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Feature

The feature article in this issue of *Avline* looks at the evolution of the domestic aviation industry (including regional operations) over the past decade (1996–97 to 2005–06). It highlights the variation in aircraft and passenger traffic during this period and discusses how the operational profile has changed through the introduction of discount flights and more direct services to regional centres.

In brief

- Australia's domestic airline industry has continued to operate at high levels of patronage with more than 41.8 million passengers carried in the year ending June 2006, 5.8 per cent higher than the previous year (page 12).
- The major domestic airlines carried 36.9 million passengers, an increase of 6.4 per cent over the year ended June 2005. Regional airlines carried 4.9 million passengers, an increase of 1.0 per cent over the same period (page 12).
- During the year ended June 2006, the domestic industry recorded 531 388 flights. Of these, 286 682 were operated by the major domestic airlines, a decrease of 1.4 per cent on the previous year. The remaining 244 706 flights were operated by regional airlines, a decrease of 1.7 per cent over the same period (page 13).

- Domestic airline on-time performance averaged 87.0 per cent for on-time departures, 85.7 per cent for on-time arrivals and 1.0 per cent for cancellations (page 15).
- Passenger numbers continued to increase at all five major Australian airports but at a substantially reduced rate compared with the previous 12 months. Adelaide airport growth at 7.5 per cent was particularly strong in all sectors with Perth airport growth strong in the regional and domestic sectors (11.6 and 9.6 per cent respectively). Brisbane airport had strong growth of 11.7 per cent in regional passengers (page 16).

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NOTE: Some traffic levels presented in the current issue of Avline differ from those given in previous issues for the same time periods due to the receipt of additional information after the publication of the preceding issues.

Australia's domestic aviation industry in the past decade

Introduction

The past decade (1996–97 to 2005–06) has seen major events affecting both the Australian domestic and international aviation industry. This article focuses on the changes in the domestic aviation industry over this decade. All references to the domestic industry in this feature include regional operations.

The last ten years has witnessed a major restructuring of the domestic aviation environment. From a market initially dominated by the duopoly of Qantas and Ansett, the industry is now imbued with intense competition through the entry of several low cost carriers offering a greater number of non-stop services between metropolitan and regional centres.

The era of low-cost airline operations in Australia took off in mid 2000 when Impulse Airlines, a regional passenger and freight operator since 1992, introduced services between Sydney– Melbourne and later Sydney–Brisbane in direct competition with the two major carriers. Virgin Blue commenced operations around the same time (August 2000) as another airline offering discounted fares. Subsequently Regional Express, utilising the assets of the former Ansett subsidiaries Kendell and Hazelton Airlines, emerged in August 2002. In November 2001 Qantas acquired Impulse and later used it as a vehicle to launch Jetstar, its low-cost response to Virgin Blue, in May 2004.

September 2001 saw the most significant event to affect the domestic aviation industry throughout the decade—the collapse of Ansett. In the wake of Ansett's failure, the other airlines quickly stepped in to expand their domestic capacity through the acquisition of routes and services previously operated by Ansett. Virgin Blue, in particular, has grown rapidly to become Australia's second largest domestic carrier after Qantas.

The collapse of Ansett precipitated a sharp drop in domestic travel in the financial year 2001–02. Flow-on effects from the contraction of the global aviation industry following the 11 September 2001 terrorist attacks in the United States may also have contributed to the steep decline in domestic passenger movements for that year. Since then, however, domestic passenger traffic has climbed rapidly, reaching record levels at the end of the decade. This is despite major international events affecting international passenger numbers in the short-term such as the Bali bombings (2002), the Iraq War (since 2003) and the outbreak of SARS (Severe Acute Respiratory Syndrome, from late 2002). Increased competitiveness among the domestic airlines in the latter half of the decade has helped to drive fares down and offer more direct flights, thus encouraging greater travel within Australia.

The decade in summary

Since 1996–97 the domestic industry has sustained a continued long term increase in passenger traffic levels, punctuated only by a downturn following the collapse of Ansett.

For the ten years to June 2006, there were 5.5 million flights totalling 7.5 million hours over 3.8 billion kilometres. In total, 326 million passengers were carried with an available seat capacity of 444 million. Revenue passenger kilometres (RPKs) for the period were 344 billion with 451 billion available seat kilometres (ASKs), giving an average load factor (RPK/ASK) of 76.4 per cent (see Table 1).

Annual variations

Table 1 highlights annual changes in domestic aviation traffic over the past ten years starting from the financial year 1996–97. The variations in passenger and flight totals are shown in Figure 1.

At the start of this period, the domestic industry carried 27.9 million passengers on 584 480 flights (measured in departures) with a load factor of 72.5 per cent. By the middle of the decade (2000–01), prior to the collapse of Ansett, passenger numbers had risen by 18.5 per cent to 33.1 million while aircraft departures increased by 6.1 per cent to 620 338 flights.

In the year of Ansett's collapse (2001–02), the number of flights plunged to 488 696 which is 21.2 per cent lower compared with the previous financial year and 16.4 per cent lower than at the start of the decade. Passenger levels also dropped to 29.6 million which is 10.5 per cent lower than the 2000–01 figure, but still 6.1 per cent higher than the traffic for 1996–97.

Since then, domestic passenger traffic has climbed steadily and reached a new record of 41.8 million passengers in 2005–06, 41.3 per cent above the level recorded in the year of the Ansett collapse. The number of flights also increased by 8.7 per cent to 531 388 but still remains below the levels operating at the beginning of the decade.

In summary, by the end of the decade, passenger levels had risen by 49.9 per cent while total flights had decreased by 9.1 per cent. Despite the reduced number of flights, capacity in terms of available seats increased by 56.8 per cent over the decade due to an increase in the average aircraft size on the domestic network. The load factor also increased steadily from 72.5 per cent in 1996–97 to 77.7 per cent in 2005–06.

Table 1Domestic aviation traffic over the past decade

FY	Departures (thousand)	Passengers On Board (million)	Available Seats (million)	RPKs (billion)	ASKs (billion)	Load Factor (%)
1996–97	584.5	27.90	40.56	27.81	38.35	72.5
1997–98	581.9	28.30	40.06	28.32	38.24	74.1
1998–99	589.7	28.73	40.38	28.99	38.75	74.8
1999–00	589.6	30.33	41.59	30.77	40.30	76.3
2000-01	620.3	33.07	45.82	33.70	44.65	75.5
2001-02	488.7	29.60	40.14	31.15	40.50	76.9
2002-03	480.0	31.27	41.82	33.99	43.78	77.6
2003-04	496.2	35.48	46.04	39.21	49.70	78.9
2004–05	539.1	39.50	52.30	43.82	56.39	77.7
2005-06	531.4	41.82	55.33	46.69	60.12	77.7
TOTAL	5501.4	326.01	444.05	344.45	450.79	76.4





Transformation of routes flown

As described above, current domestic passenger traffic is one and a half times greater than the level in 1996–97, demonstrating considerable resilience and growth since the Ansett collapse. In addition, several other changes within the industry have occurred and the profile of activity in the domestic sector is now different to that of a decade ago. Several interacting factors are apparent, including:

- an increase in the average aircraft size
- the introduction of low cost carriers
- increased load factors
- and more direct flights.

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Melbourne-Sydney-Brisbane triangle

A comparison of the traffic along the Melbourne– Sydney–Brisbane triangle with all other domestic routes highlights one aspect of the changing operational scenario over the decade. The proportion of the domestic market carried on routes linking these three metropolitan cities peaked at 36.9 per cent in the year of the Ansett collapse (2001–02) but has since shown a gradual decline as more direct flights bypass the city hubs (Figure 2a). Conversely, there has been an increase in the total share along all other routes since 2001–02.

In 2005–06, the Melbourne–Sydney–Brisbane triangle accounted for just over a quarter (28.9 per cent) of Australian domestic passenger traffic. This was 3.1 percentage points lower than the share recorded in 1996–97 and 8.0 percentage points lower than the peak recorded in 2001–02.

During the decade to 2005–06, passenger traffic on all other routes increased by 56.7 per cent while the triangle routes only increased by 35.4 per cent (Figure 2b). Of these, Brisbane–Melbourne increased the greatest (53.0 per cent) while Melbourne–Sydney and Sydney–Brisbane increased by 35.9 per cent and 25.4 per cent respectively.

The Melbourne–Sydney route is the busiest sector of the triangle and is currently operating at record high levels. Both the Brisbane–Sydney and Brisbane–Melbourne routes, however, have shown a reduction in total domestic traffic since their highs in 2000–01 (-10.9 per cent) and 2003–04 (-5.3 per cent) respectively.

Figure 3 compares departures on the Melbourne-Sydney–Brisbane routes with all other Australian domestic routes. These show a similar pattern to passenger movements on the triangle with an increase to a maximum of 16.4 per cent of total domestic departures in 2001–02, falling to 15.7 per cent by 2005–06. Total flights on the triangle in 1996–97 were 70 600, reaching 99 223 in 2000–01 but dropping to 83 283 by 2005–06. This was a reduction of 16.1 per cent between 2000–01 and 2005–06. Flights on all other routes decreased by a similar 14.0 per cent in the same period despite the much greater passenger traffic, as shown in Figure 2b. An increase in the average aircraft size and higher load factors into the non-capital city destinations contribute the disparity between higher passenger to numbers but lower flight volume in the latter half of the decade.

Figure 2a Melbourne-Sydney-Brisbane triangle share of domestic passenger traffic 1996-97 to 2005-06



Financial Year









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More direct services

Figure 4 provides examples of the increase in traffic over the past decade on direct services between several example city pairs other than along the Melbourne–Sydney–Brisbane triangle. These are routes which, in the past, were likely to have been undertaken in several flight stages, beginning with flying into a major city and then transferring to a regional carrier for the final leg. For example Hervey Bay–Sydney in the past is likely to have been conducted as Hervey Bay–Brisbane then Brisbane–Sydney. The correlation between the start of a significant increase in such services directly after the collapse of Ansett can be readily seen.

Figure 4 Example growth in non Melbourne-Sydney-Brisbane triangle passenger traffic 1996-97 to 2005-06



Note: These routes are examples of those with high passenger numbers in 2005–06 and large percentage increases over the decade but are not meant to portray either the highest capacity routes or those showing the greatest increase.

Industry snapshot

International industry

International passengers

Passenger traffic on Australian international flights has remained at high levels over the past twelve months. Traffic peaked in January 2006, with a monthly record of 2.04 million passengers. In June 2006, 1.67 million passengers were carried—an increase of 2.6 per cent on June 2005 (Figure 5).

There were 21.3 million international passengers carried during the year ending June 2006—representing an increase of 3.1 per cent over the previous financial year. This total comprised 11.4 million overseas visitors (53.5 per cent) and 9.9 million Australian residents (46.5 per cent).

Growth in international passenger traffic for the year ending June 2006 was driven mainly by the increase in the number of Australian residents travelling on international flights (up 5.3 per cent) rather than overseas visitors (up 1.3 per cent for the same period). Most of this growth occurred in the first part of the year ending June 2006 (see Figure 5).



Figure 5 International passengers

Notes: Growth rates are calculated over the same month in the previous year. Source: ABS catalogue 3401.0, Overseas Arrivals and Departures, Australia.

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International flights

Over the past five years, international flight activity peaked in January 2005 with 10 337 flights (Figure 6). From January 2006 there has been a gradual decline in the number of flights with June 2006 showing 3.0 per cent less flights than June 2005.

The year ending June 2006 shows a 1.4 per cent growth on the previous financial year. This yearly rate of growth has been steadily declining since January 2005 when the yearly growth rate was 19.1 per cent.



Figure 6 International flights

 Notes:
 Growth rates are calculated over the same month in the previous year.

 Source:
 BTRE Aviation Statistics Section.

International network utilisation

Over the past five years, international airline capacity (measured in available seats) peaked at 2.64 million seats in January 2005 (Figure 7).

Seat utilisation (load factors) over all routes in the year to June 2006 reached a high of 78.5 per cent in January 2006 and averaged 71.3 per cent over the year.

International network utilisation

International air freight

Air freight carried on Australian international flights is shown in Figure 8.

In the past five years, freight levels peaked in October 2004 at 65 788 tonnes. Over the 12 months to June 2006 freight carried was greatest at 64 935 tonnes in March 2006. This total comprised 37 184 tonnes (57.3 per cent) inbound and 27 751 tonnes (42.7 per cent) outbound freight. The year ending June 2006 showed a 3.3 per cent growth in freight over the preceding financial year.

3 90 Available seats (millions) Seat utilisation (%) 85 Available seats (millions) Seat utilisation (%) 80 2 75 70 1 65 60 0 55 % change (available seats) 30 20 10 0 -10 -20 % change (seat utilisation) 20 10 0 -10 -20 Pec Month Notes: Available seats is a total of inbound and outbound seats (in millions). Seat utilisation is an average of inbound and outbound seat utilisation (%). Growth rates are calculated over the same month in the previous year.

Figure 7

Source:

BTRE Aviation Statistics Section.

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Inbound air freight has exceeded outbound air freight since June 2003. The 426 462 tonnes of inbound freight carried over the year ending June 2006 was 5.8 per cent higher than to June 2005, while the 299 336 tonnes of outbound freight for the year ending June 2006 represented a marginal decrease over the preceding year.

As shown in Table 2, Qantas carried the greatest share (26.6 per cent) of freight during the year ending June 2006, followed by Singapore Airlines (15.3 per cent) and Cathay Pacific (8.8 per cent).

The Sydney-Auckland route retained the largest share (8.4 per cent) of total freight between city pairs, followed by Melbourne-Singapore (7.4 per cent) and Sydney-Hong Kong (6.0 per cent) (Table 3).

Table 2 Freight carried by top 5 airlines Year ended June 2006

Table 3	Freight carried on top 5 city pairs,
	Year ended June 2006

Airline	Tonnes carried (thousands)	Share	Australian port	Foreign port	Tonnes carried (thousands)	Share
Qantas Airways	192.8	26.6%	Sydney	Auckland	61.3	8.4%
Singapore Airlines	110.9	15.3%	Melbourne	Singapore	53.6	7.4%
Cathay Pacific Airways	63.6	8.8%	Sydney	Hong Kong	43.8	6.0%
Emirates	62.6	8.6%	Sydney	Singapore	35.8	4.9%
Air New Zealand	42.2	5.8%	Melbourne	Auckland	33.6	4.6%
Others	253.7	35.0%	Others		497.6	68.6%
Total	725.8	100.0%	Total		725.8	100.0%

BTRE Aviation Statistics Section Source:

Source BTRE Aviation Statistics Section





Note Growth rates are calculated over the same month in the previous year. Source: BTRE Aviation Statistics Section.

Domestic industry

Domestic passengers

Australia's domestic airline industry has continued to operate at high levels. During the twelve months to June 2006, a record 41.8 million passengers were carried—representing an increase of 5.8 per cent over the twelve months to June 2005. Over the past five years passenger numbers peaked at 3.7 million in October 2005, 5.6 per cent higher than October 2004 (Figure 9).

The major domestic airlines carried 36.9 million passengers (88.2 per cent of the total) for the year ending June 2006. This represented an increase of 6.4 per cent over the 34.6 million passengers carried in the 12 months to June 2005. Regional airline passengers numbered 4.9 million over the same period (constituting 11.8 per cent of the total). This represented an increase of 1.0 per cent over the corresponding 12 months to June 2005.





Growth rates are calculated over the same month in the previous year. Source: BTRE Aviation Statistics Section.

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Domestic flights

Figure 10 shows the number of flights (measured in departures) operated by the domestic industry.

During the past year, monthly flights peaked at 46 988 in August 2005. This was 7.2 per cent lower than the 50 611 flights operated in August 2001 (immediately prior to the Ansett collapse), but 17.3 per cent higher than August 2003 and 2.5 per cent higher than August 2004.

For the year ending June 2006, 531 388 flights were recorded. This represents a decrease of 1.4 per cent on the year ending June 2005.

Of these, 286 682 were operated by the major domestic airlines, a decrease of 1.2 per cent on the number of flights operated in the 12 months to June 2005. The remaining 244 706 flights were operated by regional airlines, a decrease of 1.7 per cent on the number of flights operated in the year ending June 2005.



Figure 10 Domestic and regional flights

Notes: Regional data component includes BTRE estimates. Growth rates are calculated over the same month in the previous year. Source: BTRE Aviation Statistics Section.

Domestic network utilisation

Domestic industry capacity, measured in Available Seat Kilometres (ASKs), achieved a record of 5.23 billion ASKs in May 2006, 30.0 per cent higher than the peak achieved in July 2001, before the collapse of Ansett (Figure 11).

Revenue Passenger Kilometres (RPKs), however, peaked in October 2005 with a record 4.14 billion. This was 34.2 per cent higher than July 2001. As load factors have not increased to the same extent, this indicates an increasing number of passengers being carried on longer-haul direct services.

Load factor (%)





Notes: Includes all regional operations. ASKs refers to Available Seat Kilometres. RPKs refers to Revenue Passenger Kilometres. Growth rates are calculated over the same month in the previous year.
 Source: BTRE Aviation Statistics Section.

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For the year ending June 2006, both RPKs and ASKs were 6.6 per cent higher than the same period in 2005.

Over the twelve months to June 2006, load factors were highest in October 2005 at 81.0 per cent, with an average of 77.7 per cent.

Domestic airline on-time performance

The reporting of on-time performance data to the BTRE commenced in November 2003. The data covers all services operated by Australia's major airlines: Jetstar; Qantas; QantasLink; Regional Express; Skywest Airlines; Virgin Blue; and Macair (from July 2005). Ozjet data was also included from January to March 2006. These operators collectively carry over 95 per cent of Australia's airline traffic.

For the year ending June 2006, 453 406 flights were reported, of which 394 559 (87.0 per cent) departed on time and 388 348 (85.7 per cent) arrived on time. Cancellations averaged 1.0 per cent of all scheduled flights (Table 4).

The best on-time performance for departures was recorded in February, with 90.1 per cent and for arrivals in March with 88.6 per cent. The lowest percentage of cancellations was recorded in August and September, with 0.7 per cent of scheduled flights cancelled (Figure 12).

The lowest level of on-time performance was recorded in June, during winter. In June, 82.9 per cent of departures and 81.4 per cent of arrivals were on time. The highest percentage of cancellations was also recorded in June, with 1.7 per cent of scheduled flights cancelled.

Both Regional Express and Virgin Blue achieved the highest levels of on-time departures (89.4 per cent) in the year ending June 2006 (Table 4). Virgin Blue also had the best on-time arrival performance (88.7 per cent), with Qantas (85.9 per cent) and Regional Express (85.3 per cent) not far behind. With regards to cancellations, Skywest (2.8 per cent) and Macair (2.2 per cent) recorded the highest levels for the year, whereas Regional Express (0.2 per cent) outperformed the rest.



Figure 12 Domestic Airline on-time performance

Table 4Australian on-time performance by airline, year ending June 2006

	Jetstar	Macair	Qantas	Qantas Link	Regional Express	Skywest	Virgin Blue	All Airlines
Sectors Scheduled	46 505	16 607	119 305	97 292	59 396	11 907	106 416	457 817
Sectors Flown	46 266	16 241	117 955	96 199	59 258	11 575	105 533	453 406
On Time Departures	39 672	13 692	100 990	82 461	52 979	10 148	94 320	394 559
On Time Arrivals	39 264	13 482	101 323	80 084	50 545	9 734	93 654	388 348
Cancellations	239	366	1 350	1 093	138	332	883	4 411
OnTime Departures (%)	85.7%	84.3%	85.6%	85.7%	89.4%	87.7%	89.4%	87.0%
OnTime Arrivals (%)	84.9%	83.0%	85.9%	83.2%	85.3%	84.1%	88.7%	85.7%
Cancellations (%)	0.5%	2.2%	1.1%	1.1%	0.2%	2.8%	0.8%	1.0%

Notes: On time departures refer to flights that depart within 15 minutes of the scheduled departure time. On time arrivals refer to flights that arrive within 15 minutes of the scheduled arrival time.

Cancellations refer to flights cancelled or rescheduled within 7 days of the scheduled departure time. Source: BTRE Aviation Statistics Section

Airport activity

Airport activity levels

Table 5 summarises passenger and aircraft movements at the five major Australian airports for the last three financial years.

For the year ending June 2006, Adelaide Airport recorded the strongest growth in passenger movements at 7.5 per cent, followed by Perth (7.4 per cent), Brisbane (4.3 per cent), Sydney (3.7 per cent) and Melbourne (2.3 per cent). All these airports grew at a substantially lower rate than in the previous financial year.

In terms of total scheduled aircraft movements only, Perth Airport grew by 1.4 per cent in 2005–06 while the other four airports registered a drop, with the greatest decline of 3.1 per cent occurring at Melbourne Airport.

Adelaide Airport showed strong growth in all sectors in 2005–06 with increases of 9.2 per cent in international passengers, 7.3 per cent in domestic passengers and 8.8 per cent in regional passengers. Increases in regional traffic were also strong in Brisbane (11.7 per cent) and Perth (11.6 per cent), with Perth domestic traffic also increasing by 9.6 per cent.

Table 5Activity at major Australian airports

		Passen	ger moveme	nts (million)			,	Aircraft mo	vements (the	ousand)	
Airport	YE June	Inter- national	Domestic	Regional	Total	Inter- national	Domestic	Regional	Total scheduled	Non- scheduled	Total*
Sydney	2006	9.7	17.5	1.8	29.0	58.6	124.2	72.6	255.4	26.0	281.4
	2005	9.3	16.8	1.8	28.0	57.9	124.9	74.8	257.6	23.8	281.4
	2004	8.6	15.8	1.7	26.1	53.1	114.5	74.3	241.8	26.4	268.2
Melbourne	2006	4.3	16.2	0.6	21.0	25.2	118.6	26.8	170.7	8.9	179.6
	2005	4.1	15.5	0.6	20.3	27.7	122.1	26.2	176.1	4.1	180.2
	2004	3.6	14.5	0.5	18.6	23.6	109.2	24.7	157.5	7.4	165.1
Brisbane	2006	3.6	11.6	0.7	16.0	22.3	90.7	25.8	138.8	26.5	165.3
	2005	3.5	11.2	0.6	15.4	22.3	93.0	24.7	140.0	21.8	161.8
	2004	2.9	10.2	0.6	13.8	18.5	82.4	23.0	123.9	22.8	146.7
Perth	2006	2.0	4.7	0.4	7.0	10.2	34.5	12.5	57.2	42.4	99.6
	2005	1.9	4.3	0.3	6.5	10.4	34.5	11.5	56.4	43.8	100.2
	2004	1.7	3.9	0.2	5.9	9.2	33.5	8.5	51.2	43.8	95.0
Adelaide	2006	0.3	5.0	0.4	5.8	2.5	41.9	25.3	69.7	32.6	102.2
	2005	0.3	4.7	0.4	5.4	2.2	40.4	28.1	70.7	36.3	107.0
	2004	0.3	4.3	0.3	4.9	1.9	37.2	28.0	67.1	35.3	102.4

Notes: International passenger data are the total passengers uplifted and discharged within a flight. This data is provisional. Domestic and regional passenger data are the total passengers on board (POB) by flight stage. The regional component is provisional and includes

BTRE estimates.

International, domestic and regional data represents Regular Public Transport operations.

Non-scheduled aircraft movements include military aircraft.

*Aircraft movements recorded during the hours in which Airservices Australia provides a tower service.

Sources: BTRE Aviation Statistics Section and Airservices Australia monthly aircraft movement reports (http://www.airservicesaustralia.com).

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30 000

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March 2006 was the busiest month for Sydney Airport over the past financial year, with 23 678 aircraft movements, an increase of 1.9 per cent on March 2005 (Figure 13). Noise complaints also peaked in March with 929 complaints. This is significantly higher than any other month in that year and also the greatest number recorded since October 2001.

For the twelve months ending June 2006, noise complaints totalled 6 080, an increase of 44.3 per cent over the previous twelve months. However, over the same period, there were 274 511 aircraft movements, an increase of only 0.9 per cent on the previous twelve months.

Figure 13 (inset) focuses on the period from December 2001 to June 2006 where the total number of noise complaints are substantially lower than the period preceding the Ansett collapse.



Figure 13 Noise complaints: Sydney Airport

Noise complaints

Sources: Airservices Australia, monthly Sydney Airport Operational Statistics.

Economic indicators

Real domestic air fares

Figure 14 presents the real domestic air fares indexes for Business Class, Full Economy, Restricted Economy and Best Discount air fares, showing 13 month moving averages. The real domestic air fares indexes include those taxes and charges that are collected as part of the airfare (fuel levies, security, certain airport charges and GST). The indexes provide a measure of changes in real terms to air fares over time.

Prior to July 2003, the indexes were constructed using SABRE Pacific's Computer Reservations System. Indexes for July 2003 onwards are based on airfares collected from the BTRE Internet air fare survey. All indexes are Consumer Price Index (CPI) adjusted and set at a base value of 100 for July 2003.

From *Avline 7* onwards, the calculation methodology used is the Fisher Ideal Index. Prior to issue 7, the Laspeyres Index was used. For more information on price indexes see ABS Catalogue 1351.0 Working Paper no. 96/1 *Choosing a Price Index Formula*.

Since July 2003, Restricted Economy fares were highest in January 2005 with an index of 106.6. These fares are now at their lowest since collection of this type of fare began in March 2002. April 2006 reached a record low of 92.9, 9.5 per cent lower than April 2005.

Business Class fares were highest in June 2005 with an index of 107.6. By February 2006, these had dropped to 95.3. By June 2006 these fares were 8.6% lower than June 2005.

Best Discount fares have dropped the most since July 2003. The Best Discount Fares Index achieved a low of 83.1 in August 2004. However by June 2006 these had risen to 91.1 which is an 8.6 per cent increase on June 2005.

Full Economy fares have risen by 2.4 per cent over the twelve months to June 2006.



Figure 14 Real domestic airfares

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Jet fuel prices

Aviation jet fuel costs have continued an upward trend following high world-wide oil prices. By June 2006, the Jet Fuel Price Index rose to 232 (Australian dollars base value of 100 at January 2000). This was 26.7 per cent higher than in June 2005 and 83.1 per cent higher than in June 2004 (Figure 15).

The Jet Fuel Price Index (US dollars) was highest at 273 in May 2006, an increase of 37.9 per cent on May 2005 and 88.8 per cent on May 2004.

Airline share prices

Figure 16 shows the end of month closing prices for Qantas, Virgin Blue and the S&P/ASX 200 Index up to June 2006.

At 30 June 2006, Virgin Blue's share price was \$1.51, 20.5 per cent lower than its 12 month end of month high of \$1.90 in March 2006.

At 30 June 2006, Qantas' share price was \$2.96, 28.3 per cent lower than its 12 month end of month high of \$4.13 in January 2006.

Qantas' net earnings dropped by 30.4 per cent to \$479.5 million for the year ending June 2006 compared with \$688.5 million in the previous financial year.



Sources: BTRE analysis using ICIS-LOR fuel prices (cited in Airline Business) and Reserve Bank of Australia, Bulletin Statistical Table 11, Exchange Rates.



Figure 16 Airline share prices

Note:
 Share prices are monthly closes.

 Sources:
 Share prices: GS JB Were, ASX, Australian Financial Review.

Virgin Blue reported a net profit after tax of \$84.5 million for the 9 months ending June 2006, 12.8% up on the previous corresponding period.

Gross Domestic Product

Figure 17 shows indexes based on Australia's Gross Domestic Product (GDP), comparing all industries with the air and space industry component up to June 2006.

The air and space industry showed strong growth over the year, with the Air and Space Index peaking in the June quarter 2006 at 193.8. This was up 6.2 per cent over the previous June quarter. The Total GDP Index also peaked in the June 2006 quarter at 153.8, but grew at a lower rate of 1.9 per cent.



Notes:Growth rates are calculated over the same quarter in the previous year.Source:ABS Catalogue No. 5206.0, Australian National Accounts: National Income, Expenditure and Product, Table 16.

Airport charges

Airport charges data estimates what an airline may expect to pay, based on publicly available information published by airport authorities and Airservices Australia. The data shown includes GST, but excludes confidential agreements between airports and airlines, and terminal charges for domestic and regional services, which are often confidential and may differ by terminal and airline.

The data should be interpreted with caution as actual rates may vary for individual aircraft operators based on negotiated contracts.

Charges for five state capital city airports and ten regional airports are presented below. The parameters used by the BTRE in its airport charges calculations are summarised in Table 6. The aircraft types shown are representative of international, trunk route domestic, and large, medium and smaller regional routes.

State capital city airports

Table 7 shows the real charges incurred by aircraft operators per return passenger (assuming one arrival and one departure) at Australia's major capital city airports as at 31 July 2005, 31 Jan 2006 and 31 July 2006 (in September 2006 quarter dollars). The charges are presented by category of aircraft and are broken down into airport, Airservices Australia and security components.

International transit and transfer passengers at Sydney and Brisbane airports do not incur the international terminal charge. In order to exclude these passengers from the international terminal charge calculation at these airports, the BTRE has assumed that transit and transfer passengers comprise 10 per cent of international passengers.

All five airports set security charges on a costrecovery basis. If significant over or under recovery occurs in a period, security charges are reduced or increased respectively in the subsequent period, which may result in period to period variations in total charges.

Over the six months between January and July 2006, total international airport charges varied from a drop of 2.2 per cent at Brisbane Airport to an increase of 10.4 per cent at Adelaide. Adelaide showed the most notable change due to the introduction of a provisional Passenger Facilitation Charge. Security charges for international flights decreased across all five airports for this period, with Adelaide Airport showing the steepest reduction (73.2 per cent) due to the use of a common user terminal, as opposed to the previous dedicated international terminal.

Total charges for domestic and regional flights decreased at all airports—with the exception of Adelaide where pricing per passenger rose substantially due to the transition of charging on a per passenger basis. This is particularly evident in the domestic sector with the introduction of a Passenger Facilitation Charge.

Over the twelve months between July 2005 and July 2006, total charges increased for all categories of aircraft at Melbourne and Adelaide Airports. Brisbane and Perth Airport charges only increased in the International category. Relative changes in pricing varied considerably across aircraft categories, airports and category of charge.

Real airport charges for the international, domestic and regional sectors are also shown in Figures 18, 19 and 20 respectively. These are based on aircraft considered representative of each sector and show data by airport from July 2003 to July 2006.

Table 6 Parameters used in airport charge calculations

Aircraft type	Operational sector (typical)	Aircraft maximum take -off weight (tonnes)	Number of aircraft seats (nominal)	Average passenger load factor (%)
747-438	International	394.6	394	72.0
737-800	Domestic	79.0	158	76.5
Dash 8-300	Regional	18.6	50	60.0
SAAB 340B	Regional	13.2	34	60.0
Metro 23	Regional	7.5	19	60.0

Notes: The load factor is the proportion of total aircraft seats that are filled by paying passengers.

Aircraft load factors are derived from BTRE Aviation Statistics Section data collections for the relevant operational sector and may not reflect actual load factors at specific airports.

Sources: Civil Aviation Safety Authority (CASA) aircraft register and BTRE aviation databases and assumptions.

Table 7 Real airport charges (per return passenger) by aircraft type

	9	Sydney		м	elbourne		E	Brisbane			Perth		A	delaide	
Aircraft	Jul–05	Jan-06	Jul–06	Jul–05	Jan-06	Jul–06	Jul–05	Jan-06	Jul-06	Jul–05	Jan-06	Jul-06	Jul–05	Jan-06	Jul–06
747-438															
Airport	32.24	31.79	32.26	24.74	24.40	24.46	21.02	20.73	21.13	23.63	22.89	23.24	25.19	25.22	41.90
Airservices	9.33	11.18	11.03	8.43	10.25	10.77	10.97	13.29	13.09	16.44	19.18	18.92	21.37	29.39	28.80
Security	7.07	9.56	8.42	3.53	3.66	3.41	7.73	7.63	6.49	6.15	6.91	5.91	7.48	12.49	3.35
Total	48.64	52.53	51.71	36.70	38.31	38.64	39.72	41.65	40.71	46.22	48.98	48.07	54.04	67.10	74.05
737-800															
Airport	6.71	6.72	6.00	7.53	7.42	7.44	6.92	6.83	6.99	8.60	8.48	8.27	8.83	8.71	20.86
Airservices	4.38	4.89	4.80	3.96	4.15	4.37	5.16	5.12	5.03	7.73	7.06	6.92	10.04	9.15	8.96
Security	2.56	3.10	2.64	0.34	0.51	0.11	0.62	0.61	0.01	3.92	5.24	3.14	0.75	0.74	3.35
Total	13.65	14.71	13.44	11.83	12.08	11.92	12.70	12.56	12.03	20.25	20.78	18.33	19.62	18.60	33.17
Dash 8-300															
Airport	6.71	6.72	6.00	7.53	7.42	7.44	6.57	6.48	6.63	8.60	8.48	8.27	3.77	3.72	2.80
Airservices	4.16	4.61	4.53	3.76	3.88	4.09	4.89	4.77	4.69	7.33	6.55	6.42	9.52	8.33	8.16
Security	2.56	3.10	2.64	0.34	0.51	0.11	0.59	0.58	0.01	3.92	5.24	3.14	0.00	0.00	3.35
Total	13.43	14.43	13.17	11.63	11.81	11.64	12.05	11.83	11.33	19.85	20.27	17.83	13.29	12.05	14.31
SAAB340B															
Airport	6.71	6.72	6.00	7.53	7.42	7.44	6.83	6.74	6.89	8.60	8.48	8.27	3.92	3.87	2.80
Airservices	4.20	4.79	4.71	3.70	4.04	4.26	4.89	4.96	4.88	7.39	6.81	6.68	9.46	8.67	8.49
Security	2.56	3.10	2.64	0.34	0.51	0.11	0.61	0.60	0.01	3.92	5.24	3.14	0.00	0.00	3.35
Total	13.47	14.61	13.35	11.57	11.97	11.81	12.33	12.30	11.78	19.91	20.53	18.09	13.38	12.54	14.64
Metro 23															
Airport	8.27	8.16	7.96	7.53	7.42	7.44	6.97	6.87	7.03	8.60	8.48	8.27	4.00	3.94	2.80
Airservices	4.28	4.89	4.80	3.77	4.12	4.34	4.98	5.06	4.97	7.54	6.95	6.82	9.66	8.84	8.66
Security	2.16	2.71	2.64	0.34	0.51	0.11	0.62	0.61	0.01	3.92	5.24	3.14	0.00	0.00	3.35
Total	14.71	15.76	15.40	11.64	12.05	11.89	12.57	12.54	12.01	20.06	20.67	18.23	13.66	12.78	14.81

Notes: Presented in September 2006 quarter dollars.

Calculated on a return passenger basis, that is, assuming one arrival and one departure, for price schedules as at 31 January and 31 July each year.

A portion of security charges may apply to passengers going through airport-operated terminals only. Sydney and Brisbane international charges (airport and security components) have been adjusted to exclude transit and transfer passengers Sources: BTRE estimates based on airport public price schedules supplied by airport operators, Airservices Australia published price schedule and ABS Catalogue 6401.0, Consumer Price Index, Australia, September 2006.



Figure 18 Real airport charges for indicative international aircraft (per return passenger)



and security components) have been adjusted to exclude transit and transfer passengers. Sources: BTRE estimates based on airport public price schedules supplied by airport operators, Airservices Australia published price schedule and ABS Catalogue 6401.0, Consumer Price Index, Australia, September 2006.

Figure 19 Real airport charges for indicative domestic aircraft (per return passenger)



Notes: This graph shows total airport charges (GST inclusive) in September 2006 quarter dollars for a 737-800 as representative of domestic flights. Charge calculations are based on BTRE assumptions and may differ from actual charges incurred by specific operators. Domestic charge estimates exclude terminal charges. Sydney charges exclude the noise charge. An indicative domestic load factor of 76.5 per cent is assumed.

Sources: BTRE estimates based on airport public price schedules supplied by airport operators, Airservices Australia published price schedule and ABS Catalogue 6401.0, Consumer Price Index, Australia, September 2006.



Figure 20 Real airport charges for indicative regional aircraft (per return passenger)

Regional airports

This issue of Avline includes, for the first time, information on airport charges at selected regional airports. This section will be a continuing feature of Avline and is designed to provide a wider picture of airport charges across Australia compared with previous issues. The regional airports chosen were those serviced by predominantly non-jet aircraft and were selected in order of the highest number of passengers for the year 2005–06. The airport charges as at 31 July 2006 for the top ten regional airports which satisfied this criteria are listed in Table 8 and shown in Figure 21.

There is no security component in the total charge for the regional airports. Landing charges are only incurred at Armidale, Gladstone, Mildura, Port Lincoln and Port Macquarie, while Airservices Australia charges only apply at Albury and Tamworth Airports.

Figure 21 shows that Port Lincoln and Wagga Wagga Airports have the lowest charges, whereas Tamworth and Albury Airports were at the high end of the scale, the latter two boosted primarily by the inclusion of an Airservices Australia charge.

For Armidale Airport the total airport charge is relatively high as shown in Figure 21 because the maximum fee per arriving and per departing passenger was employed in the calculations as described in the footnote of Table 8. Here the fees vary according to whether the passenger fare is above or below a set amount. If the minimum passenger fee was used instead, the total airport charge for Armidale would drop significantly and be comparable to that of Mildura Airport.

Similarly at Wagga Wagga Airport there is a sliding scale of passenger charges as an incentive to attract more visitors to the city. The varying charges are listed in the footnote of Table 8. For the purpose of this analysis the maximum passenger fee was used. Even so the total airport charge at Wagga Wagga remains one of the lowest of the top ten regional airports.

Table 8Airport charges (per return passenger) for the top ten non-jet airports (July 2006)

	Albury	Armidale ^(a)	Burnie	Dubbo	Gladstone	Mildura	Port Lincoln	Port Macquarie	Tamworth	Wagga Wagga ^(b)
Airport	28.40	32.15	24.20	24.00	21.54	21.96	19.84	31.59	27.50	20.30
Airservices	6.76	n/a*	n/a	n/a	n/a	n/a	n/a	n/a	6.76	n/a
Total	35.16	32.15	24.20	24.00	21.54	21.96	19.84	31.59	34.26	20.30

Notes: All charges are GST inclusive.

Terminal charges were excluded and where a landing fee applied (Armidale, Gladstone, Mildura, Port Lincoln and Port Macquarie), the component towards the total charge was calculated by assuming a SAAB340B aircraft with an indicative regional load factor of 60.0 per cent as representative of regional flights. There are no security charges and Airservices charges apply only at Albury and Tamworth Airports.

Charge calculations are based on BTRE assumptions and may differ from actual charges incurred by specific operators.

(a) For Armidale Airport the passenger component was calculated by using the maximum charge of \$14.30 (GST incl.) per arriving and per departing passenger. This charge applied for full ticket costs at or above \$150. A lesser charge of \$9.35 (GST incl.) for tickets below \$150 was not used in the calculations.

(b) For Wagga Wagga Airport the passenger component was calculated by using the maximum charge of \$10.15 (GST incl.) per arriving and per departing passenger. This charge applied to passenger numbers below 70562. Reduced rates consisting of a \$2.54 (GST incl.) charge for passenger totals between 70562 and 80640 and \$1.01 (GST incl.) for over 80640 passengers were not included in the calculations.

*not applicable





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Notes: This graph shows total airport charges (GST inclusive) and the components that make up the charge for the top ten regional airports as determined from total passenger numbers for 2005–06 which are serviced by predominantly non-jet aircraft. Where a landing fee applied (Armidale, Cladstone, Mildura, Port Lincoln and Port Macquarie), the component towards the total airport charge per return passenger was calculated by assuming a SAAB340B aircraft with an indicative regional load factor of 60.0 per cent as representative of regional flights. There are no security charges and Airservices charges apply only at Albury and Tamworth Airports. Terminal charges are excluded. Charge calculations are based on BTRE assumptions and may differ from actual charges incurred by specific operators.

Sources: BTRE estimates are based on airport public price schedules supplied by airport operators, Airservices Australia published price schedule.

Definitions

ABS	Australian Bureau of Statistics.
Available seats	The number of aircraft seats available for passenger use.
Available Seat Kilometres (ASKs)	Calculated by multiplying the number of seats available on each flight stage, by the distance in kilometres between the ports. The distances used are Great Circle Distances.
BTRE	Bureau of Transport and Regional Economics.
Cancellation	A flight that is cancelled or rescheduled within seven days of its scheduled departure time.
CASA	Civil Aviation Safety Authority.
City pair	The ports shown make up the city pair route. Passenger movements shown for a city pair reflect total traffic in both directions.
Domestic airline	An airline performing regular public transport services primarily between capital cities and major tourist centres.
Flight stage	The operation of an aircraft from take-off to landing.
Great circle distance	The shortest distance between any two points on the globe as measured over the earth's surface.
Load factor	The proportion of total aircraft seats that are filled by paying passengers.
On time arrival	A flight arrival that arrives at the gate within 15 minutes of the scheduled arrival time shown in the carrier's schedule.
On time departure	A flight departure that departs the gate within 15 minutes of the scheduled departure time shown in the carrier's schedule.
On time performance	Measured as the number of flights operating on time as a percentage of the number of flights operated on any particular sector.
Regional airline	An airline performing regular public transport services primarily to regional centres.
Revenue Passengers	All passengers paying any fare. Frequent flyer redemption travellers are regarded as revenue passengers.
Revenue Passenger Kilometres (RPKs)	Calculated by multiplying the number of revenue passengers travelling on each flight stage, by the distance in kilometres between the ports. The distances used are Great Circle Distances.
Regular Public Transport (RPT)	Aircraft transport available to the public and operated to fixed schedules and between specified fixed terminals.
Short-term resident arrivals	Overseas visitors arriving in Australia for stays of up to 12 months.
Short-term visitor departures	Australian residents departing for periods of up to 12 months.



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Professor Werner Rothengatter is Head of the Institute of Economic Policy Research and the Unit of Transport and Communication at the University of Karlsruhe, Germany. Widely published in areas including transport infrastructure investment, pricing, funding and evaluation, Professor Rothengatter is the author of six books and more than 100 articles, including, with Bent Flyvbjerg and Nils Bruzelius, *Megaprojects and Risk* (Cambridge, 2003). He is president of the World Conference on Transport Research.

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contact

e-mail / telephone / fax / post

For further information on this publication please contactDonna Pereratel: (61 2) 6274 6080Paul Hallidaytel: (61 2) 6274 6797

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