attention turned to the infrastructure needed to support growth, and the first study of many was undertaken to find a site for a new Sydney Airport. In subsequent years at least 106 locations were identified, including eight proposals for offshore runways.

SYDNEY'S AVIATION CENTURY



In 1995 – almost 50 years after discussion began about Sydney's aviation infrastructure - the Keating Government opened the third runway at Sydney Airport, providing much-needed additional capacity, though not for the long term. For that, the Government announced that the Sydney region still needed a second airport, and the site would be Badgerys Creek in Western Sydney.

But it wasn't until May 2017, 22 years later, that the Turnbull Government committed to build a new airport ready for operations by 2026 – 80 years after the need was first identified and more than a century after the first scheduled flight from Mascot aerodrome.

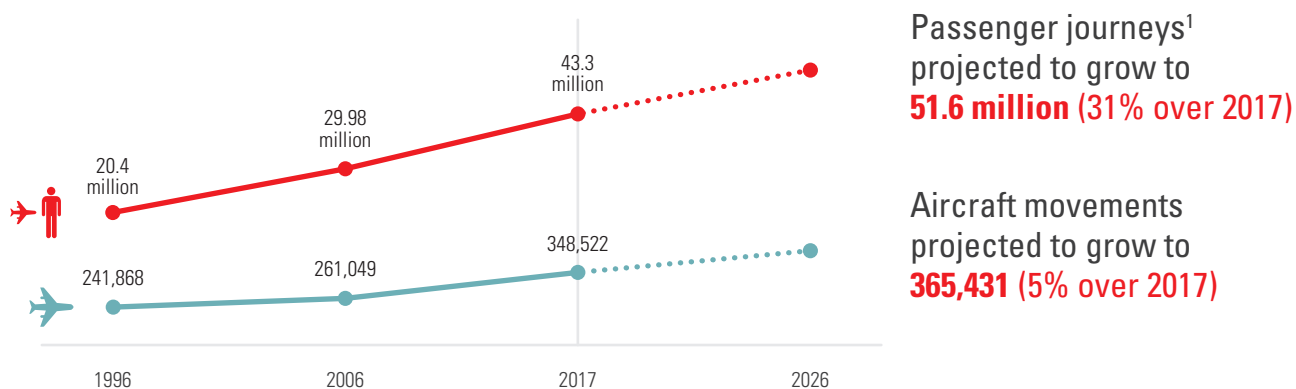
Growth in the number of flights has gradually and predictably squeezed Sydney Airport's capacity to meet demand in peak periods, a problem complicated by a package of constraints implemented between 1995 and 1998, limiting the airport's hours of operation and the number of aircraft movements per hour.

With Sydney Airport achieving significant and continuous growth, and Western Sydney Airport still at least eight years away, industry attention is now being focused on urgent interim reforms to ensure efficient continuity of Australia's largest aviation hub.

Sydney Airport is currently served with scheduled flights by 47 airlines, directly linking the city to some 100 destinations. In 2017, Sydney was the starting or finishing point for 42.9 million passenger journeys, 27.3 million of them domestic and 16 million international, equivalent to 27 per cent of the national total, and up 9.25 per cent over 2015 (N.B 3.6% more than 2016).

In its most recent Master Plan, produced before the Federal Government's decision to build a new airport at Badgerys Creek, Sydney Airport forecast that by 2033 its passenger volumes would rise to 74.3 million, up 32.4 million or 77 per cent over today's levels, and that aircraft movements would increase to 409,500, an increase of 18 per cent.

SYDNEY AIRPORT'S GROWTH 1996 – 2026



1. It is important to note that while domestic aviation data was available for year end Dec 2017, international aviation data was only available for year end June 2017.

The airport assumed an average annual growth rate of 3.4 per cent in passenger numbers and 1.4 per cent in passenger aircraft movements. By 2026, the year that Western Sydney Airport is due to open, these growth projections show that Sydney Airport would handle some 51.6 million passengers and 365,431 aircraft movements.

That equates to an average daily increase of 130 flights, or almost eight more flights for each of the 17 hours that the airport currently operates every day. Updated projections will appear in the airport's next master plan, which is due for release in 2019. The challenges in coping with this increasing demand could leave Sydney Airport vulnerable to a range of associated disruptions including increased flight delays which would then have a major knock on effect across the aviation network.



THE GROWTH OF THE NATIONAL NETWORK

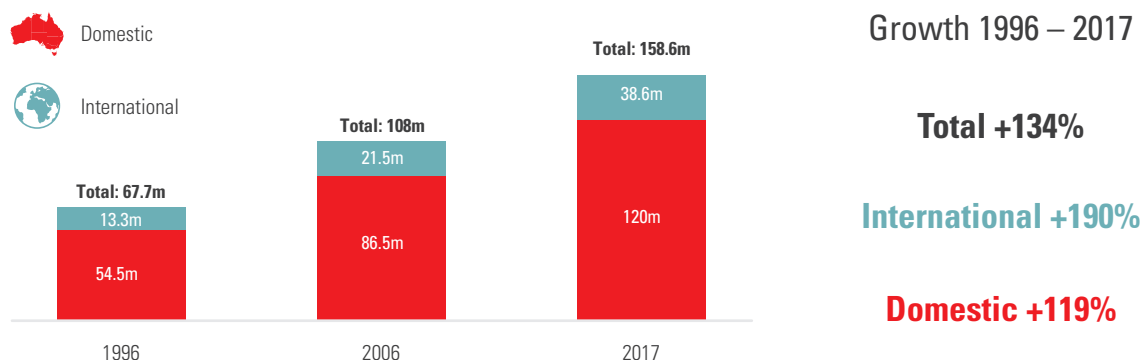


In 2017, around 159 million passenger journeys were taken on domestic flights in Australia, or on international flights originating or ending here. That's more than six times today's national population.

Figures provided by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) show total air passenger numbers for the year grew by 3.8 per cent over 2015. By comparison, the national population grew by 340,000, or 1.4 per cent, over the same period.

To illustrate the long term growth in the national air transport network, we graphed figures provided by BITRE for the 20 year period from 1996 to 2017, which takes into account the year-long national pilots dispute (1989), deregulation of domestic air routes (1990) and the 2001 failure of Ansett Australia, all of which had significant one-off impact.

NATIONAL AIR PASSENGER VOLUMES 1996 – 2017



THE GROWTH OF THE NATIONAL NETWORK (CONTINUED)

The 159 million passenger journeys last year represented a rise of around 91 million, or 134 per cent, over the 21 years.

Domestic passenger traffic grew from 54.5 million to 120 million, a rise of 65.5 million or 119 per cent between 1996 and 2016.

International traffic grew from 13.3 million in 1996 to 38.6 million last year, up 190 per cent, reflecting the steady rise in international travel, the use of larger and longer-range aircraft, the increased number of international routes and the surge in growth from Asia, a region which today accounts for seven of our top 10 source markets for international visitors.

Although international traffic is growing steadily across the nation, more than 40 per cent of passengers arrive in or depart from Sydney, with many also flying on domestic routes. The Qantas Group says leisure visitors from China alone take, on average, two to three domestic flights during their stay.



AUSTRALIA'S BUSIEST AIRPORTS

TOP 10 AIRPORTS – PASSENGER JOURNEYS, 2017

NATIONAL TOTAL: 158.6m

1	Sydney: 42.9m (27%)
2	Melbourne: 35.3m (22%)
3	Brisbane: 22.9m (14.4%)
4	Perth: 12.4m (7.8%)
5	Adelaide: 8.1m (5.1%)
6	Gold Coast: 6.5m (4.1%)
7	Cairns: 5m (3.2%)
8	Canberra: 3.08m (1.9%)
9	Hobart: 2.51m (1.6%)
10	Darwin: 2.1m (1.3%)



Australia's top 10 airports for passenger journeys in 2017 were ranked by BITRE as Sydney, Melbourne, Brisbane, Perth, Adelaide, Gold Coast, Cairns, Canberra, Hobart and Darwin.

Sydney Airport, expectedly and by a large margin, led the nation with 42.9 million journeys by revenue passengers and 324,410 aircraft movements. Sydney also accounted for almost one third (27.3 per cent) of the total passenger journeys handled by the top 10 airports.

Second-ranked Melbourne Airport generated 35.3 million passenger journeys and 240,826 aircraft movements, 22 per cent of the total.

Brisbane Airport achieved 22.9 million passenger journeys, 14.4 per cent of the total.

Perth Airport achieved 12.4 million passenger journeys, Adelaide recorded 8.1 million passenger journeys, Gold Coast 6.5 million, Cairns 5 million, Canberra 3.08 million, Hobart 2.51 million and Darwin 2.1 million passenger journeys.

TOP 10 AIRPORTS – AIRCRAFT MOVEMENTS, 2017

There were almost **1.3 million** scheduled aircraft movements in 2017²

NATIONAL TOTAL: 1.295m

1	Sydney: 324,410 (25.2%)	6	Cairns: 52,010 (4%)
2	Melbourne: 240,826 (18.7%)	7	Gold Coast: 43,336 (3.3%)
3	Brisbane: 201,174 (15.6%)	8	Canberra: 38,730 (3.1%)
4	Perth: 127,746 (9.9%)	9	Darwin: 28,648 (2.2%)
5	Adelaide: 82,630 (6.4%)	10	Townsville: 23,710 (1.8%)

The top 10 airports generated **90% of the national total²**



2. The totals only reflect aircraft of 7 tonnes or more and therefore excludes the 1.45m aircraft movements under 7 tonnes, the 401,384 helicopter movements, all military aircraft movements and the 85,520 aircraft of unknown weight.

THE BIG THREE

Collectively, Sydney, Melbourne and Brisbane airports generated around 101 million passenger journeys, around 64 per cent of all air passenger journeys in Australia, and approximately 60 per cent of all aircraft movements.

THE BIG THREE: PASSENGER SHARE 2017



QUEENSLAND

Of the 10 busiest airports in Australia in 2016, Queensland has four.

Brisbane, Gold Coast, Cairns and Townsville generated a combined total of 320,230 aircraft movements last year, almost 25 per cent of the national total, and almost equal to Sydney.

As well, Brisbane, Gold Coast and Cairns collectively accounted for 34.4 million passenger journeys in 2017, almost 22 per cent of the national total.

Although Queensland has multiple major airports, Brisbane – the nation's third largest - is the primary distribution hub for the state, and a critical point in the national aviation network.

Brisbane Airport is also growing, with a second parallel runway set to open in 2020, doubling takeoff and landing capacity.

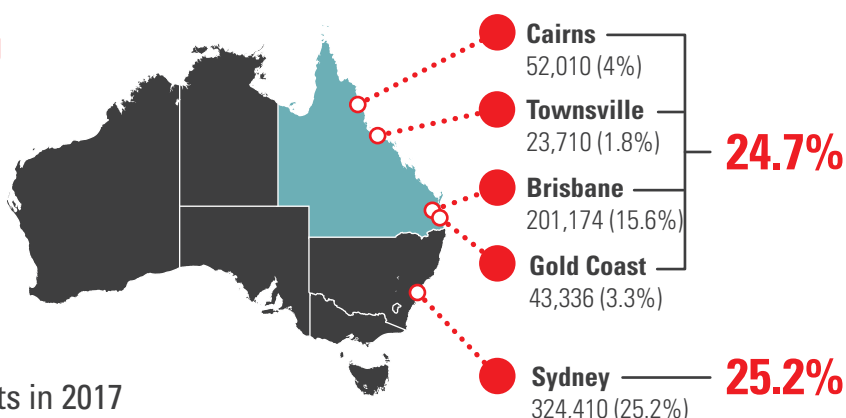
Disruption of air services at Sydney Airport has a major knock-on effect not only in Brisbane, but throughout Queensland.

QUEENSLAND AIRCRAFT MOVEMENTS, 2017

Four Queensland airports **among top 10** for aircraft movements

Brisbane, Cairns, Gold Coast & Townsville: **320,230 in 2017**

24.7% of total national movements in 2017

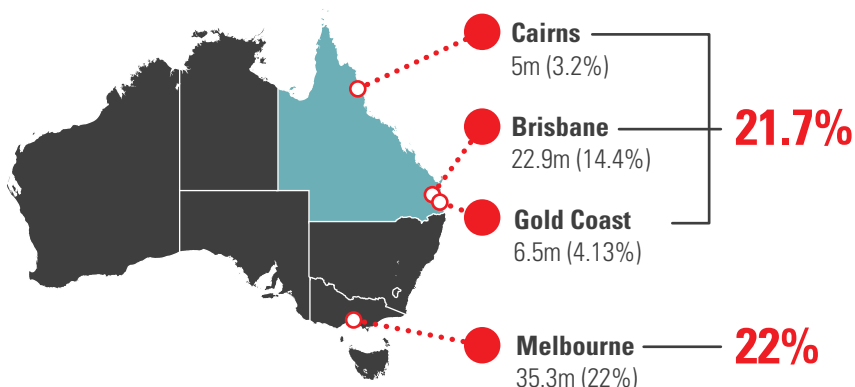


QUEENSLAND PASSENGER VOLUMES, 2017

There were **three** Queensland airports in the **top 10** in 2017

Brisbane, Gold Coast & Cairns: **34.4 million passengers**

21.7 per cent of national total



AIRLINE RELIANCE ON SYDNEY AIRPORT



The importance of Sydney Airport to our five largest passenger airlines – Qantas, Jetstar, Virgin Australia, Tigerair and Regional Express - is reflected in the proportion of their operations which fly via the New South Wales capital.

The Qantas Group operates 6,052 domestic services per week* around Australia. Of these, 1,289, or 21 per cent, fly to or from Sydney (*Based on last week of August 2017).

Qantas Domestic operates 950 services per week to or from Sydney Airport, 21 per cent of its national total of 4,530.

Jetstar Australia, the Qantas Group's low-cost carrier, operates 339 domestic services through Sydney each week, 22 per cent of its national total of 1,522.

The Virgin Australia Group has an even greater reliance on Sydney, with 1,468 of its 3,760 flights, or 39 per cent, flying to or from Sydney. Virgin Australia operates 1,240 domestic flights to or from Sydney every week or 43 per cent of its national total of 2,887.

Tigerair, the low-cost carrier of the Virgin Australia Group, operates 142 domestic flights to/from Sydney each week, which equates to 25 per cent of its national total of 569.*

And **Regional Express**, or REX, operates 568 flights to and from Sydney each week, representing 38 per cent of its national total of 1,486 services in six states.

Internationally, Qantas operates 183 international services to or from Sydney every week, or 58 per cent of its Australian total of 314, while Jetstar operates 43 of its 179 international flights to or from Australia via Sydney each week, 24 per cent of its total in this segment.

Virgin Australia operates 304 international flights to or from Australia each week, of which 86, or 28 per cent, serve Sydney.

*Virgin Australia and Tigerair figures are based on a sample week in March 2018.

CONSTRAINTS AT SYDNEY AIRPORT



Sydney Airport is not only Australia's primary entry point and busiest air transport hub. It is also Australia's most heavily regulated airport, with multiple operating constraints imposed to help mitigate the impact of aircraft noise on communities near the airport, or beneath flight paths.

CURFEW



Sydney Airport operates 17 hours a day, from 6.00am until 11.00pm.

Between 11.00pm and 6.00am, a curfew applies to most operations, to manage community exposure to aircraft noise.

Propeller-powered aircraft and selected types of business jets may operate over Botany Bay and the Kurnell Peninsula during curfew periods.

Limited air freight operations are also permitted using turboprop aircraft or the low-noise British Aerospace BAe 146 QT ('Quiet Trader') freighter, the only type of freighter jet permitted to operate during Sydney's overnight curfew. The operation of dedicated freighter aircraft with lower noise profiles is not permitted.

The Federal Minister for Infrastructure and Transport may grant dispensations for airlines to depart or arrive during the curfew period, subject to three conditions – that a delay is unavoidable, unforeseen and unable to be addressed through alternative arrangements. Weather events are specifically excluded from dispensations.

Each dispensation request, and the Minister's determination and reasons, must be tabled in both houses of Federal Parliament. Fines of up to \$550,000 per offence apply for curfew breaches.

When flights are prevented from departing due to the curfew, airlines incur significant costs in terms of accommodating passengers overnight. An early (pre 6am) arrival running early (due to catching a tailwind etc) will be forced to circle, creating noise and unnecessarily burning fuel, rather than simply land. This is an unintended outcome.

HOURLY CAPS



There are two caps on aircraft operations at Sydney Airport.

A 'slot cap' limits to 80 per hour the number of flights which can be scheduled to arrive at and depart from the airport.

A separate 'movement cap' limits the number of actual movements (excluding helicopters and air ambulances) every hour between 6.00am and 11.00pm daily. Each takeoff and each landing is registered as a single movement.

If an aircraft is delayed, and misses its allocated 'slot time', there is no flexibility in the movement cap to enable airlines to recover their schedules once the hourly limit is reached.

To ensure that slot and movement limits at Sydney Airport are adhered to, Airservices Australia employs staff in the airport's control tower for the sole purpose of counting aircraft arrivals and departures every hour.

THE 'ROLLING HOUR'

Caps on aircraft movements at Sydney Airport are measured over a regulated, or 'rolling' hour, which begins every 15 minutes from 6.00am until 11pm daily.

This ensures very tight monitoring of aircraft movements to ensure compliance with the caps.

The rolling hour measure at Sydney Airport often exacerbates disruption by preventing airlines from recovering lost time when flights fall behind schedule if their new departure or arrival time threatens to push aircraft movements over the hourly cap of 80. Any slots that are unused in each rolling hour are lost.

This continues to cause 'knock-on' delays around the nation. One possible solution is to amend the relevant legislation to allow flights to operate as they present, given that no more than 80 movements an hour can be planned for operations at Sydney Airport. This would require the removal of the 15 minute rolling hour.

CURFEWS AND DISPENSATIONS

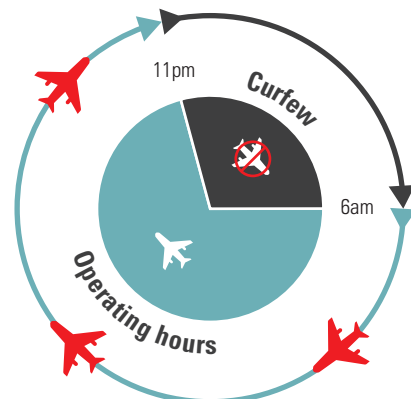
- Overnight curfews apply at three of Australia's main airports - Sydney, Adelaide and Gold Coast.
- In 2016, 52 dispensation applications were approved for flights to operate during the Sydney Airport curfew, and in the first half of 2017 a further 24 requests were approved.
- Collectively, these 76 dispensations over 18 months equated to just under one hour of movements at Sydney in one day.
- Most approvals related to flight delays caused by weather, technical problems affecting aircraft or airport equipment, or medical emergencies, but there were some unusual reasons.
- These included last-minute disembarkation of nervous flyers, a security incident, a lightning strike, slow loading of livestock onto a freight jet and the need to position an aircraft for evacuation flights in North Queensland following Cyclone Debbie.

THE 'WHISPERJET'

- In the early 1980s, the aircraft manufacturer British Aerospace introduced the BAe146 'Whisperjet', so named because, at the time, it was considered the quietest jet aircraft in service, leading the industry's Chapter 3 noise compliance rules.
- The global transport company TNT, which at that time was Australian-owned, ordered up to 72 cargo versions of the four-engined jets to operate overnight freight flights, initially in Europe.
- In the late 1990s, the BAe146 was specified in Australian federal legislation as the only jet aircraft permitted to operate overnight freight flights to and from Sydney.
- Today, more than two decades later, it remains the only jet aircraft permitted to operate freight flights through Sydney during curfew hours.
- This outdated legislation is incompatible with the fact that noise compliance standards have become increasingly stringent over time, encouraging airlines to deploy quieter and more cost-efficient aircraft.

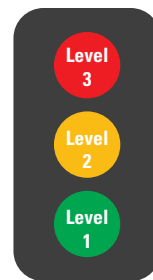


MAJOR AUSTRALIAN AIRPORTS WITH FLIGHT CURFEWS



AIRPORT SLOTS

- The International Air Transport Association (IATA), provides the global aviation industry with the Worldwide Slot Guidelines (WSG), a single set of guidelines for airport slot management and allocation. This includes the categorisation of airports according to their peak period slot capacity.
- A slot is essentially a reservation for an aircraft to land at or take off from an airport at a specified time on a specified date, and to access key infrastructure including runways, taxiways and terminals.
- Airports ranked Level 1 by IATA are not capacity constrained, Level 2 airports face seasonal capacity shortages, and Level 3 airports are the most seriously constrained, where, according to IATA, “demand for airport infrastructure significantly exceeds the airport’s capacity during the relevant period”; and expansion of infrastructure is not possible in the short term.
- Currently, some 300 airports are ranked by IATA as slot constrained in peak periods, with approximately 200 expected to reach the highest level by mid-next year.
- The list of the most seriously constrained airports globally includes eight key Australian gateways – Sydney, Melbourne, Brisbane, Perth, Adelaide, Darwin, Gold Coast and Cairns – all of which IATA says will remain at this level until at least October 2018.
- With serious and ongoing capacity shortages in peak periods at so many of our major gateways, measures to ensure the efficiency of our national aviation network become even more important.



Year-round constraints

Seasonal constraints

No constraints





CURFEW SHOULDER PERIOD

Immediately before and after the overnight curfew at Sydney Airport are one-hour buffers known as 'curfew shoulder periods', during which the opportunity exists for a small number of passenger flights to be operated by international airlines.

Operations during these shoulder periods are governed by the *Sydney Airport Curfew Act 1995* and the *Sydney Airport Curfew Regulations 1995*.

The *Sydney Airport Curfew Act 1995* authorises arrivals into Sydney by 35 international passenger jets per week, with a limit of seven per day, in the 'morning shoulder period' between 5.00am and 6.00am, and 14 arrivals or departures per week, with a maximum limit of four each day, in the 'evening shoulder period' between 11.00pm and midnight.

However, the *Sydney Airport Curfew Regulations 1995* specify that only 24 arrivals per week in the morning shoulder period are permitted, while prohibiting all operations during the evening shoulder period.

Additionally, if the number of approved flights operated by airlines in the morning shoulder period is reduced for any reason, there is no opportunity to subsequently restore them.

At the time of writing, the number of flights operating each week in the morning shoulder period was 21, or three per day – less than half of the 49 daily 'shoulder flights' approved in the original legislation.

REGIONAL RING FENCE

In addition to hourly caps on both the number of aircraft movements through Sydney Airport, and approved arrival and departure slots, up to one third of slots allocated in peak periods is reserved for flights between Sydney and regional New South Wales.

The relevant legislation does not allow additional slots to be allocated for regional services in peak periods, which is restricting the growth of services to regional destinations. This has implications for competition and airfares on regional routes in NSW.



LONG TERM OPERATING PLAN

Sydney's Long Term Operating Plan (LTOP) is designed to balance the operating requirements of the airport and the need to manage the impact of aircraft noise on communities close to the airport or beneath flight paths.

The LTOP specifies a total of 10 combinations of aircraft arrival and departure paths for Sydney Airport's three runways.

This is to maximise the number of flight tracks over water and away from residential areas and to 'share' aircraft noise as equitably as possible, subject to the impact of weather or demand for flights during the airport's 17 operating hours each day.



QUIET PROGRESS

Reducing community exposure to aircraft noise is the principal reason for constraints on aircraft operations.

IATA expects around 4 billion passenger journeys to be taken on scheduled flights in 2017, almost doubling to 7.8 billion by 2035.

It is also important to note that noise standards set by the International Civil Aviation Organization have become increasingly stringent over time. These standards have driven the incorporation of the latest available noise reduction technology into aircraft design, as reflected in day-to-day operating procedures. This aims to ensure that noise reductions made available through technological developments result in less noise around airports and under flight paths, improving noise outcomes for communities.

In addition to achieving significant improvements in efficiency, payload and flying range of modern airliners, aircraft and engine manufacturers have collaborated for decades to help reduce aircraft noise and CO₂ emissions, with evidence of significant improvements. The reduction in noise is, however, more than offset by increased frequency.

The US aircraft manufacturer Boeing has cited reductions of up to 90 per cent in the noise footprints of today's wide-bodied Boeing 787 Dreamliners, compared to the pioneering Boeing 707, which propelled many carriers into the jet age in the early 1960s, but left a trail of noise and plume of black exhaust in their wake.

A 2015 report by the German Aviation Association said the latest generation of passenger airliners was around 25 decibels or 80 per cent quieter than the original jets. Manufacturers continue to work towards even quieter, more efficient engines.

Sydney Airport's latest master plan shows that aircraft noise contour forecasts for 2033 are similar to those achieved back in 2011, and much smaller than the 1976 noise footprints, despite a substantial rise in aircraft movements.

And London Heathrow, the world's second busiest airport, cites independent analysis by the UK Civil Aviation Authority which shows that since 2006, the noise footprint has contracted by 15 per cent, with an estimated 52,000 fewer households affected.

Additional measures around the world to reduce noise, such as continuous descent operations, enable aircraft to approach their destinations in a single, unbroken trajectory, instead of the commonly-used stepped approach, reducing both noise and fuel consumption.

Boeing recently forecast that the combined global fleet of passenger and freight jets would double from 23,480 in 2016 to 46,950 in 2036, as airlines invested trillions of dollars acquiring new aircraft to replace older, noisier and less-efficient fleet, and to accommodate growth.

Europe's Airbus Industrie also forecast massive growth in aircraft orders, citing the need for 35,000 new jets of 100 seats or more by 2035, 22,000 of which will be used to accommodate growth.

Yet despite these huge investments by airlines, and verifiable reductions in aircraft and airport noise, mitigation measures created for previous generations of aircraft (many of which no longer operate) still apply.

There are some notable exceptions such as London Heathrow which, since the late 1990s, has offered lower landing charges as an incentive for airlines to use the newest, quietest aircraft types.

But in many other cases, noise restrictions are simply evolving into movement restrictions, without any consideration of the demonstrated environmental improvements delivered by new aircraft, or the economic benefits of increased passenger and freight capacity.



ECONOMIC CONTRIBUTION & GROWTH PROJECTIONS



Sydney Airport is Australia's largest air transport hub, and the principal gateway to Australia.

In addition to directly supporting both the country's biggest city and most populous state, it is also a critical part of Australia's economic infrastructure, and a key enabler not only of national business growth, social interaction and freight movement, but also of the visitor economy, which is rapidly evolving to become the nation's next 'super-growth' industry following the decline of the resources sector and traditional manufacturing industries.

Sydney hosts 47 airlines and has direct connections to some 100 destinations, including nonstop links to 15 cities in the dynamic market of Greater China. Codeshare or commercial arrangements between airlines provide access to a vast range of additional destinations via foreign hubs.

Last year, Sydney Airport handled 42.9 million passenger journeys and 324,410 aircraft movements. It also handled 40 per cent of all international passenger journeys to and from Australia, and around 50 per cent of the nation's air freight. In the first half of 2017, 14 international airlines committed to increase their Sydney capacity by opening new routes or offering more seats on existing routes, adding 1.5 million extra seats in the year's second half.

In 2018, the global consultancy Deloitte equated the value of Sydney Airport's economic contribution to 2.2 per cent of Australia's GDP. It estimated that the airport's economic activity would grow in value to \$40.6 billion by 2019, and \$45.8 billion by 2024.

Deloitte estimated that Sydney Airport generated economic activity of \$38 billion in 2017, equivalent to 6.8 per cent of the NSW economy, and supported 338,500 full time equivalent jobs, equating to 10.1 per cent of NSW employment.

REGIONAL AVIATION

A key issue for Australia's state and federal governments is regional development, not only for commerce, freight movement and local community travel, but also increasingly for the dispersal of international tourists beyond capital cities.

Regional NSW relies heavily on Sydney Airport for passenger and freight movement between provincial centres and the state capital, as well as onwards connectivity to other destinations throughout NSW, interstate and beyond.

Some airlines serving Sydney Airport have identified opportunities to increase regional services in peak periods, but have no ability to do so due to restrictions under the *Sydney Airport Slot Management Scheme 2013*. This scheme contains arrangements that designate particular slots as 'regional', ie for the operation of intra-NSW services. However, the interaction of the specific restrictions on regional slots with the rolling hour movement cap prevents the introduction of new regional services during peak periods.

And because of the high and growing demand for peak period operations in Sydney, and the hourly caps on slots and movements, international and large domestic aircraft have priority ahead of regional turboprop aircraft for slot allocations, in order to maximise the productivity of each slot.

Sydney-based Regional Express, Australia's largest regional airline, operates 568 flights per week to and from the city, equal to 38 per cent of its national activity. Its total operations grew by 6.7 per cent last year, but its Sydney operations remained unchanged because of the lack of additional access.

Because of this, in the critical 0700-0900 and 1700-1900 hours, there were 42 fewer regional slot pairs at Sydney Airport in Northern Summer 2017 compared with Northern Summer 2001. As the remaining protected regional slots are not commercially suitable for airlines, it will be difficult for there to be any meaningful expansion of NSW intrastate services until the opening of the Western Sydney Airport.

Virgin Australia would like to see the Slot Management Scheme amended through the removal of specific regulations regarding regional air services, to provide airlines with the ability to use any slot held at Sydney Airport to operate either a regional or non-regional service, as is the case at all other airports across Australia. This would deliver enhanced competition and access to regional NSW, benefiting businesses, consumers, trade and tourism. It would not result in a loss of airport productivity as the use of a non-regional slot for a regional service by an airline – e.g. Sydney-Melbourne slots used for Sydney-Dubbo – could be expected to result in it upgauging aircraft on another Sydney-Melbourne frequency. It is also worth noting that there would be no negative impact on the noise footprint of the airport.

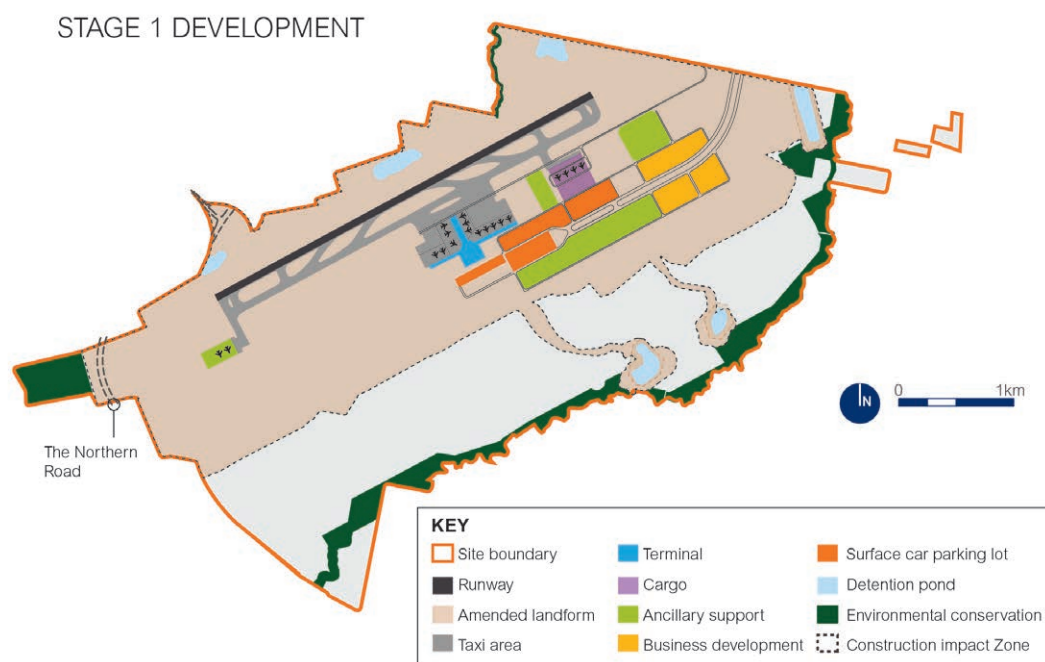
JOINT STUDY ON SYDNEY'S AVIATION NEEDS

In 2012, the Joint Study on Aviation Capacity in the Sydney Region produced a blunt assessment and a dire warning about the capability of Sydney Airport to accommodate natural growth in air transport without substantial expansion of aviation capacity.

Co-chaired by the then-Secretary of the Australian Department of Infrastructure and Transport and the Director-General of the NSW Department of Planning and Infrastructure, the report provided detailed growth forecasts for the Sydney basin, comprising both the current Sydney metropolitan area and the rapidly expanding Western Sydney region.

The primary recommendation of the report was for the Federal Government to identify a site for a second airport in the Sydney region, and to have a new facility operational by 2030.

In May 2017, the Federal Government formally committed to develop Western Sydney Airport at Badgerys Creek, declaring that it would be fully operational by 2026, with first-year operating capacity of 10 million passengers, and no flight curfews.



But the more immediate concern expressed in the report, the continuing need to allow for growth at Sydney Airport, has not been addressed, leaving a challenge for the airport to accommodate ongoing growth.

The Joint Study concluded that by 2020 – barely two years from now – “the anticipated level of economic and population growth of the Sydney region, including Western Sydney, will see unconstrained demand for 57.6 million passengers and 421,000 regular public transport (scheduled passenger) aircraft movements.”

Of this number, the study concluded that the current Sydney Airport would generate demand for 50.6 million RPT passenger journeys and 369,000 aircraft movements.

Those estimates represent an increase of 20 per cent over the 42.9 million air passenger journeys through Sydney Airport in 2017, and a 9 per cent rise in aircraft movements over 2015.

Among the key, immediate recommendations of the 2012 Joint Study, was the use by airlines of larger aircraft to accommodate growth – a move which has occurred over a number of years and continues.

The study also recommended an increase in aircraft movements from the current 80 flights per hour to 85 each weekday between 6.00am and 10.00am, and again between 3.00pm and 8.00pm – a total of 45 extra movements per weekday, or just over half of the movements permitted in one hour at Sydney Airport on a day without flight interruptions.

The airport handled as many as 109 aircraft per hour during the Sydney 2000 Olympic Games.

Today, six years after the Joint Study was presented to the Federal Government, and despite the increase in aircraft size, aircraft movements at Sydney Airport have still increased by 17,500 per year, or an average of 48 per day.

The Joint Study said: "Sydney Kingsford-Smith Airport will continue to be the most important airport for the Sydney region, and for Australia, both for passengers and for freight."

Aviation is an economic driver and a social enabler for Australia. It creates jobs and underpins the future industries and communities which Australia needs. The need for both short and long-term actions is clear. The economic costs of inaction outweigh the costs and controversy of expanding airport capacity.



GROWTH INITIATIVES



NATIONAL

Throughout Australia, and in addition to the new Western Sydney Airport, major new aviation infrastructure is either under construction, committed for construction, or proposed, to accommodate significant long term growth in demand for air transport.

The largest of the projects currently underway is at the curfew-free Brisbane Airport, which has commenced the final stages of constructing a new parallel runway to double its aircraft movement capacity from 2020. This new runway will double Brisbane's runway capacity, allowing up to 100 movements per hour. Brisbane has also extended its international terminal, and has completed construction of new parking aprons for aircraft at both the domestic and international terminals.

Melbourne Airport, also curfew-free, is preparing to commence public consultation for construction of a third runway, to be operational by the early-2020s. This will also double Melbourne's runway capacity allowing up to 100 movements per hour.

The step increase in runway capacity at Brisbane and Melbourne in the next three to five years will leave Sydney as the bottleneck in the eastern seaboard triangle. These two airports intend to increase their runway capacity and so it would be beneficial for Sydney to increase its runway capacity between now and the opening of Western Sydney Airport.

Perth Airport is planning to construct an additional runway by the mid-2020s, Hobart recently extended its runway to accommodate long-range aircraft, Queensland's Sunshine Coast Airport has announced plans for a second runway to handle future international services, and Gold Coast Airport, in addition to expanding its terminal building, is preparing to install an instrument landing system (ILS) to enable operations into the airport during inclement weather, improving its efficiency.

All of these works will contribute substantially to a more efficient and capable national aviation network. But the national network still cannot function as it should without the corresponding expansion of Sydney's operating capacity.

While Sydney Airport has medium to long-term plans to expand its terminal and aircraft parking capacity, there is no opportunity to further expand its runways to accommodate additional traffic. To handle growth in passenger numbers, airlines are launching new routes, adding more seats to existing aircraft or introducing larger aircraft.

To ensure that Sydney Airport and the national aviation network can handle the growth that is coming our way, the operating restrictions at Sydney Airport must be updated to allow for productivity improvements using existing infrastructure.

ADELAIDE AIRPORT

Adelaide Airport has undertaken significant infrastructure upgrades to match record domestic and international passenger growth. Recent projects include expansion of short and long term car parking, expansion of aircraft parking, new control tower, better ground transport facilities, additional check-in space and security screening, and a new hotel due to open in September 2018 (Adelaide Airport's first hotel). Adelaide Airport is also planning a significant terminal expansion, which will in particular improve the customer experience for its international arrivals and departures.

BRISBANE AIRPORT

Brisbane Airport Corporation (BAC) is central to a wave of landmark investments, enhancements and developments across the south east corner which will usher in a new era for the region.

Since 2012 BAC has invested \$1.6 billion building critical airport infrastructure, with a further \$2.2 billion worth of facilities on track for delivery before 2021. This expansion of the airport's capacity will see passenger numbers more than double to nearly 50 million per annum by 2034. The new runway at Brisbane Airport, which will double its current capacity, road and terminal expansions, new apron and taxiways will all combine to enhance the airport's bid to be the preferred gateway to Australia for travellers from Asia, the Pacific and North America.

Through extensive and growing partnerships with the state and local governments, BAC is driving increased aviation connections into regional Queensland, ensuring its international passengers have easy access to the state's many regional tourism hotspots including the Tropical North, the Whitsundays and Central Queensland, the Outback and beyond. The combined efforts of neighbouring regions closer to home are also seeing the trade and tourism benefits delivered by the airport being spread across the Sunshine and Gold Coast regions, hinterland, Moreton, Logan and Darling Downs.

GOLD COAST AIRPORT

A terminal redevelopment and airport hotel are part of the Gold Coast Airport major project pipeline, with a string of developments earmarked for delivery in the next few years.

An \$86 million airside upgrade was recently completed at Gold Coast Airport, including a new apron area that will facilitate parking for up to four additional aircraft, and an extension of the taxiway network to improve efficiency.

This project paves the way for work to start later this year on the terminal redevelopment, which is part of Project LIFT. The major project will comprise construction of a new three-level terminal with provision for aerobridges and the redevelopment of the current terminal. Project LIFT, which represents a further \$300 million investment on top of the completed airside upgrade, will deliver a facility that is a fitting gateway to Australia's premier tourism destination.

Gold Coast Airport is delivering a wider property strategy focused on further developing the precinct and nearby land. Key to that strategy is the construction of a \$50 million onsite hotel project involving a 192-room hotel with a roof-top bar, resort-style swimming pool, restaurant and conference facilities. Work is expected to start on this project before the end of the year.

MELBOURNE AIRPORT

Melbourne Airport is currently reaching capacity on the current crossing runway system. Scheduled flight delays and cancellations are becoming increasingly frequent and recovery from delays is becoming more difficult to achieve.

Melbourne Airport is one of the busiest airports in the world without a parallel runway system. It is forecast to process 42 million travellers by 2023.

Typically, 55 per cent of all aircraft deployed on Australian domestic and narrow body short haul international routes cycle through Melbourne Airport every day.

Building a parallel runway system will benefit the traveller, aviation industry and the state and national economies. The new parallel runway system will provide the required capacity and access to Melbourne Airport and improve the reliability of the network for travellers and airlines, with up to 100 aircraft movements possible per hour for 95 per cent of the year.

By 2043, the new runway capacity will enable an additional 17.7 million travellers per annum and an additional 115,000 aircraft movements each year. This increased capacity becomes more important with Melbourne due to overtake Sydney as Australia's largest city within the next two decades.

Melbourne's new runway proposal is critical to it not becoming the bottleneck on capacity.

PERTH AIRPORT

Perth Airport recently completed a \$1 billion upgrade of its facilities including a new domestic pier, a dedicated terminal for regional and FIFO flights, an upgrade of its international terminal, and a project to install a CAT III standard ILS on its main runway. A second wave of development worth an estimated \$2.5 billion is now planned including a new parallel runway, a major expansion of the international terminal to meet the demands of growing international tourist numbers, and a new domestic pier to allow the consolidation of Qantas services into the main airport precinct. These projects are expected to deliver major efficiency gains for airlines while delivering a better customer experience for passengers.



SUMMARY

An efficient national aviation network is critically important for Australia, economically and socially.

Artificial and inflexible capacity constraints at Sydney Airport, the nation's largest airport, have also become the biggest impediment to efficiency, frequently exacerbating delays at the airport, which overflow into the national network.

The development of Western Sydney Airport is a welcome, if not much-delayed initiative, and will provide significant new aviation capacity to the Sydney region.

But the new airport is at least eight years from opening, and air traffic growth is continuing to surge, driven in large part by the boom in Australia's visitor economy, particularly the increase in arrivals from Asia, which accounts for seven of our 10 largest tourism markets.

The capacity crunch at Sydney Airport is already impacting Sydney, NSW and Australia, particularly on days of disruption when aircraft movements fall well below the approved ceiling of 80 flights per hour.

TTF Australia understands and fully supports the overnight curfew on flight operations at Sydney Airport.

However, we question the intensity and complexity of restrictions applied during the airport's operating hours, given the significant and continuing growth in demand for air travel, the demonstrated reduction in aircraft noise, and the critical importance of an efficient air transport system to both the national economy and our surging tourism market.

If Sydney and Australia are to keep pace with the growth in demand for air transport, and if the nation is to handle the surge in international air travellers which it has courted for decades, commonsense reforms are needed as a matter of priority to modernise the operating restrictions imposed on Sydney Airport.

This is no longer a Sydney issue. It is national. And it is urgent.



TOURISM &
TRANSPORT
FORUM

LEVEL 6
7 MACQUARIE PLACE
SYDNEY NSW 2000
T: +61 2 9240 2000
www.ttf.org.au

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