Appendix D4:A Aircraft details

This appendix provides the details on aircraft that was used in calculating aircraft movements and emissions, both air quality and GHG.

Table 1 Summary of aircraft that used SCA from November 2011 to April 2012 and aircraft types for those included in EDMS

Aircraft Category	Aircraft number	EDMS aircraft type	EDMS engine type	Movements recorded in 6-month dataset		Proportion of category
				Arrivals	Departures	
Commercial	A320	Airbus A320-200 Series	V2527-A5	1001	997	61%
	B738	Boeing 737-800 Series	CFM56-7B26	296	283	18%
	BE20	Raytheon Super King Air 200	PT6A-42	98	103	6%
	B737	Boeing 737-700 Series	CFM56-7B22	98	97	6%
	DH8C	DeHavilland DHC-8-300	PW123	65	64	4%
	DH8A	DeHavilland DHC-8-100	PW120A	28	28	2%
	C441	Cessna 441 Conquest II	TPE331-10	18	19	1%
	C750	Cessna 750 Citation X	AE3007C Type 2	14	15	1%
	C550	Cessna 550 Citation II	JT15D-4 series	14	15	1%
	MD82	Boeing MD-82	JT8D-217C E_Kit	4	4	0.2%
	BN2P	Britten-Norman BN-2 Islander	250B17B	6	1	0.2%
General Aviation	C182	Cessna 182	IO-360-B	387	401	39%
	C208	Cessna 208 Caravan	PT6A-114A	284	281	28%
	C310	Cessna 310	TIO-540-J2B2	53	55	5%
	C414	Cessna 414	TIO-540-J2B2	44	44	4%
	C172	Cessna 172 SkyHawk	IO-360-B	32	36	3%
	P68	Partenavia P.68 Victor	IO-360-B	31	31	3%
	PA31	Piper PA-31 Navajo	TIO-540-J2B2	30	31	3%
	AC50	Rockwell Commander 500	TIO-540-J2B2	30	29	3%
	BE36	Raytheon Beech Bonanza 36	TIO-540-J2B2	17	15	2%
	SR22	Cirrus SR22	TIO-540-J2B2	13	13	1%
	AC90	Rockwell Commander 690	TPE331-10	11	12	1%
	BE58	Raytheon Beech Baron 58	TIO-540-J2B2	10	10	1%
	C25A	Cessna 525 Citation Jet	JT15D-1 series	9	10	1%

Aircraft Category	Aircraft number	EDMS aircraft type	EDMS engine type	Movements recorded in 6-month dataset		Proportion of category
				Arrivals	Departures	
	C650	Cessna 650 Citation III	TFE731-3	7	9	1%
	PC12	Pilatus PC-12	PT6A-67	8	8	1%
	PA34	Piper PA-34 Seneca	IO-360-B	8	6	1%
	C560	Cessna 560 Citation V	JT15D, -5A, -5B	6	5	1%
	LJ45	Bombardier Learjet 45	TFE731-2-2B	5	6	1%
	SR20	Cirrus SR20	IO-360-B	7	3	0.5%
	BE55	Raytheon Beech 55 Baron	TIO-540-J2B2	4	4	0.4%
	C210	Cessna 210 Centurion	TIO-540-J2B2	4	4	0.4%
Helicopter	B06	Bell 206 JetRanger	250B17B	146	146	88%
	A119	Agusta A-109	250B17B	11	11	7%
	H60	Sikorsky SH-60 Sea Hawk	T700-GE-401-401C	11	8	6%

Table 2 Particulate Matter Emission Factors for non-ICAO Certified Engines used in Emission Estimation

Aircraft group	Aircraft	Typical engine (ACERT)	PM emission factor (kg/LTO)
Helicopter	Agusta A-109	PW206C	0.00451832
	Bell 206 JetRanger	Allison 250-C20J	0.00227226
	Sikorsky Seahawk	T700-GE-401C	0.009704492

Table 3 LTO factors used in GHG emission calculations

Type code	Type name	Engine configuration[1]	Passenger capacity	Assumed passenger numbers	Source of LTO fuel consumption factor[2]	Fuel (kg/LTO)	Energy (GJ/LTO)	GHG emissions[3] (kg CO_2-e /LTO)
Commercial								
A320	A-320	2J	179	132	IPCC	770	35	2446
A321	A-321	2J	220	163	IPCC	960	44	3049
A330	Airbus 320	2J	292	216	IPCC	2230	102	7083
A380	Airbus 321	4J	467	346	ACERT	4214	192	13386
B717	Airbus 330	2J	120	89	IPCC	680	31	2160
B737	Airbus 380	2J	127	94	IPCC	780	36	2478
B738	Boeing 717	2J	169	125	IPCC	880	40	2795
B747	Boeing 737 (300-500)	4J	354	262	IPCC	3240	148	10292
B767	Boeing 737 (600-900)	2J	245	181	IPCC	1780	81	5654
B777	Boeing 747 (400)	2J	361	267	IPCC	2560	117	8132

Type code	Type name	Engine configuration[1]	Passenger capacity	Assumed passenger numbers	Source of LTO fuel consumption factor[2]	Fuel (kg/LTO)	Energy (GJ/LTO)	GHG emissions[3] (kg CO_2-e /LTO)
BE20	200 Super King Air	2T	13	13	ACERT	102	5	324
BE30	BEECH 300 Super King Air	2T	10	10	ACERT	95	4	302
BN2P	Britten-Norman BN-2 Islander	2P	10	10	ACERT	11	0	33
C441	Cessna 441	2T	10	10	ACERT	82	4	260
C550	Cessna 550	2J	10	10	IPCC	340	16	1080
C551	CESSNA 551 Citation II SP	2J	10	10	ACERT	99	5	314
C750	Citation 10	2J	12	12	ACERT	99	5	314
CL60	Challenger 605	2J	19	19	ACERT	330	15	1048
CRJX	Regional Jet CRJ-1000	2J	95	70	IPCC for F100	760	35	2414
D228	Fairchild Dornier 228	2T	16	16	ACERT	82	4	260
D328	D328	2T	30	22	ACERT	82	4	260
DH8A	E-9 Dash 8	2T	53	39	ACERT	263	12	835
DH8B	DHC-8-200 Dash 8	2T	53	39	ACERT	263	12	835
DH8C	Dash 8 (300)	2T	53	39	ACERT	263	12	835
DHC8	Dash 8 (400)	2T	53	39	ACERT	263	12	835
E135	ERJ-135	2J	35	26	IPCC for ERJ-145	310	14	985
F100	Fokker F100	2J	100	74	IPCC	760	35	2414
GL5T	Global 5000	2J	14	14	ACERT	608	28	1931
GLF4	Gulfstream 4	2J	14	14	ACERT	280	13	889
MD82	MD-82	2J	152	112	IPCC for md-80	1010	46	3208
NOMA	GAF Nomad	2T	10	10	ACERT	82	4	246
SW4	Swearingen Metroliner	2T	19	19	IPCC for Dash-8-100 and ATR72-500	200	9	635
SW4	Fairchild Swearingen Metro 23	2T	19	19	ACERT	82	4	260
								General Aviation
AA5	Grumman AA-5 Traveler	1P	3	3	ACERT	11	0	33
AC50	500 Commander 500	2P	4	4	Set to Bell JetRanger 206B from ACERT	35	2	111
AC90	Rockwell Turbo Commander 690	2T	5	5	ACERT	82	4	260
B350	B300 Super King Air 350	2T	8	8	ACERT	95	4	302
BE33	33 Debonair, Bonanza (E-24)	1P	3	3	ACERT	11	0	33
BE35	Beech BE-35 Bonanza	1P	3	3	ACERT	11	0	33
BE36	36 Bonanza (piston)	1P	3	3	ACERT	11	0	33
BE55	55 Baron	2P	3	3	ACERT	11	0	33
BE58	58 Baron	2P	3	3	ACERT	11	0	33

Type code	Type name	Engine configuration[1]	Passenger capacity	Assumed passenger numbers	Source of LTO fuel consumption factor[2]	Fuel (kg/LTO)	Energy (GJ/LTO)	GHG emissions[3] (kg CO_2-e /LTO)
BE60	60 Duke	2P	3	3	ACERT	11	0	33
BE76	76 Duchess	2P	3	3	ACERT	11	0	33
C172	Cessna 172	1P	3	3	ACERT	8	0	24
C180	Cessna 180	1P	3	3	ACERT	11	0	33
C182	Cessna 182	1P	3	3	ACERT	11	0	33
C205	Cessna 205	1P	3	3	ACERT	11	0	33
C206	Cessna 206	1P	3	3	ACERT	11	0	33
C208	Cessna 208	1T	3	3	ACERT	66	3	210
C210	Cessna 210	1P	3	3	ACERT	11	0	33
C25A	Cessna 525A Citation CJ2	2J	5	5	ACERT	99	5	314
C303	Cessna 303	2P	3	3	ACERT	11	0	33
C310	Cessna 310	2P	3	3	ACERT	11	0	33
C340	Cessna 340	2P	4	4	ACERT	11	0	33
C402	Cessna 402	2P	8	8	ACERT	45	2	135
C414	Cessna 414	2P	6	6	ACERT	11	0	33
C500	Cessna 500	2J	6	6	IPCC for Cessna 525/560	340	16	1080
C501	Cessna 501	2J	6	6	IPCC for Cessna 525/560	340	16	1080
C510	Cessna 510	2J	4	4	IPCC for Cessna 525/560	340	16	1080
C525	Cessna 525	2J	6	6	IPCC	340	16	1080
C560	UC-35 Citation Ultra	2J	8	8	ACERT	99	5	314
C650	Citation 7	2J	7	7	ACERT	99	5	314
C680	Citation Sovereign	2J	8	8	ACERT	99	5	314
C72R	Cessna 172RG	1P	3	3	ACERT	8	0	24
C77R	Cessna 177RG Cardinal RG	1P	3	3	ACERT	8	0	24
C82R	AVIONES COLOMBIA R182	1P	3	3	ACERT	11	0	33
DA40	Diamond	1P	1	1	ACERT	6	0	19
GLF5	Gulfstream G500	2J	8	8	IPCC	600	27	1906
H25B	U-125	2J	8	8	IPCC for C525/560	340	16	1080
JET	unidentified	2J	8	8	IPCC	340	16	1080
LA4	LAKE Buccaneer	1P	3	3	ACERT	11	0	33
LJ35	RC-36	2J	8	8	IPCC for C525/559	340	16	1080
LJ45	LJ45	2J	8	8	IPCC for C525/560	340	16	1080
LNC2	Lancair 200/235/320/360	1P	3	3	ACERT	11	0	33

Type code	Type name	Engine configuration[1]	Passenger capacity	Assumed passenger numbers	Source of LTO fuel consumption factor[2]	Fuel (kg/LTO)	Energy (GJ/LTO)	GHG emissions[3] (kg CO_2-e /LTO)
LNC4	Lancair 4 (N654DM)	1P	3	3	ACERT	11	0	33
M20P	Mooney 220 (AEROSTAR)	1P	3	3	ACERT	11	0	33
M20T	Mooney Bravo (M-20K)	1P	3	3	ACERT	11	1	35
P28A	Piper Archer	1P	3	3	ACERT	11	0	33
P28B	Turbo Dakota	1P	3	3	ACERT	11	0	33
P28R	AICSA PA-28R Cherokee Arrow, Turbo Arrow 3	1P	3	3	ACERT	11	0	33
P32R	Cherokee Lance	1P	3	3	ACERT	11	1	35
P46T	Malibu Meridian	1T	6	6	ACERT	102	5	306
P68	P-67	2P	3	3	ACERT	18	1	54
PA24	Comanche	1P	3	3	ACERT	11	0	33
PA30	PA-30 Twin Comanche	2P	3	3	ACERT	18	1	54
PA31	Chieftain	2P	6	6	ACERT	18	1	54
PA32	Cherokee Six	1P	4	4	ACERT	11	0	33
PA34	PA-34 Seneca	2P	4	4	ACERT	18	1	54
PA38	AICSA PA-38 Tomahawk	1P	3	3	ACERT	11	0	33
PA46	Malibu	1P	3	3	ACERT	11	1	35
PC12	Pilatus PC-12	1T	9	9	ACERT	95	4	302
PRM1	Hawker Beechcraft 390 Premier 1	2J	7	7	ACERT	94	4	299
R22	R-22 Beta	1P	3	3	ACERT	11	0	33
R44	Clipper	1P	3	3	ACERT	11	0	33
SR20	SR-20	1P	3	3	ACERT	11	0	33
SR22	SR-22	1P	3	3	ACERT	11	0	33
WW24	Westwind (1124)	2J	7	7	IPCC for Cessna 525/560	340	16	1080
								Helicopter
A109	Agusta A-109	2T	3	3	Set to Bell JetRanger 206B from ACERT	35	2	111
A119	AgustaWestland AW119 Koala	1T	1	1	ACERT	13	1	41
A139	AgustaWestland AW-139	2T	3	3	Set to Bell JetRanger 206B from ACERT	35	2	111
AS50	Aerospatiale AS-350 Ecureuil	1T	1	1	ACERT	13	1	41
AS55	Aerospatiale TwinStar	2T	3	3	Set to Bell JetRanger 206B from ACERT	35	2	111
AS65	Aerospatiale AS-365 Dauphin	2T	3	3	Set to Bell JetRanger	35	2	111

Type code	Type name	Engine configuration[1]	Passenger capacity	Assumed passenger numbers	Source of LTO fuel consumption factor[2]	Fuel (kg/LTO)	Energy (GJ/LTO)	GHG emissions[3] (kg CO_2-e /LTO)
	2				206B from ACERT			
B06	Bell B-206 JetRanger	1T	3	3	ACERT	35	2	111
B407	Bell B-407	1T	1	1	ACERT	35	2	111
B412	Bell B-412	2T	3	3	Set to Bell JetRanger 206B from ACERT	35	2	111
BK17	MBB BK 117	2T	3	3	Set to Bell JetRanger 206B from ACERT	35	2	111
H60	Blackhawk	2T	13	13	Set to Bell JetRanger 206B from ACERT	35	2	111
HEL	Unidentified	1T	1	1	ACERT	13	1	39
NH90	AgustaWestland	2T	13	13	Set to Bell JetRanger 206B from ACERT	35	2	111
S76	S-75	2T	3	3	Set to Bell JetRanger 206B from ACERT	35	2	111
SGL	Unidentified	1T	3	3	ACERT	13	1	41
SSGL	Unidentified	1T	3	3	ACERT	13	1	41

[1] Codes for engine configuration include a number for the number of engines and the following engine types: 'J' Jet, 'T' Turboprop and 'P' Piston. Jets and turboprops use kerosene fuel (jet fuel) and piston engines use gasoline (avgas)
[2] IPCC is from reference IPCC, 2006; ACERT refers to Simpson et al., 2012
[3] Based on Australian National Greenhouse Accounts factors, DCCEE, 2012a