



AIRSERVICES AUSTRALIA



**NOISE AND FLIGHT PATH MONITORING SYSTEM**

**CAIRNS QUARTERLY REPORT**

**JANUARY-MARCH 2010**



## Executive Summary

Airservices Australia has established a Noise and Flight Path Monitoring System (NFPMS) at Australia's major airports. Operated from a single control centre, the system monitors aircraft operations and their environmental effects at airports across the Australian continent. This report contains a summary of data collected by the Cairns component of the NFPMS for the first quarter (January to March) of 2010.

Since the issue of the previous quarterly report (4<sup>th</sup> Quarter 2009), the NFPMS has undergone an upgrade. The following report presents results from the upgraded system.

During quarter one the Cairns NFPMS detected 9,396 arrivals and 9,288 departures, a total of 18,684 movements, which is less than 8.6 % of the average over the previous 12 months (4 quarters). 65.5 % of the arrivals and 66.9 % of departures used runway 15. The total number of movements for the quarter is a decrease of 939 movements compared to the same quarter of the previous year.

The noise monitors at Yorkeys Knob, Holloways Beach and Cairns North detected a total of 16894 aircraft noise events above 70dB(A) for quarter 1 of 2010. The breakdown of these reveal an increase (comparative to the previous 12 months) of approximately 13.5% for the most northern monitor and an increase of 2.94% for the monitor to the south of the airport. The noise levels for individual aircraft types detected at the monitors were approximately the same (that is within 1 standard deviation) as those recorded over the last 5 quarters. The noisiest aircraft during this quarter was the Boeing 747-400; 92.6 dB(A) at Cairns North, 91.6dB(A) at Holloways Beach and 81.1dB(A) at Yorkeys Knob.

**On 29/7/10 minor amendments were made to the report in Appendix D as a result of data validation checks following the commissioning of the upgraded NFPMS.**

### DISCLAIMER

*This report contains a summary of data collected over the specified period and is intended to convey the best information available from the NFPMS at the time. The system databases are to some extent dependent upon external sources and errors may occur. All care is taken in preparation of the report but its complete accuracy can not be guaranteed. Airservices Australia does not accept any legal liability for any losses arising from reliance upon data in this report which may be found to be inaccurate.*



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## GLOSSARY OF TERMS

A:	Arrivals
AA:	Airservices Australia
AMSL:	Above means sea level
CNE:	Correlated noise events - noise events which are correlated with aircraft movements
CNE <sub>all</sub> :	All correlated noise events
CNE <sub>70</sub> :	Only correlated noise events equal to or greater than 70 dB(A)
D:	Departures
H:	Helicopters
I:	Indeterminate
W:	Water
JET:	Jet aircraft
LAeq:	Time average A-weighted sound pressure level
Movement:	An aircraft operation, such as a take-off or landing
N70:	Average daily number of correlated noise events equal to or greater than 70 dB(A)
N80:	Average daily number of correlated noise events equal to or greater than 80 dB(A)

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N90: Average daily number of correlated noise events equal to or greater than 90 dB(A)

NFPMS: Noise and Flight Path Monitoring System

NMT: Noise Monitoring Terminal

Noise Event: A noise exceeding the threshold sound pressure level for longer than the threshold duration

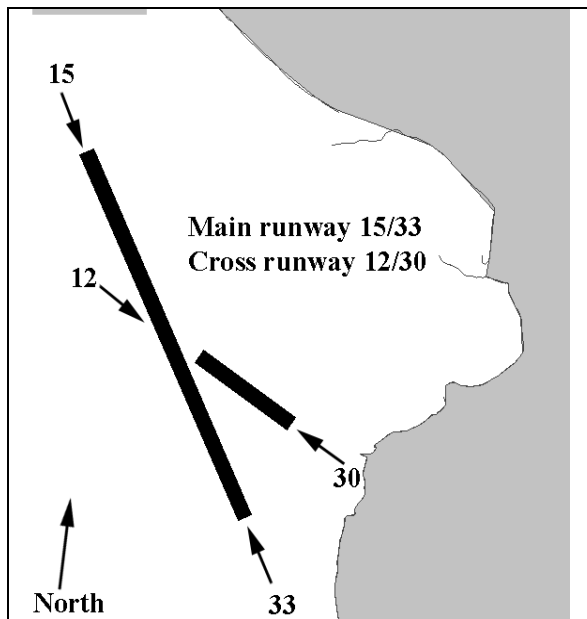
NON-JET: Non-jet aircraft

RNP: Required Navigation Performance

RUNWAY:

Runway on which the aircraft operates.

The runways at Cairns Airport are numbered 15/33 (the main runway), and 12/30 (the cross-runway).



T: Total

TAAATS: The Australian Advanced Air Traffic System

TYPE: Aircraft type

## 1. INTRODUCTION

Under its environmental responsibilities, Airservices Australia (AA) has established a Noise and Flight Path Monitoring System (NFPMS) at Australia's major airports. An overview of the NFPMS is shown in Appendix A. A map displaying all noise and flight path monitoring locations in Australia is shown in Figure 1.

This report is a summary of data collected by the Cairns segment of the system over the first quarter (January to March) 2010. The data used within this report has been obtained from an upgraded NFPMS system. As a result, some slight changes to the presented graphics may exist.

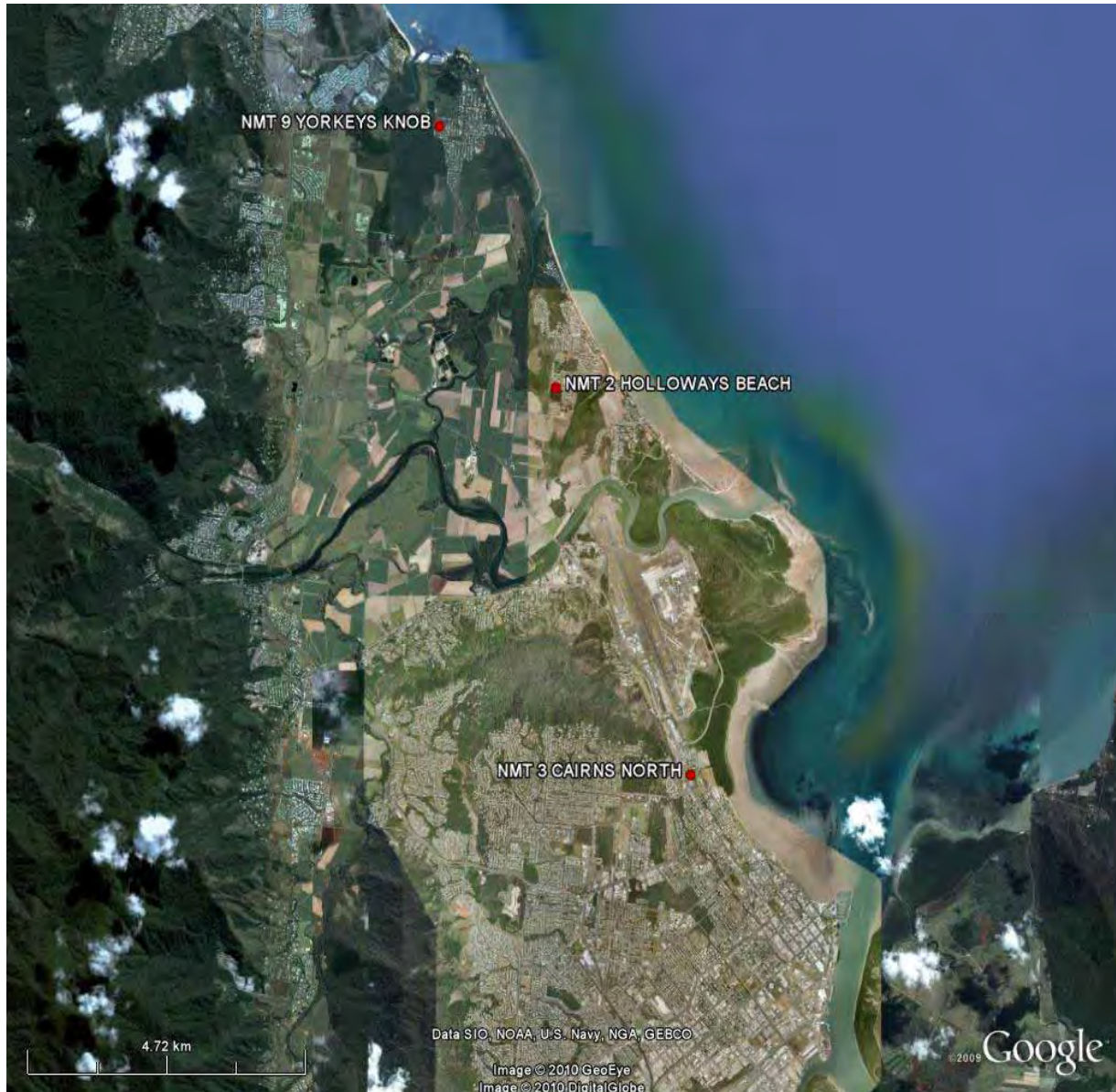


**Figure 1: Noise and flight path monitoring locations in Australia**



## 2. NMT LOCATIONS AND NOISE DATA SUMMARIES

The Cairns component of the NFPMS has three permanently installed Noise Monitoring Terminals (NMTs) which are strategically located around Cairns Airport as shown in Figure 2 and listed in Table 1.



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**Figure 2: Locations of NMTs around Cairns Airport.**

The A-weighted average noise exposure levels (LAeq) for the current and preceding 4 quarters at each NMT are contained in Table 1, the values for the night period (23:00 to 6:00 each day) are given in brackets. These noise levels encompass the whole environment (including aircraft)



as measured at each NMT. Also included in Table 1 are the number of correlated noise events (CNE), and the N70, N80 and N90 values for each NMT during the quarter. N70 is calculated by dividing the total number of CNE equal to or greater than 70 dB(A) detected during the quarter by the number of days in the quarter that the NMT is in operation (Op Days). For N80 and N90 the noise thresholds are 80 dB(A) and 90 dB(A) respectively.

Appendix B includes graphs showing the daily value of N70 at each NMT excluding days where an NMT was not operational for a full 24 hours. In some cases an NMT may suffer a hardware outage, for example during routine maintenance. The caption under each graph details such outages for each NMT during the quarter. The distribution of N70 values is also included in Appendix B.

**Table 1: Location and noise parameters for each permanent NMT about Cairns Airport for the first quarter of 2010 and previous four quarters.**

<b>NMT LOCATION (NMT NUMBER)</b>	<b>NOISE PARAMETERS</b>	<b>10Q1</b>	<b>09Q4</b>	<b>09Q3</b>	<b>09Q2</b>	<b>09Q1</b>
AA Outer Marker Yorkeys Knob (NMT 9)	<b>L<sub>Aeq</sub> 24hr (L<sub>Aeq</sub> night), dB(A)</b>	56.4 (53.1)	53.6 (50.2)	54.1 (47.8)	52.8 (48.2)	55.2 (54.0)
	<b>Days</b>	90.0	92.0	91.6	91.0	88.2
	<b>CNE 24hr (CNE night)</b>	4,461 (323)	4,381 (332)	4,236 (339)	4,227 (335)	3,634 (419)
	<b>CNE<sub>70</sub></b>	3,300	3,180	2,971	3,030	2,449
	<b>N70</b>	36.7	34.6	32.4	33.3	27.8
	<b>N80</b>	0.7	0.5	0.6	0.6	0.5
	<b>N90</b>	0.0	0.0	0.0	0.0	0.0
AA Inner Locator Holloways Beach (NMT 2)	<b>L<sub>Aeq</sub> 24hr (L<sub>Aeq</sub> night), dB(A)</b>	61.0 (56.7)	61.0 (55.1)	61.5 (54.8)	61.6 (55.1)	60.6 (55.7)
	<b>Days</b>	90.0	81.5	92.0	89.9	76.3
	<b>CNE 24hr (CNE night)</b>	7,872 (363)	7,153 (337)	8,894 (381)	8,512 (366)	6,472 (388)
	<b>CNE<sub>70</sub></b>	7,264	6,677	8,372	7,989	6,086
	<b>N70</b>	80.7	81.9	91.0	88.9	79.8
	<b>N80</b>	47.1	51.3	56.2	55.4	46.2
	<b>N90</b>	0.9	0.8	1.4	1.2	0.6
Cairns Hockey Ground Cairns North (NMT 3)	<b>L<sub>Aeq</sub> 24hr (L<sub>Aeq</sub> night), dB(A)</b>	60.9 (55.3)	60.8 (57.0)	61.4 (56.9)	61.0 (56.7)	60.6 (58.7)
	<b>Days</b>	90.0	92.0	92.0	91.0	88.9
	<b>CNE 24hr (CNE night)</b>	7,978 (331)	8,522 (340)	9,484 (347)	9,156 (357)	6,693 (357)
	<b>CNE<sub>70</sub></b>	6,330	6,332	6,726	6,413	5,127
	<b>N70</b>	70.3	68.8	73.1	70.5	57.7
	<b>N80</b>	32.8	32.6	33.6	30.3	27.4
	<b>N90</b>	0.7	0.6	0.6	0.3	0.9



### **3. QUARTERLY TRACK DATA**

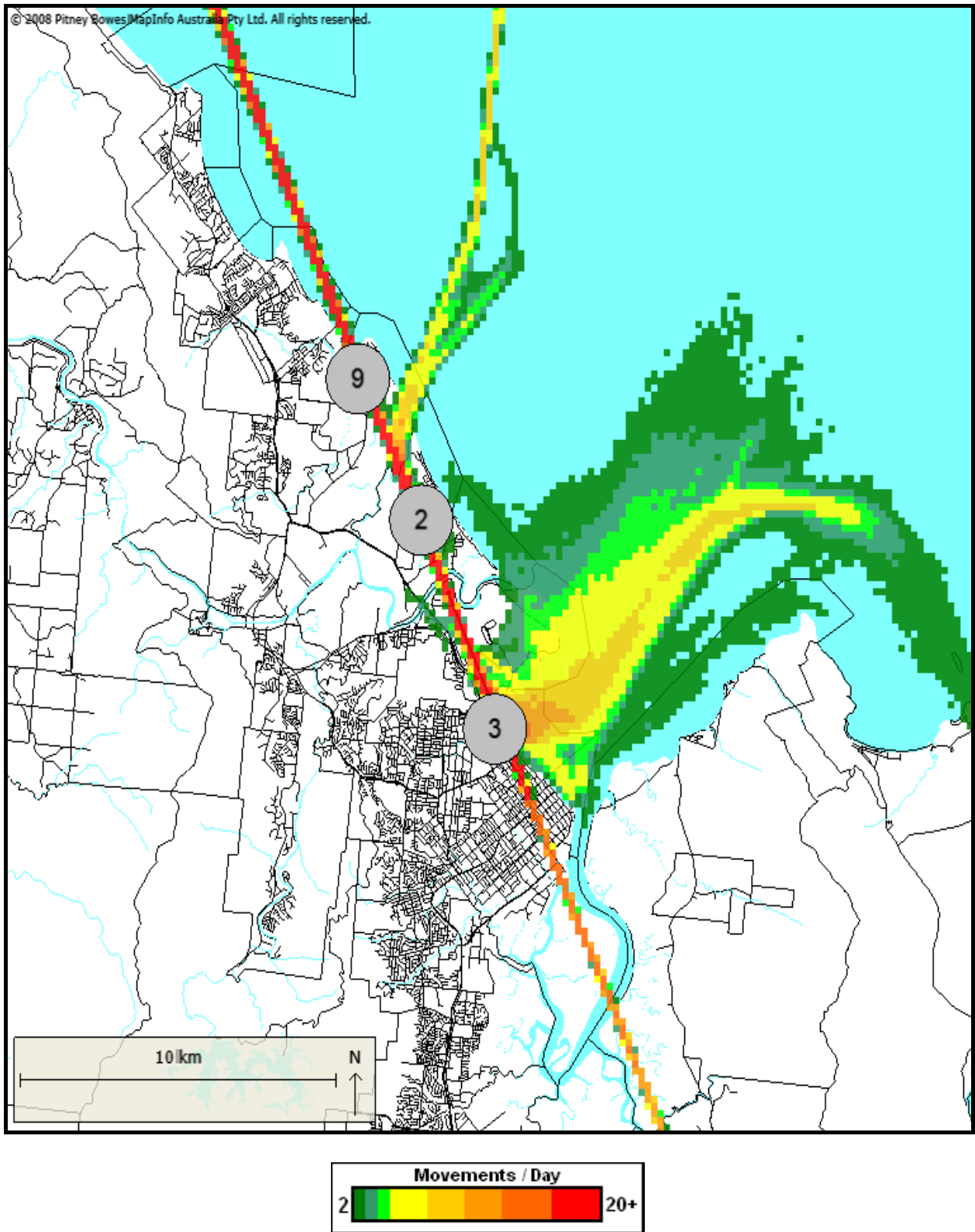
#### **3.1. Quarterly track density plots.**

The quarterly track density plot is a map which displays the pattern of aircraft flight tracks passing over the region around the airport during the quarter. The system analyses the number of flights passing over each grid element of an array defined by the user. Grid elements of 200m x 200m have been adopted as a standard. The track density plot provides a useful indication of the general patterns of the flight operations.

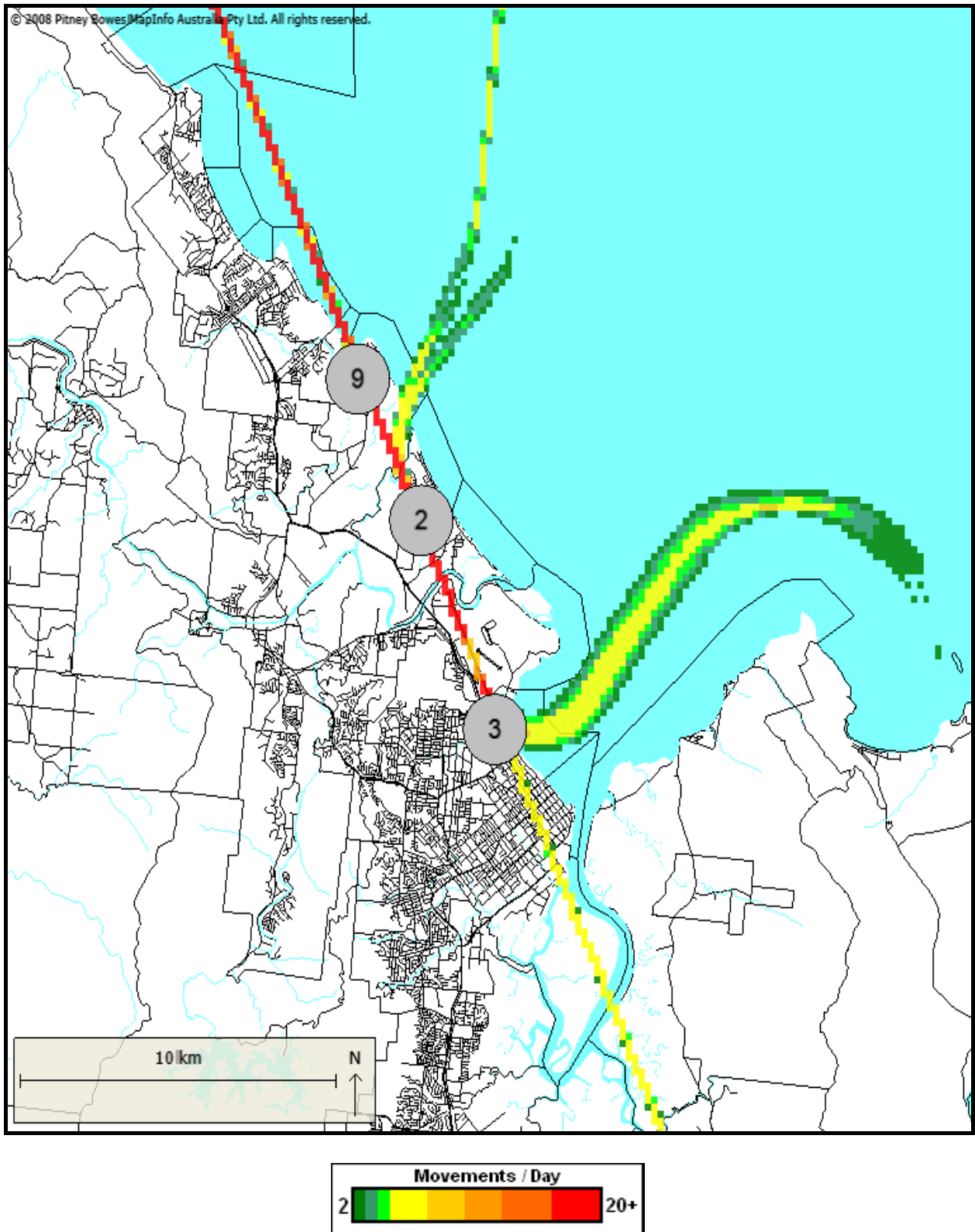
Figure 3 shows the quarterly track density plot for all aircraft operations for the first quarter of 2010. The colour coding from green to red represents the range 180 to 1800 flight tracks (ie. 2 per day to 20 or more per day) over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element during the quarter was less than 180, ie. less than 2 flights per day on average. The grey circles within Figure 3 show the location of each NMT.

For comparison purposes, the quarterly track density plot for jet operations only for the quarter is shown in Figure 4.

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**Figure 3:** Track density plot for all aircraft operations during the 1<sup>st</sup> quarter of 2010.



**Figure 4:** Track density plot for jet operations only during the 1<sup>st</sup> quarter of 2010.



### 3.2. Jet track plots.

Plots of actual tracks for arrivals and departures of individual aircraft type or group can also be obtained from the system. Figures 5 and 6 show the track plots for jet arrivals and departures over the one-week period 2<sup>nd</sup> to 8<sup>th</sup> March 2010. These tracks have been coloured according to the aircraft height above ground level. Note that using the upgraded NFPMS, Figures 5 and 6 present track plots in height above ground level. This is slightly different to the previous system where track plots were presented in altitude (distance above sea level).

- Red when less than 1000ft
- Orange between 1000ft and 3000ft
- Yellow between 3000ft and 5000ft
- Green above 5000ft.

These heights have been chosen in accordance with the criteria in the document “Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise”. This document can be found on the Airservices Australia’s web site;

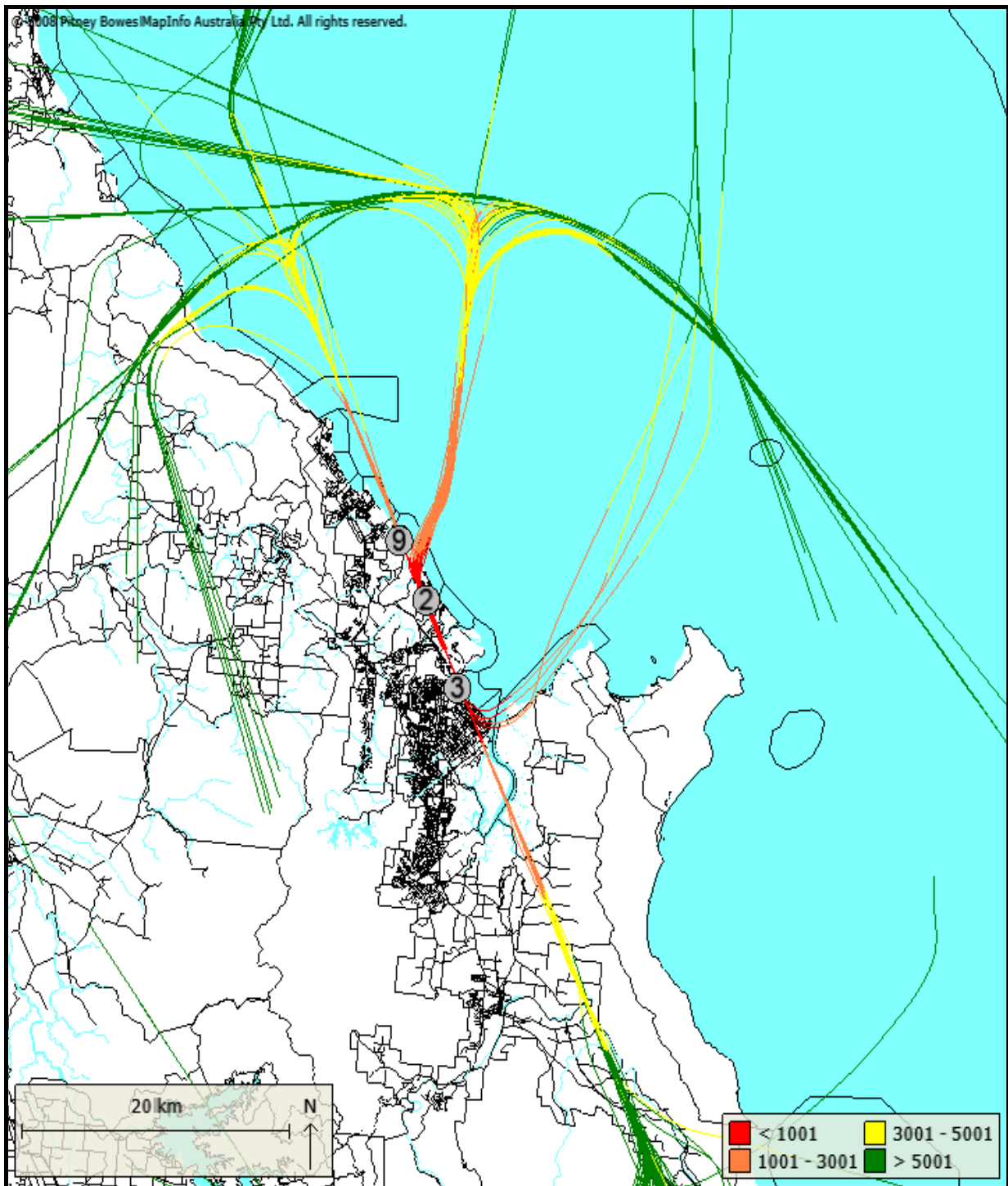
[www.airservicesaustralia.com.au/projectsservices/reports/principlesprocedures.pdf](http://www.airservicesaustralia.com.au/projectsservices/reports/principlesprocedures.pdf)

### 3.3. Non-jet and helicopter track plots.

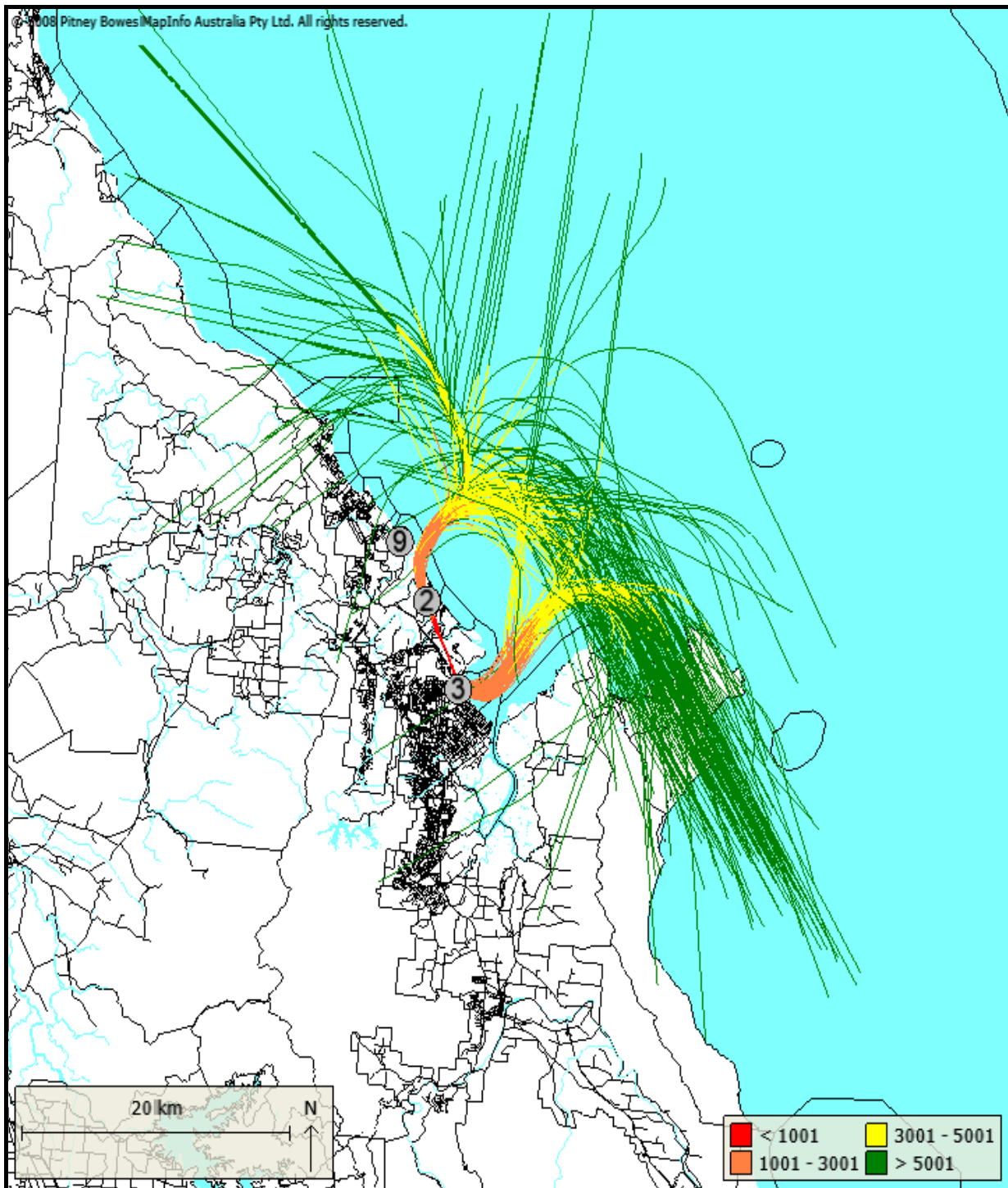
Non-jet operations are principally the operations of propeller and turbo-prop aircraft. The track plots for the period 2<sup>nd</sup> to 8<sup>th</sup> March 2010 for arriving and departing non-jet aircraft and helicopters are shown in Figures 7 and 8 respectively. The same colour coding used for jet track plots is used in these figures. Note that using the upgraded NFPMS, Figures 7 and 8 present track plots in height above ground level. This is slightly different to the previous system where track plots were presented in altitude (distance above sea level). For both arrivals and departures by non-jets, the tracks disperse from the runway centrelines closer to the airport, to allow a clear path for jets, which are significantly faster.

The red tracks heading east over the ocean are mainly due to helicopter joy flights out to the various reefs and islands.

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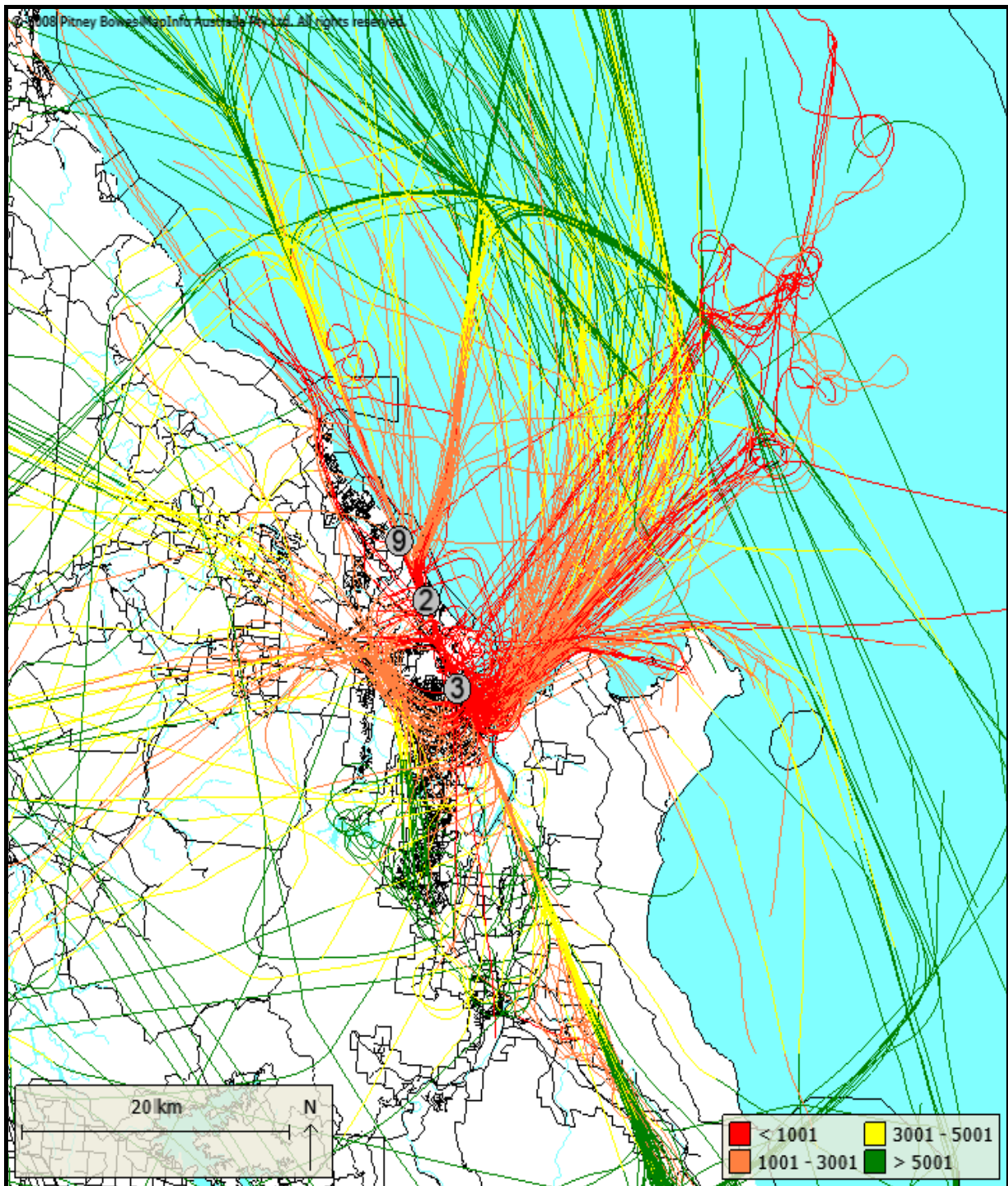


**Figure 5:** Track plots coloured by height(ft) for jet arrivals during the period 2/03/2010 to 8/03/2010.

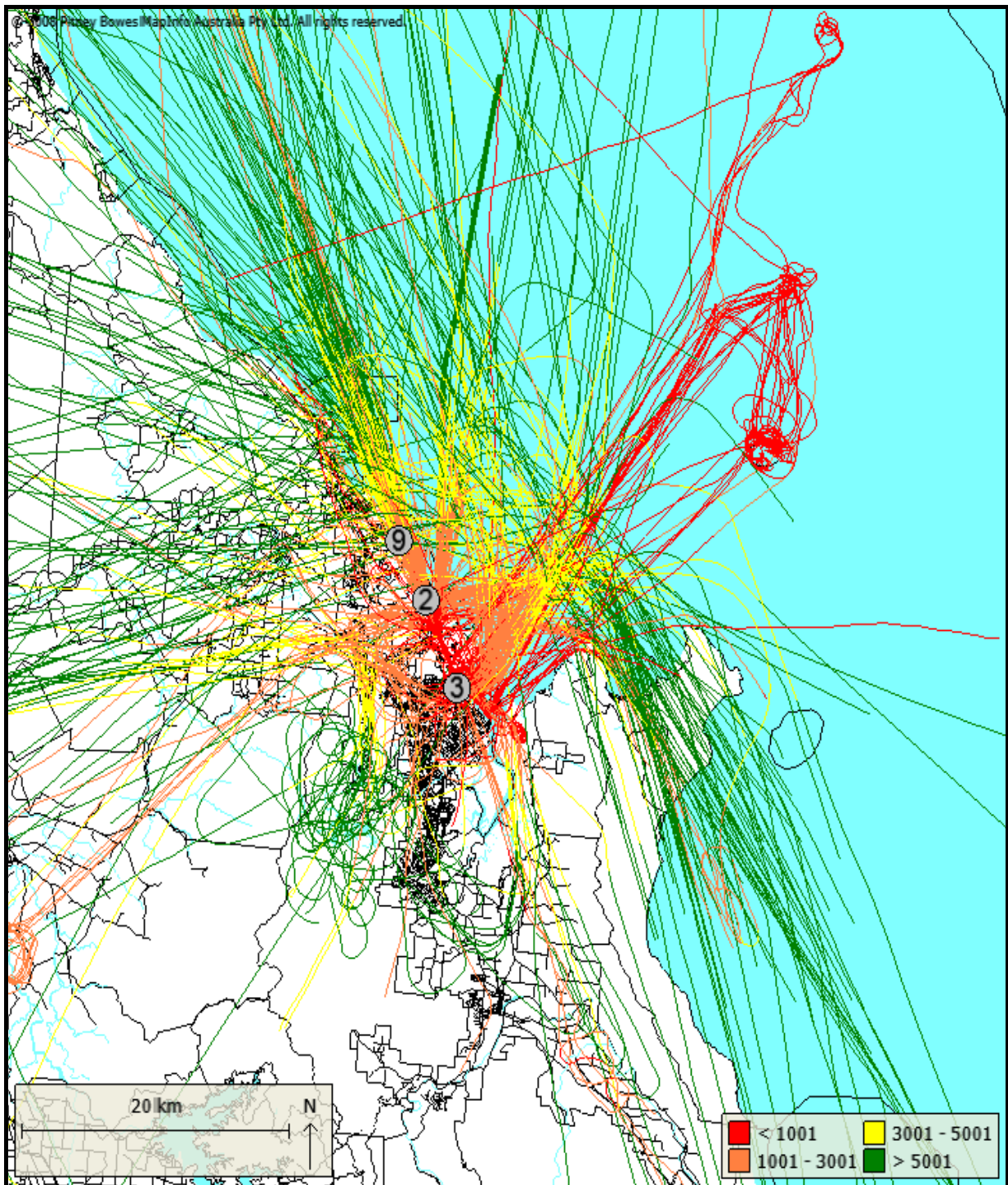


**Figure 6:** Track plots coloured by height(ft) for jet departures during the period 2/03/2010 to 8/03/2010.





**Figure 7: Track plots coloured by height(ft) for non-jet and helicopter arrivals during the period 2/03/2010 to 8/03/2010.**



**Figure 8: Track plots coloured by height(ft) for non-jet and helicopter departures during the period 2/03/2010 to 8/03/2010.**



## **4. AIRCRAFT MOVEMENT AND AIRCRAFT NOISE DATA**

### **4.1. Movement statistics.**

Movement statistics for Cairns Airport expressed in monthly figures are shown in Table 2. These figures are calculated from the data collected by the NFPMS. Explanations of the terms shown in Table 2 can be found in the Glossary section on Pages 6 and 7. The figures are based on Australian Advanced Air Traffic System (TAAATS) data.

Table 2 also covers the runway usage for arrivals and departures individually and as a total for each runway. Although their flight tracks may be available on NFPMS, TAAATS does not always provide operational details for movements by helicopters and light propeller-driven aircraft. This is the main reason that the Table includes figures for operations by miscellaneous General Aviation aircraft, or aircraft with indeterminate runway (I). Also there is runway (W) for sea planes and helicopters taking off and landing on water.

The total number of monthly arrival (A) and departure (D) movements of all types (jets, non-jets and helicopters) at Cairns Airport for January was 5826, for February was 6302 and for March was 6556. The total number of arrival and departure movements for all aircraft types during the quarter was 18684

Note that a training operation involving multiple circuits is counted by the system as a single movement, which may be arrival or departure. This is the reason that numbers of arrivals may differ from the corresponding numbers of departures. It is also the reason that movement numbers obtained from TAAATS data may differ from other ATC-sourced data.

In addition to the movement numbers of Table 2 the NFPMS detected 1339 local area operations which both originated and terminated at the airport. Some of these were General Aviation aircraft operations involved multiple training circuits at the airport.

Movement data for the preceding 4 quarters are given in Table 3

### **4.2. Night movement statistics.**

Movement statistics for aircraft operating during the night period (23:00 to 6:00) for Cairns Airport are shown in Table 4. The total number of movements during the night period in the first quarter of 2010 was 760.

Movement data for the night period for the preceding 4 quarters are given in Table 5.

### **4.3. Daily runway usage per calendar month for arrivals and departures during the quarter.**

The daily runway usage of all aircraft types (jets, non-jets, helicopters and emergency aircraft) for arrivals, departures and total movements during the quarter is shown in Appendix C. Note a separate table is given for each month.

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**Table 2**  
**Movement statistics for the first quarter of 2010**

		JAN-10	FEB-10	MAR-10	1 <sup>st</sup> Quarter	2010
		Movements	Movements	Movements	Movements	Percents
Jets	A	1079	1013	1116	3208	
	D	1077	1011	1117	3205	
	T	2156	2024	2233	6413	
Non-Jets	A	1448	1737	1799	4983	
	D	1447	1708	1790	4945	
	T	2893	3445	3589	9928	
Helicopter	A	320	417	372	1110	
	D	311	395	354	1060	
	T	631	812	726	2170	
Miscellaneous General Aviation Aircraft	A	75	15	5	95	
	D	69	6	3	78	
	T	144	21	8	173	
All Types	A	2922	3182	3292	9396	100.0%
	D	2904	3120	3264	9288	100.0%
	T	5826	6302	6556	18684	
Runway Usage Arrivals	12	43	29	25	97	1.0%
	15	2032	1827	2291	6150	65.5%
	30	14	33	30	77	0.8%
	33	465	806	540	1811	19.3%
	H	254	324	268	950	10.1%
	W	114	163	138	311	3.3%
	I	0	0	0	0	0.0%
Runway Usage Departures	12	16	2	1	19	0.2%
	15	2045	1821	2349	6215	66.9%
	30	0	0	0	0	0.0%
	33	496	863	537	1896	20.4%
	H	257	304	268	915	9.9%
	W	90	130	109	243	2.6%
	I	0	0	0	0	0.0%
Runway Usage All Movements	12	59	31	26	116	
	15	4077	3648	4640	12365	
	30	14	33	30	77	
	33	961	1669	1077	3707	
	H	511	628	536	1865	
	W	204	293	247	554	
	I	0	0	0	0	

\* In addition to the number of aircraft arrival and departure movements listed in the table, there were also another 1339 local area operations which both originated and terminated at the airport. Some of the General Aviation aircraft operations involved multiple training circuits at the airport.

Note some of the percentages can be affected by rounding to the nearest 0.1%.



**Table 3: Movement statistics for the previous four quarters**

		4 <sup>th</sup> Quarter	2009	3 <sup>rd</sup> Quarter	2009	2 <sup>nd</sup> Quarter	2009	1 <sup>s</sup> Quarter	2009
		Movements	Percents	Movements	Percents	Movements	Percents	Movements	Percents
Jets	A	3365		3489		3276		3232	
	D	3365		3479		3273		3232	
	T	6730		6968		6549		6464	
Non-Jets	A	5050		5261		5131		4727	
	D	5502		5917		5445		5307	
	T	10552		11178		10576		10034	
Helicopter	A	988		925		862		886	
	D	1075		1052		983		989	
	T	2063		1977		1845		1875	
Miscellaneous General Aviation Aircraft	A	1023		1201		849		1030	
	D	223		252		173		220	
	T	1246		1453		1022		1250	
All Types	A	10426	100.0%	10876	100.0%	10118	100.0%	9875	100.0%
	D	10165	100.0%	10700	100.0%	9874	100.0%	9748	100.0%
	T	20591		21576		19992		19623	
Runway Usage Arrivals	12	135	1.3%	225	2.1%	177	1.7%	150	1.5%
	15	7008	67.2%	8671	79.7%	8305	82.1%	6693	67.8%
	30	116	1.1%	40	0.4%	35	0.3%	133	1.3%
	33	1771	17.0%	726	6.7%	453	4.5%	1705	17.3%
	H	988	9.5%	925	8.5%	862	8.5%	886	9.0%
	W	325	3.1%	213	2.0%	179	1.8%	222	2.2%
	I	83	0.8%	76	0.7%	107	1.1%	86	0.9%
Runway Usage Departures	12	23	0.2%	1	0.0%	6	0.1%	2	0.0%
	15	7058	69.4%	8597	80.3%	8210	83.1%	6680	68.5%
	30	1	0.0%	5	0.0%	4	0.0%	7	0.1%
	33	1678	16.5%	723	6.8%	408	4.1%	1732	17.8%
	H	1075	10.6%	1052	9.8%	983	10.0%	989	10.1%
	W	261	2.6%	179	1.7%	133	1.3%	150	1.5%
	I	69	0.7%	143	1.3%	130	1.3%	188	1.9%
Runway Usage All	12	158		226		183		152	
	15	14066		17268		16515		13373	
	30	117		45		39		140	
	33	3449		1449		861		3437	



Movements	H	2063		1977		1845		1875	
	W	586		392		312		372	
	I	152		219		237		274	

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**Table 4**  
**Night movement statistics for the first quarter of 2010**

		Jan 10	Feb 10	Mar 10	1 <sup>st</sup> Quarter	2010
		Movements	Movements	Movements	Movements	Percents
Jets	A	100	81	94	275	
	D	79	72	87	238	
	T	179	153	181	513	
Non-Jets	A	20	23	24	67	
	D	37	45	60	142	
	T	57	68	84	209	
Helicopter	A	4	6	4	14	
	D	5	6	3	14	
	T	9	12	7	28	
Miscellaneous General Aviation Aircraft	A	5	1	0	6	
	D	3	1	0	4	
	T	8	2	0	10	
All Types	A	129	111	122	362	100.0%
	D	124	124	150	398	100.0%
	T	253	235	272	760	
Runway Usage Arrivals *	12	0	0	0	0	0.0%
	15	113	101	116	330	91.2%
	30	0	0	0	0	0.0%
	33	12	4	2	18	5.0%
	H	4	6	4	14	3.9%
	W	0	0	0	0	0.0%
	I	0	0	0	0	0.0%
Runway Usage Departures *	12	4	0	0	4	1.0%
	15	103	106	138	347	87.2%
	30	0	0	0	0	0.0%
	33	12	12	9	33	8.3%
	H	5	6	3	14	3.5%
	W	0	0	0	0	0.0%
	I	0	0	0	0	0.0%
Runway Usage All Movements	12	4	0	0	4	
	15	216	207	254	677	
	30	0	0	0	0	
	33	24	16	11	51	
	H	9	12	7	28	
	W	0	0	0	0	
	I	0	0	0	0	

\* Take-offs and landings during night preferentially use runway 15.

Note some of the percentages can be affected by rounding to the nearest 0.1%



**Table 5: Night movement statistics for the previous four quarters**

		4 <sup>th</sup> Quarter 2009		3 <sup>rd</sup> Quarter 2009		2 <sup>nd</sup> Quarter 2009		1 <sup>s</sup> Quarter 2009	
		Movements	Percents	Movements	Percents	Movements	Percents	Movements	Percents
Jets	A	276		278		284		330	
	D	230		257		241		300	
	T	506		535		525		630	
Non-Jets	A	97		108		83		128	
	D	158		161		164		220	
	T	255		269		247		348	
Helicopter	A	28		23		22		12	
	D	26		21		27		20	
	T	54		44		49		32	
Miscellaneous General Aviation Aircraft	A	5		8		7		9	
	D	2		5		3		6	
	T	7		13		10		15	
All Types	A	406	100.00%	417	100.00%	396	100.0%	479	100.00%
	D	416	100.00%	444	100.00%	435	100.0%	546	100.00%
	T	822		861		831		1025	
Runway Usage Arrivals	12	0	0.00%	0	0.00%	0		0	
	15	374	92.12%	394	94.48%	371	93.7%	458	95.62%
	30	0	0.00%	0	0.00%	0	0.0%	0	0.00%
	33	3	0.74%	0	0.00%	0	0.0%	8	1.67%
	H	28	6.90%	23	5.52%	22	5.6%	12	2.51%
	W	0	0.00%	0	0.00%	0	0.0%	0	0.00%
	I	1	0.25%	0	0.00%	3	0.8%	1	0.21%
Runway Usage Departures	12	0	0.00%	1	0.23%	0	0.0%	0	0.00%
	15	385	92.55%	420	94.59%	407	93.6%	505	92.49%
	30	0	0.00%	0	0.00%	0		0	
	33	4	0.96%	1	0.23%	1	0.2%	18	3.30%
	H	26	6.25%	21	4.73%	27	6.2%	20	3.66%
	W	1	0.24%	0	0.00%	0	0.0%	0	0.00%
	I	0	0.00%	1	0.23%	0	0.0%	3	0.55%
Runway Usage All	12	0		1		0		0	
	15	759		814		778		963	
	30	0		0		0		0	
	33	7		1		1		26	





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Movements	H	54		44		49		32	
	W	1		0		0		0	
	I	1		1		3		4	

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#### **4.4. Hourly movements per calendar month for arrivals and departures during the quarter.**

The three tables of Appendix D contain the hourly movements averaged over each month of the quarter for all aircraft movements operating in and out of the airport including helicopters and emergency aircraft. The data in Appendix D are calculated for whole clock hours within the day.

#### **4.5. Quarterly aircraft average noise levels.**

Appendix E presents a summary of movement numbers and noise levels recorded over the quarter for jet and non-jet aircraft types. It shows the actual movements and the correlated noise events of aircraft types operating on specific runways together with the average maximum sound pressure levels and standard deviations of the maxima for overflights by each type at each NMT. The terms used in the data output are explained in the Glossary. The data is sorted in order of descending maximum sound pressure levels for the 25 noisiest types/operations at each NMT.

#### **4.6. Data included in Appendix E.**

It may be noted in Appendix E that in some cases there is a difference between the reported number of aircraft movements and the number of correlated noise events.

A noise event occurs when a noise being measured at an NMT stays above a preset level for a preset time duration. When that condition occurs, the NFPMS looks at the radar input to see whether there is an aircraft track within a preset radius around the NMT location. If there is, the noise event is correlated with that aircraft track and registered as a correlated noise event.

Differences between the number of aircraft movements and the number of correlated noise events may be due to the following:

- (i) For aircraft operations which are not relatively close to the NMT location, the noise levels received from the aircraft may be below the event threshold level. This results in less correlated noise events than actual aircraft movements.
- (ii) Noise events may not be correlated with aircraft tracks due to radar system downtime or transponders on the aircraft being turned off. This also results in less correlated noise events than actual aircraft movements.
- (iii) In some cases, extraneous noise events caused by sources other than aircraft occur concurrently with an aircraft operation, and are coincidentally correlated with an aircraft track in the vicinity of the NMT. This may result in more correlated noise events than actual aircraft movements.

For larger data samples, the absence or mistaken identity of some noise events will have minimal effect on the mean data presented in the report. Data for small sample sizes may however not be truly representative. A minimum total of six over flights have been used to establish a mean noise level. As a result, it should be noted that with this small sample size the mean noise level can be viewed as being less accurate

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## **APPENDIX A**

An overview of the Noise and Flight Path Monitoring System

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## **A. SYSTEM OVERVIEW**

### **A.1. System configuration and features.**

The NFPMS is the world's largest, most geographically-spread system of its type. The complete system is operated and controlled from AA Head Office in Canberra.

Around each of the airports are a number of noise monitoring terminals (NMTs). The NMT basically consists of a microphone, atop a mast of 6m height, and an electronics box. The noise level to which the microphone is exposed over the range 30 to 130 dB(A) is continuously measured and then transmitted, via a data line, to the NFPMS central computer where it is processed and stored for later analysis. Apart from measuring the aircraft noise, the NMT also continuously monitors the background noise levels.

Through the TAAATS system, the NFPMS acquires flight track and operational information on aircraft operating in and out of the airport.

On a map display for each airport, the system displays the noise levels measured by each of the NMTs and the flight tracks of the aircraft in the vicinity of the airport.

When the level and duration of noise from any noise source in the vicinity of an NMT exceed the threshold level and duration which have been set for the NMT, a "noise event" is recorded. The time at which the noise event is recorded at the NMT location is then checked against movement times and radar tracks of aircraft operating in the vicinity. If the time and NMT location of the noise event match the movement time and radar track of an aircraft, the noise event is attributed to that aircraft, i.e it becomes a "correlated noise event". Otherwise, it is regarded as part of the background noise.

The incoming data is stored in the central computer and can be recalled to display the tracks flown by any user selection of aircraft operations, together with the noise levels which those operations produced at the NMTs. The track information includes aircraft identity, altitude and speed.

The system includes statistical and acoustical software to undertake analyses of noise or flight track information as required by the user.

Automatically and regularly, the NFPMS produces reports that contain tabular and graphical summaries of noise and aircraft movement data for each airport over selected time periods.

The system includes the capability to analyse aircraft tracks, by selecting and listing the tracks which have passed through defined windows and corridors. The analysis can be selective, e.g. on specification of aircraft type or the route being flown.

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## **A.2. System applications.**

The NFPMS collects noise and flight path data 24 hours a day, seven days per week. It also accumulates flight plan and weather data.

The information collected is used by AA to:

- determine the contribution of aircraft to overall noise exposure;
  - detect occurrences of excessive noise levels from aircraft operations;
  - assess the effects of operational and administrative procedures for noise control and compliance with these procedures;
  - assist in planning of airspace usage;
  - validate noise forecasts and forecasting techniques;
  - assist relevant authorities in land-use planning for developments on areas in the vicinity of an airport;
  - provide reports to, and responses to questions from, Government and other Members of Parliament, industry organisations, airport owners, community groups and individuals; and.
  - assist in answering noise complaints about aircraft operations from the general public.
-



## **APPENDIX B**

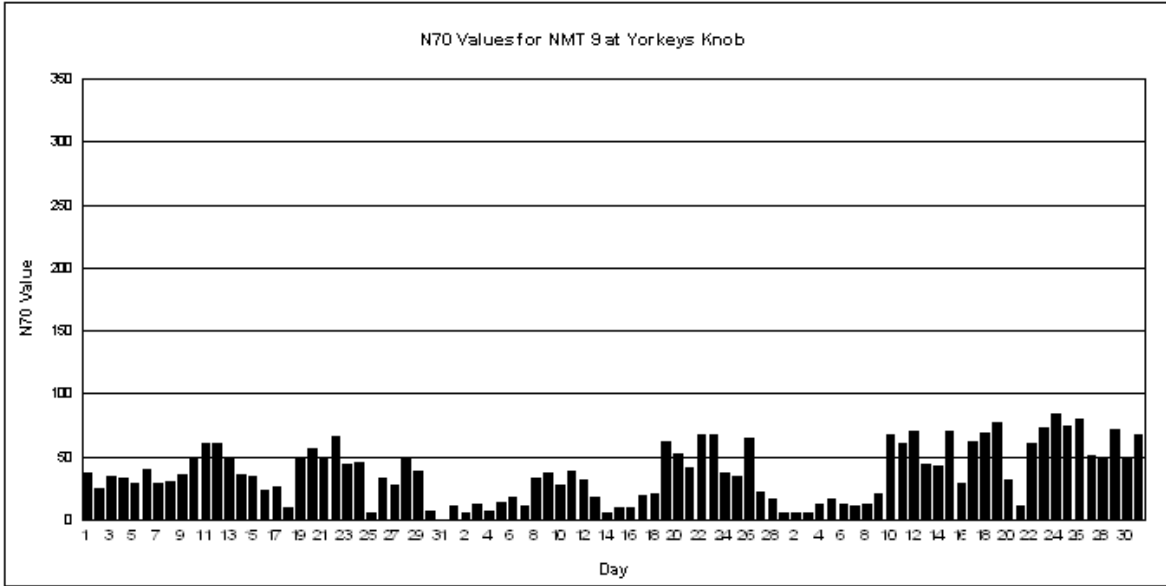
Daily value of N70 and N70 distribution for each NMT

during the period January to March 2010

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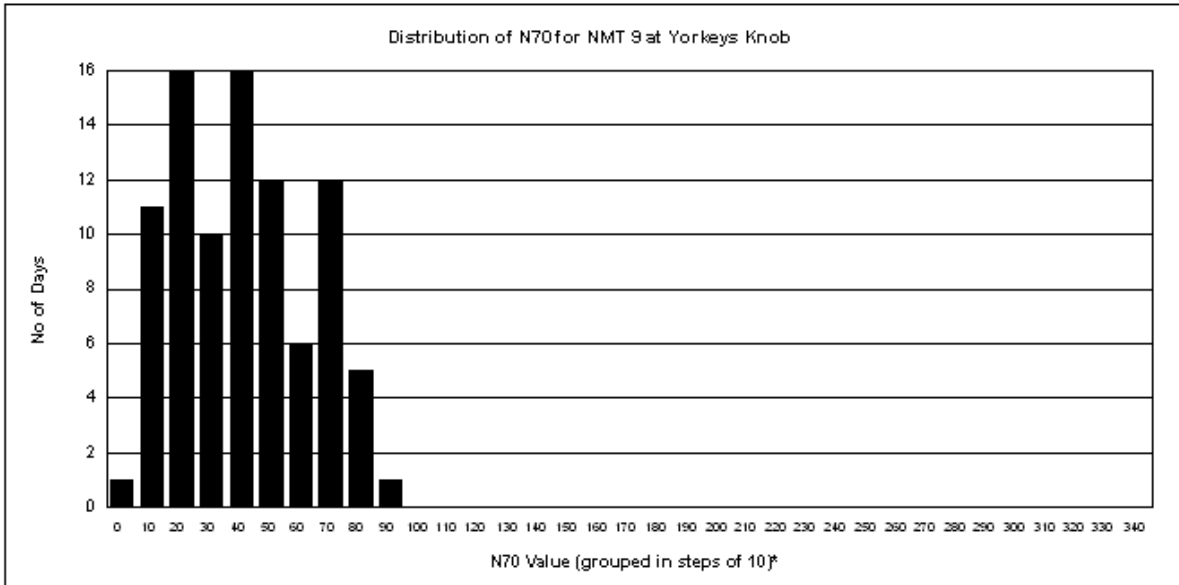


**N70 Values for NMT 9 at Yorkeys Knob**



NMT 9 at Yorkeys Knob

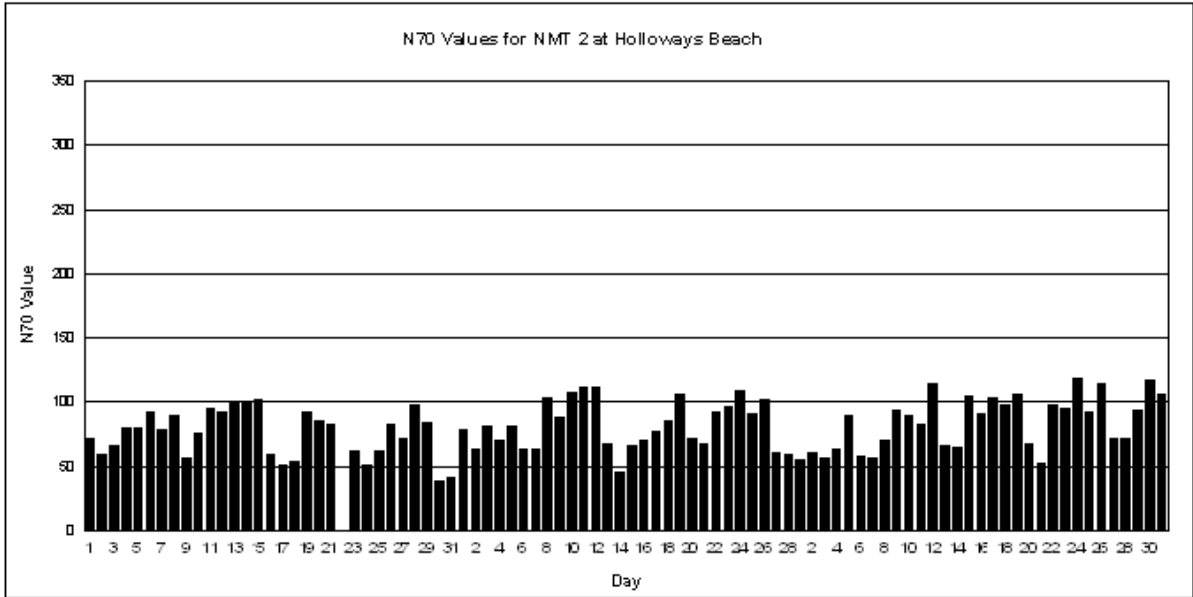
**Distribution of N70 for NMT 9 at Yorkeys Knob**



\* Except for N70 value of 0, which shows number of days with zero exceedances of N70 dB(A). All other values are in steps of 10 (eg. days with N70 of 1 to 10, 11 to 20, 21 to 30 etc).

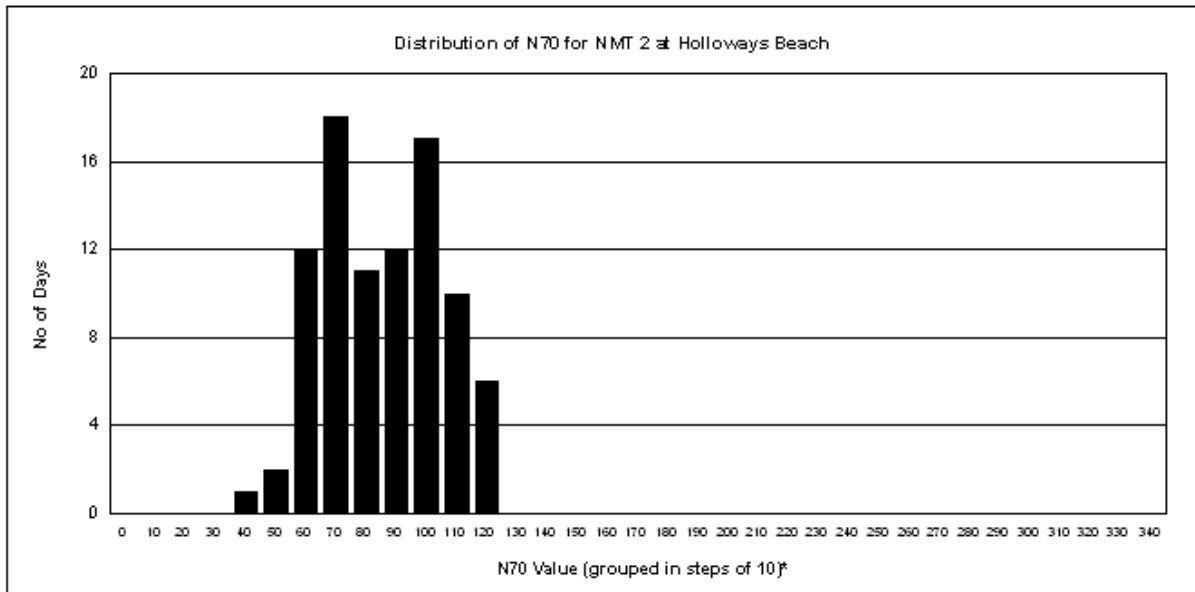


**N70 Values for NMT 2 at Holloways Beach**



NMT 2 at Holloways Beach

**Distribution of N70 for NMT 2 at Holloways Beach**

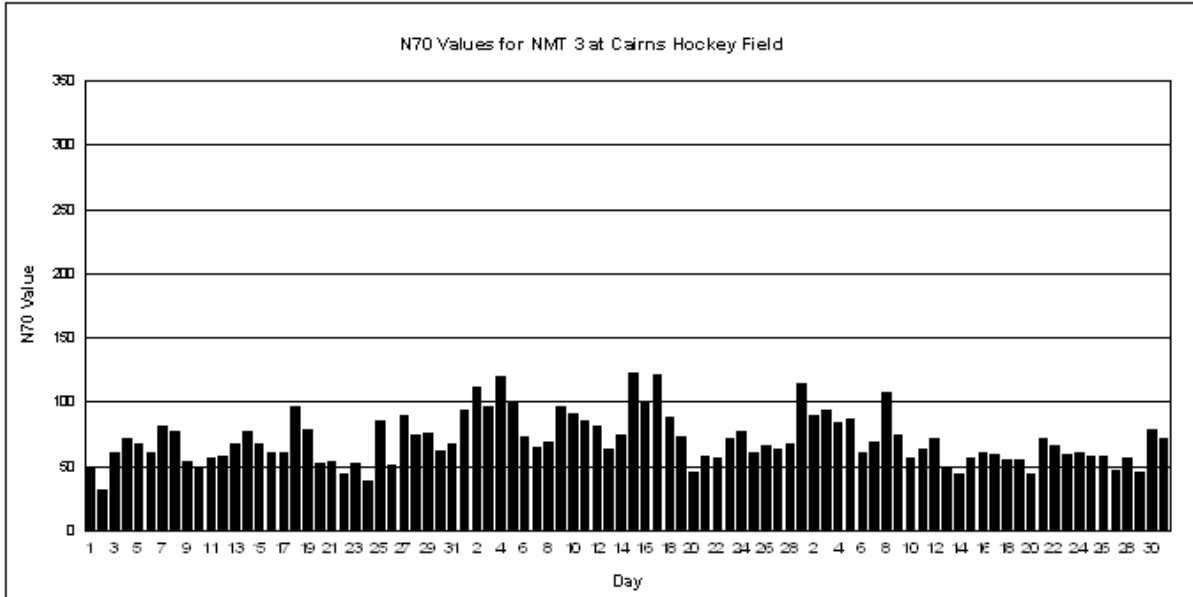


\* Except for N70 value of 0, which shows number of days with zero exceedances of N70 dB(A). All other values are in steps of 10 (eg. days with N70 of 1 to 10, 11 to 20, 21 to 30 etc).



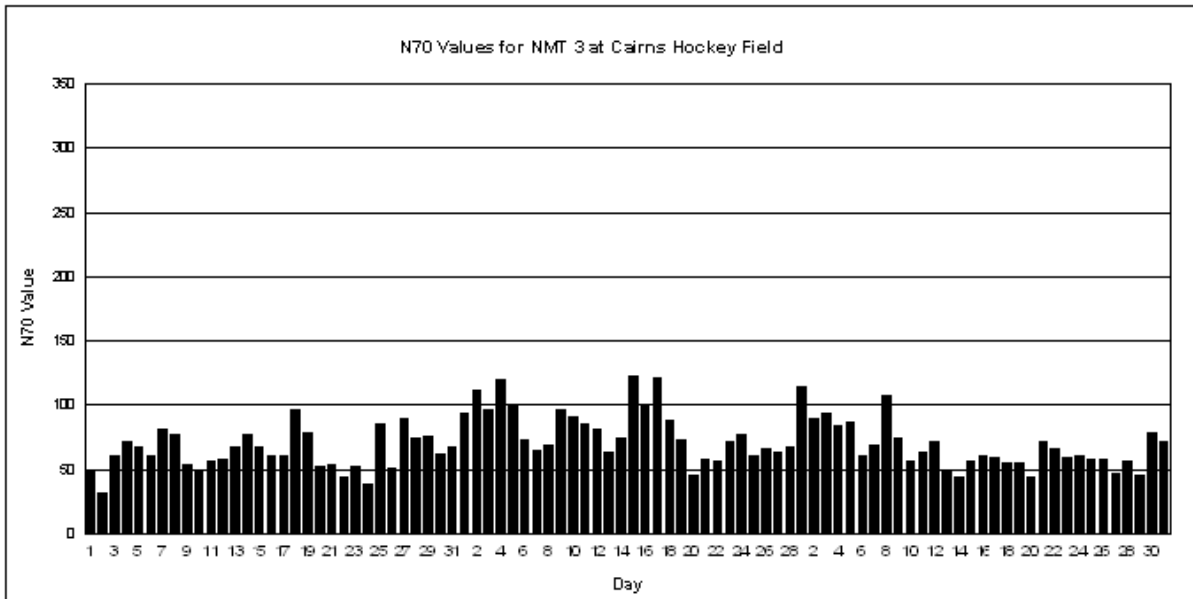


**N70 Values for NMT 3 at Cairns Hockey Field**



NMT 3 at Cairns North

**Distribution of N70 for NMT 3 at Cairns Hockey Field**



\* Except for N70 value of 0, which shows number of days with zero exceedances of N70 dB(A). All other values are in steps of 10 (eg. days with N70 of 1 to 10, 11 to 20, 21 to 30 etc).



## **APPENDIX C**

Daily runway usage per calendar month for arrivals and departures  
during the period January to March 2010

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**Cairns Airport**  
**Daily Runway Usage (Arrivals for All Aircraft Types)**  
**Jan-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Jan-10	81	0	66	0	1	7	0	7
02-Jan-10	79	1	55	1	6	9	0	7
03-Jan-10	95	0	71	0	0	12	0	12
04-Jan-10	104	3	63	3	25	7	0	3
05-Jan-10	109	4	86	0	0	13	0	6
06-Jan-10	106	2	90	0	0	9	0	5
07-Jan-10	115	1	71	1	22	14	0	6
08-Jan-10	118	3	99	0	0	10	0	6
09-Jan-10	73	1	58	0	0	9	0	5
10-Jan-10	74	0	61	0	0	10	0	3
11-Jan-10	103	2	89	0	0	10	0	2
12-Jan-10	109	4	93	0	0	9	0	3
13-Jan-10	119	5	100	0	0	11	0	3
14-Jan-10	115	3	100	0	0	9	0	3
15-Jan-10	129	2	109	0	0	14	0	4
16-Jan-10	80	0	66	0	0	10	0	4
17-Jan-10	76	4	41	0	22	5	0	4
18-Jan-10	110	1	23	2	73	6	0	5
19-Jan-10	88	2	80	0	1	5	0	0
20-Jan-10	97	0	86	0	0	5	0	6
21-Jan-10	91	0	87	0	0	4	0	0
22-Jan-10	94	1	89	0	0	3	0	1
23-Jan-10	61	0	57	0	0	4	0	0
24-Jan-10	52	0	50	0	0	2	0	0
25-Jan-10	98	0	3	3	80	10	0	2
26-Jan-10	82	0	65	0	14	1	0	2
27-Jan-10	108	3	34	2	56	11	0	2
28-Jan-10	120	0	84	1	13	15	0	7
29-Jan-10	107	1	49	0	43	8	0	6
30-Jan-10	58	0	7	0	46	5	0	0
31-Jan-10	71	0	0	1	63	7	0	0
<b>Total</b>	<b>2922</b>	<b>43</b>	<b>2032</b>	<b>14</b>	<b>465</b>	<b>254</b>	<b>0</b>	<b>114</b>
<b>Percentage</b>	<b>100.0%</b>	<b>1.5%</b>	<b>69.5%</b>	<b>0.5%</b>	<b>15.9%</b>	<b>8.7%</b>	<b>0.0%</b>	<b>3.9%</b>



**Cairns Airport**  
**Daily Runway Usage (Departures for All Aircraft Types)**  
**Jan-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Jan-10	78	0	58	0	9	5	0	6
02-Jan-10	77	0	57	0	9	7	0	4
03-Jan-10	83	0	71	0	0	9	0	3
04-Jan-10	106	0	69	0	26	10	0	1
05-Jan-10	106	0	92	0	0	12	0	2
06-Jan-10	107	1	86	0	3	12	0	5
07-Jan-10	114	0	78	0	22	12	0	2
08-Jan-10	118	0	97	0	1	13	0	7
09-Jan-10	73	0	62	0	0	9	0	2
10-Jan-10	71	2	57	0	0	8	0	4
11-Jan-10	105	1	93	0	0	9	0	2
12-Jan-10	117	4	96	0	1	13	0	3
13-Jan-10	115	1	102	0	1	8	0	3
14-Jan-10	122	1	107	0	0	9	0	5
15-Jan-10	121	1	102	0	0	13	0	5
16-Jan-10	80	0	67	0	0	9	0	4
17-Jan-10	84	1	50	0	21	7	0	5
18-Jan-10	114	1	44	0	59	6	0	4
19-Jan-10	100	1	89	0	0	8	0	2
20-Jan-10	92	1	83	0	0	5	0	3
21-Jan-10	92	0	85	0	0	6	0	1
22-Jan-10	80	0	78	0	0	2	0	0
23-Jan-10	66	0	60	0	0	5	0	1
24-Jan-10	55	0	53	0	0	2	0	0
25-Jan-10	97	0	0	0	85	11	0	1
26-Jan-10	84	0	45	0	36	2	0	1
27-Jan-10	104	0	36	0	55	11	0	2
28-Jan-10	119	1	79	0	16	13	0	10
29-Jan-10	94	0	37	0	47	8	0	2
30-Jan-10	60	0	12	0	41	7	0	0
31-Jan-10	70	0	0	0	64	6	0	0
<b>Total</b>	<b>2904</b>	<b>16</b>	<b>2045</b>	<b>0</b>	<b>496</b>	<b>257</b>	<b>0</b>	<b>90</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.6%</b>	<b>70.4%</b>	<b>0.0%</b>	<b>17.1%</b>	<b>8.8%</b>	<b>0.0%</b>	<b>3.1%</b>



**Cairns Airport**  
**Daily Runway Usage (Arrivals and Departures for All Aircraft Types)**  
**Jan-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Jan-10	159	0	124	0	10	12	0	13
02-Jan-10	156	1	112	1	15	16	0	11
03-Jan-10	178	0	142	0	0	21	0	15
04-Jan-10	210	3	132	3	51	17	0	4
05-Jan-10	215	4	178	0	0	25	0	8
06-Jan-10	213	3	176	0	3	21	0	10
07-Jan-10	229	1	149	1	44	26	0	8
08-Jan-10	236	3	196	0	1	23	0	13
09-Jan-10	146	1	120	0	0	18	0	7
10-Jan-10	145	2	118	0	0	18	0	7
11-Jan-10	208	3	182	0	0	19	0	4
12-Jan-10	226	8	189	0	1	22	0	6
13-Jan-10	234	6	202	0	1	19	0	6
14-Jan-10	237	4	207	0	0	18	0	8
15-Jan-10	250	3	211	0	0	27	0	9
16-Jan-10	160	0	133	0	0	19	0	8
17-Jan-10	160	5	91	0	43	12	0	9
18-Jan-10	224	2	67	2	132	12	0	9
19-Jan-10	188	3	169	0	1	13	0	2
20-Jan-10	189	1	169	0	0	10	0	9
21-Jan-10	183	0	172	0	0	10	0	1
22-Jan-10	174	1	167	0	0	5	0	1
23-Jan-10	127	0	117	0	0	9	0	1
24-Jan-10	107	0	103	0	0	4	0	0
25-Jan-10	195	0	3	3	165	21	0	3
26-Jan-10	166	0	110	0	50	3	0	3
27-Jan-10	212	3	70	2	111	22	0	4
28-Jan-10	239	1	163	1	29	28	0	17
29-Jan-10	201	1	86	0	90	16	0	8
30-Jan-10	118	0	19	0	87	12	0	0
31-Jan-10	141	0	0	1	127	13	0	0
<b>Total</b>	<b>5826</b>	<b>59</b>	<b>4077</b>	<b>14</b>	<b>961</b>	<b>511</b>	<b>0</b>	<b>204</b>
<b>Percentage</b>	<b>100.0%</b>	<b>1.0%</b>	<b>70.0%</b>	<b>0.2%</b>	<b>16.5%</b>	<b>8.8%</b>	<b>0.0%</b>	<b>3.5%</b>



**Cairns Airport**  
**Daily Runway Usage (Arrivals for All Aircraft Types)**  
**Feb-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Feb-10	116	0	10	8	84	10	0	4
02-Feb-10	123	0	3	3	92	16	0	9
03-Feb-10	120	0	49	1	52	14	0	4
04-Feb-10	125	0	10	0	96	18	0	1
05-Feb-10	125	0	38	0	75	9	0	3
06-Feb-10	90	0	47	2	26	10	0	5
07-Feb-10	88	3	72	0	0	11	0	2
08-Feb-10	127	1	109	0	0	12	0	5
09-Feb-10	116	0	78	0	23	13	0	2
10-Feb-10	123	1	97	0	7	15	0	3
11-Feb-10	126	1	105	1	0	16	0	3
12-Feb-10	142	0	114	0	1	15	0	12
13-Feb-10	105	3	82	0	0	14	0	6
14-Feb-10	95	2	17	2	48	15	0	11
15-Feb-10	133	1	20	5	87	12	0	8
16-Feb-10	123	1	29	3	73	9	0	8
17-Feb-10	140	2	39	2	69	14	0	14
18-Feb-10	121	0	46	4	48	12	0	11
19-Feb-10	130	0	107	0	1	14	0	8
20-Feb-10	81	0	69	0	0	10	0	2
21-Feb-10	97	3	73	0	0	13	0	8
22-Feb-10	102	0	89	0	0	8	0	5
23-Feb-10	114	0	99	0	0	7	0	8
24-Feb-10	129	2	114	0	0	10	0	3
25-Feb-10	109	5	94	0	0	6	0	4
26-Feb-10	115	2	102	0	0	6	0	5
27-Feb-10	87	2	72	0	0	8	0	5
28-Feb-10	80	0	43	2	24	7	0	4
<b>Total</b>	<b>3182</b>	<b>29</b>	<b>1827</b>	<b>33</b>	<b>806</b>	<b>324</b>	<b>0</b>	<b>163</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.9%</b>	<b>57.4%</b>	<b>1.0%</b>	<b>25.3%</b>	<b>10.2%</b>	<b>0.0%</b>	<b>5.1%</b>



**Cairns Airport**  
**Daily Runway Usage (Departures for All Aircraft Types)**  
**Feb-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Feb-10	117	0	1	0	106	8	0	2
02-Feb-10	121	0	1	0	98	15	0	7
03-Feb-10	121	0	39	0	61	15	0	6
04-Feb-10	120	0	10	0	93	15	0	2
05-Feb-10	122	0	38	0	74	7	0	3
06-Feb-10	84	0	48	0	26	7	0	3
07-Feb-10	87	1	73	0	2	9	0	2
08-Feb-10	123	0	103	0	5	10	0	5
09-Feb-10	117	0	72	0	29	13	0	3
10-Feb-10	125	0	103	0	6	12	0	4
11-Feb-10	133	0	113	0	1	15	0	4
12-Feb-10	137	0	105	0	5	18	0	9
13-Feb-10	98	0	80	0	4	11	0	3
14-Feb-10	94	0	25	0	48	14	0	7
15-Feb-10	140	0	44	0	73	13	0	10
16-Feb-10	116	0	37	0	65	10	0	4
17-Feb-10	130	0	57	0	56	12	0	5
18-Feb-10	120	0	32	0	72	10	0	6
19-Feb-10	114	0	90	0	4	17	0	3
20-Feb-10	81	0	61	0	4	12	0	4
21-Feb-10	100	0	81	0	0	12	0	7
22-Feb-10	102	0	90	0	0	6	0	6
23-Feb-10	111	0	97	0	0	6	0	8
24-Feb-10	126	0	112	0	1	9	0	4
25-Feb-10	110	1	101	0	0	5	0	3
26-Feb-10	112	0	100	0	0	7	0	5
27-Feb-10	82	0	70	0	0	9	0	3
28-Feb-10	77	0	38	0	30	7	0	2
<b>Total</b>	<b>3120</b>	<b>2</b>	<b>1821</b>	<b>0</b>	<b>863</b>	<b>304</b>	<b>0</b>	<b>130</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.1%</b>	<b>58.4%</b>	<b>0.0%</b>	<b>27.7%</b>	<b>9.7%</b>	<b>0.0%</b>	<b>4.2%</b>



**Cairns Airport**  
**Daily Runway Usage (Arrivals and Departures for All Aircraft Types)**  
**Feb-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Feb-10	233	0	11	8	190	18	0	6
02-Feb-10	244	0	4	3	190	31	0	16
03-Feb-10	241	0	88	1	113	29	0	10
04-Feb-10	245	0	20	0	189	33	0	3
05-Feb-10	247	0	76	0	149	16	0	6
06-Feb-10	174	0	95	2	52	17	0	8
07-Feb-10	175	4	145	0	2	20	0	4
08-Feb-10	250	1	212	0	5	22	0	10
09-Feb-10	233	0	150	0	52	26	0	5
10-Feb-10	248	1	200	0	13	27	0	7
11-Feb-10	259	1	218	1	1	31	0	7
12-Feb-10	279	0	219	0	6	33	0	21
13-Feb-10	203	3	162	0	4	25	0	9
14-Feb-10	189	2	42	2	96	29	0	18
15-Feb-10	273	1	64	5	160	25	0	18
16-Feb-10	239	1	66	3	138	19	0	12
17-Feb-10	270	2	96	2	125	26	0	19
18-Feb-10	241	0	78	4	120	22	0	17
19-Feb-10	244	0	197	0	5	31	0	11
20-Feb-10	162	0	130	0	4	22	0	6
21-Feb-10	197	3	154	0	0	25	0	15
22-Feb-10	204	0	179	0	0	14	0	11
23-Feb-10	225	0	196	0	0	13	0	16
24-Feb-10	255	2	226	0	1	19	0	7
25-Feb-10	219	6	195	0	0	11	0	7
26-Feb-10	227	2	202	0	0	13	0	10
27-Feb-10	169	2	142	0	0	17	0	8
28-Feb-10	157	0	81	2	54	14	0	6
<b>Total</b>	<b>6302</b>	<b>31</b>	<b>3648</b>	<b>33</b>	<b>1669</b>	<b>628</b>	<b>0</b>	<b>293</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.5%</b>	<b>57.9%</b>	<b>0.5%</b>	<b>26.5%</b>	<b>10.0%</b>	<b>0.0%</b>	<b>4.6%</b>





**Cairns Airport**  
**Daily Runway Usage (Arrivals for All Aircraft Types)**  
**Mar-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Mar-10	110	0	15	5	77	8	0	5
02-Mar-10	102	0	3	4	86	6	0	3
03-Mar-10	115	0	5	9	91	6	0	4
04-Mar-10	118	0	23	6	72	9	0	8
05-Mar-10	124	1	66	2	41	9	0	5
06-Mar-10	86	2	51	0	16	11	0	6
07-Mar-10	87	1	33	0	39	11	0	3
08-Mar-10	123	0	45	2	58	15	0	3
09-Mar-10	115	2	100	0	0	11	0	2
10-Mar-10	103	0	94	0	0	5	0	4
11-Mar-10	102	0	93	0	0	7	0	2
12-Mar-10	136	2	116	0	0	11	0	7
13-Mar-10	78	0	65	0	0	9	0	4
14-Mar-10	73	0	62	0	0	7	0	4
15-Mar-10	112	1	97	0	0	10	0	4
16-Mar-10	114	3	98	0	0	9	0	4
17-Mar-10	112	1	104	0	0	5	0	2
18-Mar-10	109	0	101	0	0	7	0	1
19-Mar-10	128	1	104	0	0	14	0	9
20-Mar-10	91	2	71	0	0	12	0	6
21-Mar-10	93	0	14	2	60	9	0	8
22-Mar-10	117	3	103	0	0	7	0	4
23-Mar-10	108	1	96	0	0	9	0	2
24-Mar-10	127	3	108	0	0	12	0	4
25-Mar-10	92	0	86	0	0	5	0	1
26-Mar-10	119	0	110	0	0	6	0	3
27-Mar-10	82	0	67	0	0	9	0	6
28-Mar-10	64	0	56	0	0	4	0	4
29-Mar-10	109	0	96	0	0	6	0	7
30-Mar-10	121	2	106	0	0	8	0	5
31-Mar-10	122	0	103	0	0	11	0	8
<b>Total</b>	<b>3292</b>	<b>25</b>	<b>2291</b>	<b>30</b>	<b>540</b>	<b>268</b>	<b>0</b>	<b>138</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.8%</b>	<b>69.6%</b>	<b>0.9%</b>	<b>16.4%</b>	<b>8.1%</b>	<b>0.0%</b>	<b>4.2%</b>



**Cairns Airport**  
**Daily Runway Usage (Departures for All Aircraft Types)**  
**Mar-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Mar-10	114	0	38	0	65	8	0	3
02-Mar-10	103	0	1	0	93	6	0	3
03-Mar-10	111	0	0	0	104	5	0	2
04-Mar-10	116	0	28	0	72	9	0	7
05-Mar-10	114	0	61	0	39	9	0	5
06-Mar-10	86	0	52	0	16	12	0	6
07-Mar-10	82	0	34	0	36	10	0	2
08-Mar-10	130	0	65	0	47	14	0	4
09-Mar-10	121	0	107	0	1	11	0	2
10-Mar-10	98	0	93	0	0	2	0	3
11-Mar-10	104	0	93	0	0	9	0	2
12-Mar-10	128	0	111	0	0	9	0	8
13-Mar-10	74	0	65	0	0	8	0	1
14-Mar-10	77	0	68	0	0	6	0	3
15-Mar-10	117	0	104	0	0	10	0	3
16-Mar-10	117	0	102	0	0	12	0	3
17-Mar-10	114	0	107	0	0	5	0	2
18-Mar-10	110	0	101	0	0	7	0	2
19-Mar-10	115	0	93	0	0	14	0	8
20-Mar-10	83	0	64	0	0	12	0	7
21-Mar-10	94	0	20	0	63	8	0	3
22-Mar-10	121	0	109	0	0	8	0	4
23-Mar-10	123	0	104	0	0	18	0	1
24-Mar-10	120	0	105	0	0	12	0	3
25-Mar-10	91	0	88	0	0	3	0	0
26-Mar-10	107	1	98	0	1	6	0	1
27-Mar-10	77	0	63	0	0	8	0	6
28-Mar-10	69	0	62	0	0	4	0	3
29-Mar-10	112	0	102	0	0	6	0	4
30-Mar-10	116	0	106	0	0	8	0	2
31-Mar-10	120	0	105	0	0	9	0	6
<b>Total</b>	<b>3264</b>	<b>1</b>	<b>2349</b>	<b>0</b>	<b>537</b>	<b>268</b>	<b>0</b>	<b>109</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.0%</b>	<b>72.0%</b>	<b>0.0%</b>	<b>16.5%</b>	<b>8.2%</b>	<b>0.0%</b>	<b>3.3%</b>



**Cairns Airport**  
**Daily Runway Usage (Arrivals and Departures for All Aircraft Types)**  
**Mar-10**

<b>days</b>	<b>Totals</b>	<b>12</b>	<b>15</b>	<b>30</b>	<b>33</b>	<b>H</b>	<b>I</b>	<b>W</b>
01-Mar-10	224	0	53	5	142	16	0	8
02-Mar-10	205	0	4	4	179	12	0	6
03-Mar-10	226	0	5	9	195	11	0	6
04-Mar-10	234	0	51	6	144	18	0	15
05-Mar-10	238	1	127	2	80	18	0	10
06-Mar-10	172	2	103	0	32	23	0	12
07-Mar-10	169	1	67	0	75	21	0	5
08-Mar-10	253	0	110	2	105	29	0	7
09-Mar-10	236	2	207	0	1	22	0	4
10-Mar-10	201	0	187	0	0	7	0	7
11-Mar-10	206	0	186	0	0	16	0	4
12-Mar-10	264	2	227	0	0	20	0	15
13-Mar-10	152	0	130	0	0	17	0	5
14-Mar-10	150	0	130	0	0	13	0	7
15-Mar-10	229	1	201	0	0	20	0	7
16-Mar-10	231	3	200	0	0	21	0	7
17-Mar-10	226	1	211	0	0	10	0	4
18-Mar-10	219	0	202	0	0	14	0	3
19-Mar-10	243	1	197	0	0	28	0	17
20-Mar-10	174	2	135	0	0	24	0	13
21-Mar-10	187	0	34	2	123	17	0	11
22-Mar-10	238	3	212	0	0	15	0	8
23-Mar-10	231	1	200	0	0	27	0	3
24-Mar-10	247	3	213	0	0	24	0	7
25-Mar-10	183	0	174	0	0	8	0	1
26-Mar-10	226	1	208	0	1	12	0	4
27-Mar-10	159	0	130	0	0	17	0	12
28-Mar-10	133	0	118	0	0	8	0	7
29-Mar-10	221	0	198	0	0	12	0	11
30-Mar-10	237	2	212	0	0	16	0	7
31-Mar-10	242	0	208	0	0	20	0	14
<b>Total</b>	<b>6556</b>	<b>26</b>	<b>4640</b>	<b>30</b>	<b>1077</b>	<b>536</b>	<b>0</b>	<b>247</b>
<b>Percentage</b>	<b>100.0%</b>	<b>0.4%</b>	<b>70.8%</b>	<b>0.5%</b>	<b>16.4%</b>	<b>8.2%</b>	<b>0.0%</b>	<b>3.8%</b>



## **APPENDIX D**

Hourly movements per calendar month for arrivals and departures  
during the period January to March 2010

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**Cairns Airport**  
**Hourly Movements (Arrivals and Departures for All Aircraft Types)**  
**January 2010**

days	total	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
01-Jan-10	159	1	1	0	0	3	2	7	7	7	12	13	15	15	14	13	18	15	4	5	4	0	2	1	0
02-Jan-10	156	1	0	0	1	1	2	7	4	10	11	14	19	18	9	16	15	10	5	7	2	0	1	0	3
03-Jan-10	178	0	0	1	0	2	3	5	6	13	16	19	18	20	12	14	14	13	7	8	2	2	1	1	1
04-Jan-10	210	1	1	0	0	2	4	12	10	13	15	19	21	24	21	14	12	13	10	5	6	2	3	1	1
05-Jan-10	215	2	1	0	0	1	4	13	8	18	15	24	18	19	18	14	19	13	9	10	4	1	1	2	1
06-Jan-10	213	0	0	0	1	2	3	15	6	11	16	26	19	21	22	14	11	13	8	11	6	0	3	2	3
07-Jan-10	229	3	1	0	1	0	3	11	16	13	17	23	23	20	17	16	21	12	10	7	5	4	4	1	1
08-Jan-10	236	1	1	1	1	1	4	9	11	13	22	19	22	23	23	11	20	17	9	10	6	6	3	2	1
09-Jan-10	146	0	1	2	0	4	2	5	4	9	15	16	12	18	17	12	8	5	3	4	4	2	1	1	1
10-Jan-10	145	1	2	0	0	2	4	6	4	6	11	17	13	15	15	10	11	9	4	7	3	0	4	0	1
11-Jan-10	208	1	0	1	0	2	2	10	11	12	15	23	20	22	21	12	16	11	11	10	3	2	2	0	1
12-Jan-10	226	2	1	0	1	1	3	14	16	14	20	23	17	21	18	15	16	13	9	12	4	1	2	2	1
13-Jan-10	234	1	0	0	0	1	4	14	11	15	19	17	20	24	22	13	20	15	14	11	6	1	1	2	3
14-Jan-10	237	1	1	0	0	0	6	9	15	14	25	18	26	22	18	9	23	15	8	12	5	3	4	2	1
15-Jan-10	250	1	1	0	1	1	2	9	9	19	23	24	15	28	24	14	26	11	13	13	9	3	2	1	1
16-Jan-10	160	0	0	1	0	2	2	7	4	5	18	23	19	22	11	7	13	8	6	5	2	1	2	1	1
17-Jan-10	160	0	0	0	0	1	4	6	6	11	16	21	14	17	12	9	13	7	5	9	2	3	2	1	1
18-Jan-10	224	1	1	0	0	2	2	12	15	13	23	23	13	26	22	12	14	13	9	10	5	4	2	1	1
19-Jan-10	188	2	1	0	0	1	5	10	16	17	15	16	17	13	11	10	14	12	9	9	6	0	2	1	1
20-Jan-10	189	0	0	0	0	1	4	14	8	11	15	13	18	17	20	6	15	12	11	11	4	2	1	4	2
21-Jan-10	183	2	1	0	0	0	5	7	14	10	18	19	12	19	13	11	9	7	13	9	7	1	5	0	1
22-Jan-10	174	1	1	0	0	1	4	8	7	10	8	10	12	20	13	10	19	9	13	12	7	5	1	2	1
23-Jan-10	127	1	0	0	0	2	2	6	4	7	11	11	8	18	13	7	6	9	6	7	3	2	2	1	1
24-Jan-10	107	0	0	0	0	1	4	6	2	8	9	11	9	13	9	5	5	5	6	6	2	3	2	0	1
25-Jan-10	195	2	0	1	0	2	1	10	10	11	14	15	23	21	20	10	11	9	13	9	7	2	2	0	2
26-Jan-10	166	2	1	1	0	2	4	9	6	7	3	8	10	21	22	16	15	12	6	9	7	2	1	1	1
27-Jan-10	212	0	0	0	1	0	4	13	10	10	21	18	18	23	16	13	14	15	8	14	8	2	2	1	1
28-Jan-10	239	2	1	0	0	0	6	11	12	12	20	16	22	24	20	10	14	15	23	16	5	3	3	2	2
29-Jan-10	201	2	1	0	0	1	3	8	11	12	22	14	17	19	15	15	16	9	11	10	7	3	2	2	1
30-Jan-10	118	0	0	0	1	3	4	7	5	5	8	11	9	14	9	6	8	6	5	9	3	2	1	1	1
31-Jan-10	141	0	0	0	0	1	4	5	2	13	14	14	16	12	8	6	12	8	7	9	3	2	3	1	1
<b>Total</b>	<b>5826</b>	<b>31</b>	<b>18</b>	<b>8</b>	<b>8</b>	<b>43</b>	<b>106</b>	<b>285</b>	<b>270</b>	<b>349</b>	<b>487</b>	<b>538</b>	<b>515</b>	<b>609</b>	<b>505</b>	<b>350</b>	<b>448</b>	<b>341</b>	<b>275</b>	<b>286</b>	<b>147</b>	<b>64</b>	<b>67</b>	<b>37</b>	<b>39</b>
<b>Percentage</b>	<b>100.0</b>	<b>0.5</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.7</b>	<b>1.8</b>	<b>4.9</b>	<b>4.6</b>	<b>6.0</b>	<b>8.4</b>	<b>9.2</b>	<b>8.8</b>	<b>10.5</b>	<b>8.7</b>	<b>6.0</b>	<b>7.7</b>	<b>5.9</b>	<b>4.7</b>	<b>4.9</b>	<b>2.5</b>	<b>1.1</b>	<b>1.2</b>	<b>0.6</b>	<b>0.7</b>



**Cairns Airport**  
**Hourly Movements (Arrivals and Departures for All Aircraft Types)**  
**February 2010**

days	total	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
01-Feb-10	233	2	1	0	0	1	3	10	17	18	17	20	19	19	20	16	19	20	8	13	4	2	2	0	2
02-Feb-10	244	1	1	0	0	1	3	12	12	13	20	19	18	19	18	22	23	20	15	12	6	3	3	3	0
03-Feb-10	241	0	0	0	0	1	3	12	17	11	20	20	24	24	20	11	18	14	11	13	13	6	2	1	0
04-Feb-10	245	1	1	0	0	0	4	14	9	20	24	19	16	25	23	12	14	20	15	15	5	1	5	0	2
05-Feb-10	247	1	1	0	0	2	5	10	17	13	22	17	17	29	22	10	20	14	19	13	4	3	5	3	0
06-Feb-10	174	1	1	0	0	2	1	7	8	6	19	20	15	14	16	7	22	14	7	7	4	2	1	0	0
07-Feb-10	175	1	0	0	0	0	3	6	4	10	16	24	23	15	17	9	13	8	8	9	5	0	2	1	1
08-Feb-10	250	2	1	0	0	1	2	11	19	11	25	25	22	24	22	20	18	9	14	14	5	0	3	1	1
09-Feb-10	233	3	2	2	0	1	3	14	15	13	19	23	21	17	15	10	18	16	12	18	6	3	2	0	0
10-Feb-10	248	0	0	1	1	1	5	17	18	10	16	21	28	30	17	15	17	14	12	12	6	5	0	0	2
11-Feb-10	259	1	1	0	0	0	5	14	16	17	26	21	19	30	19	16	20	16	10	12	6	5	4	1	0
12-Feb-10	279	2	2	1	0	1	6	11	13	19	27	23	22	29	22	11	24	18	16	15	8	4	0	3	2
13-Feb-10	203	1	0	1	0	1	5	7	12	15	23	27	18	21	11	11	19	8	9	7	2	3	2	0	0
14-Feb-10	189	0	0	0	0	0	6	5	9	13	17	24	19	21	12	5	20	13	8	7	5	1	1	1	2
15-Feb-10	273	1	1	0	0	4	3	11	23	13	25	27	31	29	21	12	18	16	10	14	5	4	2	0	3
16-Feb-10	239	1	2	1	0	2	6	10	12	20	18	24	27	18	14	14	22	12	10	10	6	4	4	2	0
17-Feb-10	270	0	0	0	0	1	3	14	18	19	18	29	19	28	24	17	26	16	11	15	6	3	3	0	0
18-Feb-10	241	2	1	0	0	0	4	10	16	15	24	26	18	22	15	11	22	16	18	10	5	3	3	0	0
19-Feb-10	244	2	1	0	0	1	2	11	12	18	19	15	12	27	18	15	30	16	14	14	8	2	2	4	1
20-Feb-10	162	1	0	1	1	2	4	11	8	7	20	22	14	19	8	10	9	7	4	7	2	1	3	1	0
21-Feb-10	197	0	1	0	0	1	3	6	7	11	13	25	23	21	15	12	22	12	7	8	4	2	1	2	1
22-Feb-10	204	2	1	1	0	2	2	9	13	10	17	16	19	24	12	15	14	14	8	11	6	1	2	2	3
23-Feb-10	225	2	3	0	1	0	6	11	11	13	17	27	17	19	18	8	20	14	8	16	7	2	3	1	1
24-Feb-10	255	1	0	0	1	2	4	14	17	12	18	16	20	29	19	15	24	20	13	16	9	2	1	1	1
25-Feb-10	219	1	1	0	0	0	7	8	17	15	19	21	20	18	13	9	14	20	12	11	9	2	1	1	0
26-Feb-10	227	2	1	0	0	1	4	13	7	18	22	17	12	25	19	9	19	11	12	17	5	6	4	0	3
27-Feb-10	169	2	1	1	0	2	2	6	5	8	17	19	16	19	18	15	15	6	5	5	4	1	2	0	0
28-Feb-10	157	0	0	0	0	1	3	6	5	6	10	21	12	23	15	8	14	5	10	7	4	2	3	0	2
<b>Total</b>	<b>6302</b>	<b>33</b>	<b>24</b>	<b>9</b>	<b>4</b>	<b>31</b>	<b>107</b>	<b>290</b>	<b>357</b>	<b>374</b>	<b>548</b>	<b>608</b>	<b>541</b>	<b>638</b>	<b>483</b>	<b>345</b>	<b>534</b>	<b>389</b>	<b>306</b>	<b>328</b>	<b>159</b>	<b>73</b>	<b>66</b>	<b>28</b>	<b>27</b>
<b>Percentage</b>	<b>100.0</b>	<b>0.5</b>	<b>0.4</b>	<b>0.1</b>	<b>0.1</b>	<b>0.5</b>	<b>1.7</b>	<b>4.6</b>	<b>5.7</b>	<b>5.9</b>	<b>8.7</b>	<b>9.6</b>	<b>8.6</b>	<b>10.1</b>	<b>7.7</b>	<b>5.5</b>	<b>8.5</b>	<b>6.2</b>	<b>4.9</b>	<b>5.2</b>	<b>2.5</b>	<b>1.2</b>	<b>1.0</b>	<b>0.4</b>	<b>0.4</b>



**Cairns Airport  
Hourly Movements (Arrivals and Departures for All Aircraft Types)  
March 2010**

days	total	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
01-Mar-10	224	1	1	0	0	2	2	8	15	17	21	27	18	21	16	14	16	14	9	9	4	5	1	2	1
02-Mar-10	205	1	1	0	0	1	3	10	13	14	21	20	16	20	16	14	13	10	8	10	8	4	1	1	0
03-Mar-10	226	0	1	0	0	1	4	14	18	14	18	21	17	23	20	7	18	15	11	14	6	1	2	1	0
04-Mar-10	234	2	3	0	1	1	5	8	13	14	30	24	12	22	21	9	16	14	14	8	11	2	2	1	1
05-Mar-10	238	1	1	0	0	1	4	10	10	16	22	23	19	26	18	13	21	14	10	12	6	5	3	2	1
06-Mar-10	172	0	0	0	0	2	2	6	9	5	18	18	23	23	8	16	14	6	6	7	3	2	1	3	0
07-Mar-10	169	0	1	0	0	1	4	6	6	12	12	20	17	20	18	7	11	7	7	9	7	1	2	1	0
08-Mar-10	253	2	1	1	1	2	3	12	13	19	21	22	19	31	18	12	23	14	11	12	8	2	4	2	0
09-Mar-10	236	2	1	0	0	2	4	13	15	18	19	22	17	20	20	14	15	16	13	13	6	2	3	1	0
10-Mar-10	201	0	0	0	0	3	7	13	16	12	12	18	17	17	21	8	11	13	7	11	10	3	2	0	0
11-Mar-10	206	1	1	0	0	0	7	9	15	11	15	20	16	21	17	9	17	11	12	12	7	0	1	3	1
12-Mar-10	264	2	1	0	1	2	2	17	8	11	24	27	11	27	21	22	23	20	14	12	8	4	3	2	2
13-Mar-10	152	0	0	0	2	2	2	9	6	7	14	9	18	17	12	14	15	9	4	5	3	1	3	0	0
14-Mar-10	150	0	1	0	0	1	3	6	4	5	11	22	15	17	14	10	5	9	10	9	2	1	2	2	1
15-Mar-10	229	1	1	0	0	2	3	11	15	11	16	16	16	26	22	16	21	19	10	10	5	4	2	0	2
16-Mar-10	231	1	0	0	0	1	4	13	15	18	20	18	18	22	17	14	17	17	10	16	5	2	2	0	1
17-Mar-10	226	0	0	0	0	1	4	13	15	13	18	19	16	23	15	10	21	14	13	13	3	8	3	3	1
18-Mar-10	219	1	0	0	0	1	5	8	12	10	18	23	23	24	12	12	17	17	10	12	6	2	3	1	2
19-Mar-10	243	2	0	0	1	1	2	13	9	12	18	21	25	27	18	17	26	15	9	12	7	5	2	0	1
20-Mar-10	174	2	0	1	1	3	4	8	4	6	18	14	16	24	12	11	12	14	7	7	1	2	3	0	4
21-Mar-10	187	1	0	0	0	1	4	4	6	16	14	22	19	20	15	11	16	9	6	8	5	1	4	1	4
22-Mar-10	238	1	1	0	1	2	3	12	18	17	18	18	21	29	16	12	14	14	17	10	5	3	2	2	2
23-Mar-10	231	1	1	0	1	1	6	10	12	14	18	19	18	18	21	15	22	15	11	12	9	1	2	2	2
24-Mar-10	247	1	1	0	0	1	5	12	16	9	27	23	18	23	22	12	17	17	14	13	6	3	5	1	1
25-Mar-10	183	1	0	0	0	0	6	8	13	8	19	14	12	13	13	17	12	9	13	12	5	1	2	3	2
26-Mar-10	226	2	1	0	1	1	4	17	13	11	13	15	16	21	20	20	16	10	11	15	9	2	3	4	1
27-Mar-10	159	1	1	0	2	2	2	9	6	6	15	15	15	21	13	12	12	5	4	7	4	1	2	3	1
28-Mar-10	133	1	0	0	0	1	5	4	3	8	10	16	9	18	7	10	10	7	6	7	5	2	1	1	2
29-Mar-10	221	2	0	0	0	1	3	10	13	11	16	21	11	25	17	12	25	15	11	12	6	4	3	0	3
30-Mar-10	237	1	0	0	0	1	4	13	13	12	20	13	24	19	18	16	22	19	15	12	5	2	4	2	2
31-Mar-10	242	1	1	0	0	1	7	13	17	14	16	19	15	16	21	11	22	18	17	12	8	5	2	3	3
<b>Total</b>	<b>6556</b>	<b>32</b>	<b>20</b>	<b>2</b>	<b>12</b>	<b>42</b>	<b>123</b>	<b>319</b>	<b>361</b>	<b>371</b>	<b>552</b>	<b>599</b>	<b>527</b>	<b>674</b>	<b>519</b>	<b>397</b>	<b>520</b>	<b>406</b>	<b>320</b>	<b>333</b>	<b>183</b>	<b>81</b>	<b>75</b>	<b>47</b>	<b>41</b>
<b>Percentage</b>	<b>100.0</b>	<b>0.5</b>	<b>0.3</b>	<b>0.0</b>	<b>0.2</b>	<b>0.6</b>	<b>1.9</b>	<b>4.9</b>	<b>5.5</b>	<b>5.7</b>	<b>8.4</b>	<b>9.1</b>	<b>8.0</b>	<b>10.3</b>	<b>7.9</b>	<b>6.1</b>	<b>7.9</b>	<b>6.2</b>	<b>4.9</b>	<b>5.1</b>	<b>2.8</b>	<b>1.2</b>	<b>1.1</b>	<b>0.7</b>	<b>0.6</b>



## **APPENDIX E**

Aircraft average noise levels

January to March 2010

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**CAIRNS AIRPORT**  
**Aircraft Average Noise Levels**  
**First Quarter 2010 and Previous Four Quarters**  
**Location: Yorkeys Knob NMT 9**

TYPE	DESCRIPTION	OPERATION	RUNWAY	MOVEMENTS	CORRELATED NOISE EVENTS	MEAN MAXIMUM SOUND LEVEL (Std Dev) , dB(A)				
						10Q1	RESULTS FROM PREVIOUS QUARTERS*			
							09Q4	09Q3	09Q2	09Q1
B744	Boeing - 747-400	A	15	7	7	81.1( 1.6 )	80.7(0.9)			
B763	Boeing - 767-300	A	15	100	96	78.5( 1.9 )	78.7(1.4)	78.7(1.6)	79.2(1.3)	78.4(1.7)
B734	Boeing - 737-400	A	15	96	74	78.2( 1.5 )	77.7(2.5)	77.4(1.7)	78.1(2.1)	77.5(1.4)
B73Y	Boeing 737-300 Freighter	A	15	42	34	77.6( 1.8 )	77.1(1.8)	77.0(1.6)	77.3(2.0)	77.2(1.9)
MD82	MD-80 Series	A	15	11	10	77.2( 2.3 )	75.8(1.5)		75.1(1.5)	
A333	Airbus - A330	A	15	69	68	77.1( 1.6 )	77.6(1.0)	77.5(1.0)	77.6(0.9)	76.9(1.3)
A332	Airbus - A332	A	15	113	109	77.1( 1.8 )	76.8(1.1)	77.2(1.2)	76.7(0.9)	76.5(1.6)
B738	Boeing - 737-800	A	15	699	473	75.9( 1.1 )	75.9(1.1)	75.9(1.2)	76.1(0.8)	75.4(1.0)
E190	Embraer ERJ-190	A	15	66	39	75.4( 1.6 )	74.6(1.5)	74.7(2.6)	74.7(2.8)	
B737	Boeing - 737-700	A	15	192	125	74.9( 1.0 )	74.5(0.8)	74.8(0.9)	74.6(0.8)	74.1(1.0)
A321	Airbus - A321	A	15	213	155	74.8( 1.4 )	74.9(0.9)	75.1(0.8)	75.3(0.8)	74.4(1.1)
B190	Beech - Beech 1900/C-12J	A	15	89	57	74.5( 1.1 )	74.6(1.6)	74.8(1.4)	74.7(1.4)	73.8(1.2)
DH8B	Dash 8, DHC8 - 200	A	15	42	33	74.4( 2.0 )	74.7(2.8)	76.3(1.7)	75.8(1.6)	75.3(0.8)
A320	Airbus - A320	A	15	353	277	73.9( 1.2 )	73.9(1.1)	74.0(1.3)	74.2(1.0)	73.6(1.1)
E170	Embraer – ERJ - 170/175	A	15	67	50	73.4( 0.8 )	73.0(0.9)	73.2(0.7)	73.4(0.9)	
DH8C	Dash 8, DHC8 - 300	A	15	406	282	72.7( 2.1 )	72.5(2.0)	72.5(2.1)	72.6(1.8)	72.4(2.3)
D328	Dornier GmbH - Do 328 Series	A	15	43	35	72.4( 1.5 )	72.3(1.4)	71.9(1.8)	71.8(1.6)	72.0(1.3)
F100	Fokker 100	A	15	147	110	72.3( 2.2 )	72.7(1.8)	72.1(1.9)	72.3(2.1)	71.9(2.1)
C441	Cessna - Conquest 2 - 441	A	15	17	13	72.2( 2.4 )	71.2(3.1)	70.3(1.2)		
AC90	Rockwell Com 690, 840/900	A	15	16	9	71.8( 1.8 )				71.4(3.8)
DH8A	Dash 8, DHC8 - 100	A	15	418	292	71.5( 2.7 )	71.5(2.8)	71.5(2.8)	71.9(2.8)	71.1(2.6)
DH8D	Dash 8, DHC8 - 400	A	15	307	232	71.1( 2.0 )	70.6(2.1)	70.3(1.8)	70.3(1.9)	69.9(1.8)
E120	Embraer - EMB-120	A	15	43	28	71.0( 1.0 )	71.5(1.2)	71.5(1.6)	71.4(1.7)	70.7(1.3)
B712	Boeing - 717-200	A	15	339	222	71.0( 1.1 )	71.2(1.1)	71.2(1.0)	70.9(1.1)	70.7(1.2)
C404	Cessna - Titan 404	A	15	72	49	70.7( 1.4 )	71.0(1.9)	70.7(2.0)	70.2(2.2)	70.0(2.0)

\*Data in the quarter 6 columns apply to the current quarter only.



**CAIRNS AIRPORT**  
**Aircraft Average Noise Levels**  
**First Quarter 2010 and Previous Four Quarters**  
**Location: Holloways Beach NMT 2**

TYPE	DESCRIPTION	OPERATION	RUNWAY	MOVEMENTS	CORRELATED NOISE EVENTS	MEAN MAXIMUM SOUND LEVEL (Std Dev) , dB(A)				
						10Q1	RESULTS FROM PREVIOUS QUARTERS*			
							09Q4	09Q3	09Q2	09Q1
B744	Boeing - 747-400	A	15	7	7	91.6( 1.8 )	91.2(1.0)			
B763	Boeing - 767-300	A	15	100	99	89.5( 2.1 )	90.1(1.9)	89.8(1.8)	90.9(2.0)	89.3(2.3)
B734	Boeing - 737-400	A	15	96	96	88.5( 1.3 )	88.5(1.4)	87.8(1.5)	88.6(1.0)	87.9(1.3)
B73Y	Boeing 737-300 Freighter	A	15	42	40	88.0( 1.6 )	87.4(1.1)	87.7(1.0)	87.9(1.2)	87.0(2.5)
A332	Airbus – A332	A	15	113	112	87.7( 2.0 )	87.5(1.2)	88.2(2.2)	87.5(1.7)	87.3(2.0)
A333	Airbus – A330	A	15	69	69	87.5( 1.6 )	88.0(1.0)	87.8(1.0)	88.1(1.1)	87.0(1.3)
MD82	MD-80 Series	A	15	11	11	86.8( 2.1 )				
B738	Boeing - 737-800	A	15	699	695	86.0( 1.4 )	86.1(1.0)	85.9(1.1)	86.2(1.0)	85.5(1.1)
DH8A	Dash 8, DHC8 - 100	A	15	418	414	86.0( 1.6 )	85.9(1.9)	86.0(1.8)	85.7(2.4)	85.3(1.8)
A333	Airbus – A330	D	33	24	23	85.9( 2.3 )	87.8(1.8)	89.2(1.8)	88.6(1.7)	85.9(3.0)
DH8B	Dash 8, DHC8 - 200	A	15	42	43	85.5( 2.5 )	86.2(2.4)	86.6(1.5)	87.3(1.1)	86.2(1.1)
B737	Boeing - 737-700	A	15	192	192	85.0( 1.0 )	85.0(0.9)	84.8(0.8)	85.0(0.9)	84.2(1.0)
A321	Airbus – A321	A	15	213	210	84.9( 1.7 )	85.0(1.2)	85.2(1.1)	85.6(1.4)	84.0(1.2)
DH8C	Dash 8, DHC8 - 300	A	15	406	403	84.6( 1.5 )	84.8(1.5)	85.0(1.6)	84.6(1.9)	83.9(1.9)
E190	Embraer ERJ-190	A	15	66	65	84.6( 1.3 )	85.1(1.0)	84.7(1.1)	84.8(1.1)	
A320	Airbus – A320	A	15	353	346	84.2( 1.1 )	84.1(1.1)	84.1(1.1)	84.4(1.0)	83.5(1.1)
E170	Embraer – ERJ - 170/175	A	15	67	65	83.3( 1.4 )	82.6(1.1)	83.2(1.0)	83.4(1.2)	
F100	Fokker BV - Fokker 100	A	15	147	146	83.2( 2.1 )	83.6(2.2)	83.1(2.1)	83.8(2.0)	83.1(2.2)
B190	Beech - Beech 1900/C-12J	A	15	89	87	83.1( 1.6 )	83.2(1.7)	83.5(1.4)	83.3(1.8)	82.4(1.5)
D328	Dornier GmbH - Do 328 Series	A	15	43	44	82.5( 2.3 )	82.2(1.1)	81.8(1.6)	81.8(1.5)	81.0(2.8)
A332	Airbus – A332	D	33	32	32	82.3( 1.6 )	83.5(1.9)	83.0(1.0)	83.0(0.7)	82.0(1.4)
C560	Cessna - Citation 5	D	33	6	6	81.9( 2.4 )				
B712	Boeing - 717-200	A	15	339	338	81.6( 1.0 )	81.7(1.1)	81.5(1.2)	81.6(1.1)	81.1(1.1)
B734	Boeing - 737-400	D	33	34	31	81.5( 1.6 )	83.7(0.8)			81.8(1.4)
E120	Embraer EMB-120	A	15	43	43	80.7( 1.2 )				

\*Data in the quarter 6 columns apply to the current quarter only.



**CAIRNS AIRPORT**  
**Aircraft Average Noise Levels**  
**First Quarter 2010 and Previous Four Quarters**  
**Location: Cairns North NMT 3**

TYPE	DESCRIPTION	OPERATION	RUNWAY	MOVEMENTS	CORRELATED NOISE EVENTS	MEAN MAXIMUM SOUND LEVEL (Std Dev) , dB(A)				
						10Q1	RESULTS FROM PREVIOUS QUARTERS*			
							09Q4	09Q3	09Q2	09Q1
B744	Boeing - 747-400	D	15	7	7	92.6( 2.9 )	91.0(3.3)			
A333	Airbus – A330	D	15	61	61	89.9( 2.5 )	88.8(1.8)	88.6(1.8)	88.7(2.1)	89.0(3.0)
A332	Airbus – A332	A	33	6	6	89.2( 4.6 )				
B763	Boeing - 767-300	A	33	34	34	88.2( 2.3 )	88.8(2.2)	89.2(2.3)	90.1(2.6)	89.4(2.6)
B734	Boeing - 737-400	A	33	35	32	87.6( 1.6 )	87.4(1.0)			87.9(1.3)
MD82	MD-80 Series	D	15	7	7	87.5( 2.4 )			87.3(2.8)	
A332	Airbus – A332	D	15	87	85	86.9( 2.6 )	87.8(2.4)	86.4(3.0)	86.0(2.8)	88.5(2.6)
B73Y	Boeing 737-300 Freighter	A	33	7	7	86.7( 1.4 )				
A333	Airbus – A330	A	33	16	16	86.1( 1.7 )	86.3(0.8)	86.4(1.4)		86.6(0.7)
A321	Airbus – A321	D	15	178	174	85.8( 2.8 )	85.6(2.8)	85.3(2.6)	85.2(2.4)	85.9(3.3)
B734	Boeing - 737-400	D	15	96	94	85.4( 2.4 )	85.9(2.0)	85.7(1.9)	86.1(2.2)	86.3(2.8)
B763	Boeing - 767-300	D	33	50	9	84.9( 1.5 )				
B738	Boeing - 737-800	A	33	194	190	84.4( 1.1 )	84.4(1.0)	84.3(2.4)	84.1(0.9)	84.9(1.0)
B763	Boeing - 767-300	D	15	84	82	83.9( 2.9 )	85.4(2.4)	84.1(2.7)	84.5(3.0)	85.0(2.9)
B738	Boeing - 737-800	D	15	678	664	83.7( 2.9 )	84.3(2.5)	84.2(2.5)	83.9(2.7)	84.5(2.9)
DH8A	Dash 8, DHC8 - 100	A	33	110	109	83.4( 1.8 )	84.0(1.9)	84.3(1.5)	83.7(2.3)	83.9(1.7)
E190	Embraer ERJ-190	A	33	28	26	83.4( 1.5 )	83.4(1.5)			
B737	Boeing - 737-700	A	33	55	53	83.2( 1.0 )	83.4(0.7)	83.7(0.6)	82.5(0.9)	83.7(1.0)
F100	Fokker BV - Fokker 100	D	15	143	141	83.2( 3.9 )	83.6(3.4)	83.7(3.3)	82.7(3.6)	84.1(4.4)
A321	Airbus – A321	A	33	26	26	82.6( 1.4 )	82.0(1.0)	82.8(1.0)		
DH8C	Dash 8, DHC8 - 300	A	33	128	126	82.5( 1.4 )	82.3(1.4)	82.7(1.1)	81.7(2.1)	82.3(2.4)
E190	Embraer ERJ-190	D	15	70	66	82.4( 2.3 )	82.4(2.8)	82.2(1.7)	82.4(2.3)	
H25B	(BAe HS 125 Series 700/800	D	15	6	6	82.2( 2.9 )	81.4(2.1)	81.7(3.7)	79.7(3.4)	
A320	Airbus – A320	A	33	93	93	82.0( 1.5 )	81.8(1.4)	81.8(0.8)	81.5(1.4)	82.4(0.8)
D328	Dornier GmbH - Do 328 Series	A	33	16	17	81.6( 1.8 )	81.7(1.4)	81.8(2.6)		

\*Data in the quarter 6 columns apply to the current quarter only.