

List of References

- African Airline Association (AFRAA), 2000, Traffic Highlights. Annual report of the secretary General, [www.afraa.net/docs/Annual report of the secretary general.doc](http://www.afraa.net/docs/Annual%20report%20of%20the%20secretary%20general.doc), downloaded 3/3/03 - 17.20pm.
- Air Transport Association of America Inc. (ATA), 1963, ATA Cost Method. <http://www.airlines.org/publications>, downloaded 21/11/02 - 09.54.
- Air claims CASE Database (2000), Aircraft Fleets in Africa - Who Operates What, African Aviation, vol. 2, June 2000.
- Airliners.net (2003), Technical Operations, discussions, topic: specific Fuel Consumption of Jet engines, user name Delta Flyer, http://www.airliners.net/discussions/tech_ops/read.main/42047
- Airliners.net (2003), Technical Operations, discussions, topic: Fuel Consumption, user name Qantas A332, http://www.airliners.net/discussions/tech_ops/read.main/76931/
- Antolini J. (2002), Route Economics and Airline Scheduling, proc. Aviation Gridlock Seminar, Chicago, US.
- British Airways, High life, In-flight Magazine, Plane Spotting, March 2003.
- Dennis N. P. S., (2002), Long-term forecasts and flight schedule patterns for a medium sized European Airport, Journal of Air Transport Management, vol. 278.
- Department of Transport (NDOT) Airports Company Amendment Act, 1998 (Act No.2 of 1998), <http://www.gov.za/gazette/acts/1998/a2-98.pdf> downloaded 30/4/04 - 09.40am.
- Doganis R., (1989), The Economics of International Airlines, 4th ed., Routledge, London.
- Doganis R., (1993), Flying Off-course, 2nd ed., Routledge, London.
- Doganis R., (2001), The airline industry in the 21st century, 1st ed., Routledge, London.
- Emery S, (2002), Transport World Africa, vol. 1, no.2, p. 24.
- Hanlon P., (1999), Global Airlines. Competition in a Trans-national Industry, 2 ed., Butterworth Heinemann, Oxford, England.
- Hensher D. A., (2002), Determining Passenger Potential for a regional airline hub at Canberra International Airport, Journal of Air Transport management, vol. 276, p. 1-11.
- International Air Transport Association, IATA (2003), IATA Airport Code data, www.iata.org/codes, downloaded 3/03/03-10.40.
- Jackson P., (1997) Jane's All The World's Aircraft 1996-1997, Jane's Information Group, ISBN: 0710605919, December 1997.
- Jenkinson L., Simpkin P., Rhodes D., (2001), Civil Jet Aircraft Design, Butterworth-Heinemann, Oxford, England, <http://www.bh.com/companions/034074152x/appendices> downloaded 2/9/04
- Kane R. M., (1996), Air transportation, 12th ed., Kendall/Hunt Publishing Company, Iowa, USA, 1996.
- Kenya airways, (2003), Fleet information, <http://www.kenya-airways.com/root/pages/English/Home.asp>, downloaded 11/05/03 – 14.20 pm.
- Kulula.com airlines, (2003), Flight Schedule, Johannesburg- Cape town Route, [www.kulula.com/cgi-bin/kulula/I8/171015, A](http://www.kulula.com/cgi-bin/kulula/I8/171015_A), downloaded 19/04/03 - 11.20am.



- Mileage Calculator, I Travel You Travel, www.ityt.com/mileagecalculator/index.php, 2003, downloaded 3-24/3/03.
- New Partnership for Africa's development NEPAD, (2002), NEPAD- Company Report, The Company begins, P.3.
- Pyramid Media Group (2003) Commercial Aircraft Prices, http://www.pyramid.ch/aircr_prices.htm, downloaded 4/10/03 - 16.42.
- Rolls –Royce (2003), Civil aerospace turbofan range, <http://www.rolls-royce.com/civil/products/turbofans/Default.htm>, downloaded 4/24/03.
- South African Airways, Sawubona, Our Fleet, December 2002.
- Stratford A. H., (1973), Air Transport Economics in the supersonic era, 2 ed., Martins Press, Macmillan, London.
- Taneja N. K., (1978), Airline Traffic Forecasting: A Regression Analysis Approach, Lexington Books, and Copyright by D. C. Heath and Company.
- Turbine design Inc., (2002), Engine reference Page 8, www.turbinedesign.com, downloaded 4/22/03 - 16.20.
- Turbo Jet Technologies, (2003), Turbine guide, Chapter 6, http://www.tjt.bz/pdf/turbine_maint.pdf, downloaded 4/11/03-14.20.
- Vuchic V. R., (1981), URBAN public Transportation: Systems and Technology, 2 ed., Prentice-Hall, New Jersey. 1981.
- World Bank Development Indicators, 2002, Data Query, <http://devdata.worldbank.org/data-query/> downloaded 3/6/03 - 14.20pm

APPENDICES

A. Demographic data

Appendix A gives the demographical details of all African countries that have been used in the study, these include country, capital city, and one international airport name and its code, County GDP and aircraft departures from each country.

	COUNTRY	CAPITAL	INTERNATIONAL AIRPORTS	CODE	GDP	DEPARTURES
1	Algeria	Algiers	Algiers	ALG	5.E+10	44 300
2	Angola	Luanda	Luanda	LAD	9.E+09	4 400
3	Benin	Porto Novo	Porto Novo (Cotonou)	COO	2.E+09	700
4	Botswana	Gaborone	Gaborone	GBE	5.E+09	7 100
5	Burkina Faso	Ouagadougou	Ouagadougou	OUA	2.E+09	2 000
6	Burundi	Bujumbura	Bujumbura	BJM	7.E+08	3 121
7	Cameroon	Yaounde	Nsimalen International	NSI	9.E+09	4 700
8	Cape Verde Islands	Prata	Amil Cabral Int'l Airport	SID	6.E+08	8 700
9	Central African Republic	Bangui	Bangui (M'poko)	BGF	1.E+09	700
10	Chad	N'Djameni	N'Djameni	NDJ	2.E+09	700
11	Comoros			COM	2.E+08	2 226
12	Congo Dem. Rep	Kinshasa	Kinshasa (Ndjili)	FIH	5.E+09	9 999
13	Congo. Rep.	Brazaville	Brazaville (Maya Maya)	BZV	3.E+09	5 200
14	Cote D'Ivoire	Abidjan	Abidjan (Port Bouet)	ABJ	1.E+10	700
15	Djibouti	Djibouti	Djibouti- Ambouli	JIB	6.E+08	2 909
16	Egypt	Cairo	Cairo	CAI	1.E+11	41 400
17	Equatorial Guinea		Malabo Airport	SSG	2.E+09	5 172
18	Eritrea	Asmara	Asmara (Yohannes IV)	ASM	7.E+08	3 119
19	Ethiopia	Addis Ababa	Addis Ababa	ADD	6.E+09	28 100
20	Gabon	Libreville	Libreville	LBV	4.E+09	7 500
21	Gambia, The	Banjul	Banjul	BJL	4.E+08	2 554
22	Ghana	Accra	Accra	ACC	5.E+09	5 900
23	Guinea	Conakry	Conakry-Gbeissa	CKY	3.E+09	6 978
24	Guinea Bissau	Bissau	Bissau - Osvaldo	BXO	2.E+08	2 183
25	Kenya	Nairobi	Nairobi	NBO	1.E+10	24 700
26	Lesotho	Maseru	Maseru- Moshoeshoe	MSU	8.E+08	3 322
27	Liberia	Monrovia	Roberts Int'l	ROB	5.E+08	2 808
28	Libya	Tripoli	Tripoli (Idris)	TIP	4.E+10	5 900
29	Madagascar	Antananarivo	Antananarivo (Ivato)	TNR	5.E+09	21 200
30	Malawi	Lilongwe	Lilongwe-Senou	LLW	2.E+09	4 700
31	Mali	Bamako	Bamako	BKO	3.E+09	700
32	Mauritania	Nouakchott	Nouakchott	NKC	1.E+09	2 200
33	Mauritius	Mauritius	Mauritius	MRU	5.E+09	12 800
34	Morocco	Rabat	Fes Saiss Int'l airport	FEZ	3.E+10	44 300
35	Mozambique	Maputo	Maputo	MPM	4.E+09	7 300
36	Namibia	Windhoek	Windhoek (Eros)	WDH	3.E+09	5 500
37	Niger	Niamey	Niamey	NIM	2.E+09	700
38	Nigeria	Abuja	Kanu - Mallam Amim	KAN	4.E+10	8 400
39	Rwanda	Kigali	Kigali	KGL	2.E+09	4 919
40	Senegal	Dakar	Dakar	DKR	5.E+09	200
41	Sierra Leone	Freetown	Freetown (Lungi Airport)	FNA	7.E+08	100
42	Somalia	Mogadishu	Mogadishu	MGQ	0.E+00	1 789
43	South Africa	Pretoria	Johannesburg	JNB	1.E+11	122 300
44	Sudan	Khartoum	Khartoum	KRT	1.E+10	7 600
45	Tanzania	Dar es salaam	Dar es salaam	DAR	9.E+09	4 500
46	Togo	Lome	Lome- Tokoin	LFW	1.E+09	700
47	Tunisia	Tunis	Tunis (Carthage Airport)	TOE	2.E+10	19 400
48	Uganda	Kampala	Entebbe	EBB	6.E+09	300
49	Zambia	Lusaka	Lusaka	LUN	4.E+09	4 900
50	Zimbabwe	Harare	Harare	HRE	9.E+09	13 000



B: 50 by 50 Distance matrix of the airports within Africa. ITYT (2003)

CODE	ABJ	ACC	ADD	ALG	ASM	BGF	BJL	BJR	BKO	BLZ	BXO	BZV	CAI	CKY	COO	DAR	DKR	EBB
ABJ		419	3869	3497	3983	2658	1659	2979	880	4087	1484	1627	3993	1171	216	4123	1820	3202
ACC	419		4278	4761	746	2084	2002	3389	1104	4456	1840	1986	4260	1548	239	4533	2151	3621
ADD	3869	4278		4761	746	2285	2476	1692	3442	2710	2561	2985	2518	2769	4043	1366	2421	1197
ALG	3497	4761	4761		4253	3910	2923	5210	2747	6667	3028	4710	2708	3193	3392	6091	2822	5061
ASM	3983	746	746	4253		2531	2410	2325	3402	3448	2544	3398	1821	2820	4129	2428	2304	1850
BGF	2658	2084	2285	3910	2531		3996	1473	2728	2634	3852	1022	3136	3588	1785	2611	4117	1614
BJL	1659	2002	2476	2923	2410	3996		2322	932	3758	195	1953	2406	533	1767	3325	182	2272
BJM	2979	3389	1692	5210	2325	1473	2322		3234	2994	2355	2997	2173	2593	3891	2003	2175	1378
BKO	880	1104	3442	2747	3402	2728	932	3234		4286	881	2015	3155	728	897	4073	1107	3052
BLZ	4087	4456	2710	6667	3448	2634	3758	2994	4286		3684	2470	5077	3616	4302	1104	3847	1735
BXO	1484	1840	2561	3028	2544	3852	195	2355	881	3684		1785	2600	339	1603	3309	376	2262
BZV	1627	1986	2985	4710	3398	1022	1953	2997	2015	2470	1785		4189	1538	1840	2671	2119	1961
CAI	3993	4260	2518	2708	1821	3136	2406	2173	3155	5077	2600	4189		2938	10113	4162	2226	3351
CKY	1171	1548	2769	3193	2820	3588	533	2593	728	3616	339	1538	2938		1309	3349	712	2324
COO	216	239	4043	3392	4129	1785	1767	3891	897	4302	1603	1840	10113	1309		4335	1919	3407
DAR	4123	4533	1366	6091	2428	2611	3325	2003	4073	1104	3309	2671	4162	3349	4335		3363	1054
DKR	1820	2151	2421	2822	2304	4117	182	2175	1107	3847	376	2119	2226	712	1919	3363		2310
EBB	3202	3621	1197	5061	1850	1614	2272	1378	3052	1735	2262	1961	3351	2324	3407	1054	2310	
FEZ	3192	3192	4463	346	3983	4203	2578	4127	2420	6324	2682	4371	2521	2850	3098	5762	2478	4728
FIH	1645	2004	2976	4723	3393	1028	1961	2990	2029	2453	1794	17	4192	1549	1858	2655	2127	1949
FNA	1072	1463	2827	3307	2911	3548	674	2666	750	3550	480	1411	3080	146	1225	3328	855	2318
GBE	4085	4364	3944	7220	4653	3309	4335	4183	4562	1362	4206	2548	6112	4027	4280	2450	4469	2819
HRE	3946	4290	3070	6748	3795	2811	3825	3330	4245	466	3727	2319	5348	3615	4157	1539	3933	2002
JIB	4360	4763	560	4883	630	2805	2881	637	3868	3119	2090	3542	2415	3230	4525	2800	2800	1737
JNB	4370	4654	4029	7468	4752	3521	4569	4286	4830	1364	4446	2818	6270	4279	4567	2468	4697	2942
KAN	892	1144	3360	2792	3329	1396	918	3155	86	4207	800	1952	3120	641	928	3987	1040	2965
KGL	3006	3420	1488	5085	2114	1464	2226	1645	2930	1615	2190	1686	3531	2208	3214	1144	2287	301
KRT	3333	3708	1033	3730	682	1972	1733	691	2723	3456	1874	2918	1622	2163	3470	2565	1623	1733
LAD	1881	2167	3436	5177	3905	1585	2500	3484	2440	2432	2325	565	4754	2054	2075	2866	2670	2330
LBV	810	1169	3406	4100	3666	1113	1668	3334	1354	3288	1475	820	4067	1145	1021	3404	1850	2564
LFW	321	121	4164	3412	4248	1934	1881	4012	989	4394	1719	1927	4144	1428	121	4445	2030	3522
LLW	3407	3794	797	3964	578	2634	1854	463	2846	3249	1979	2868	1834	2246	3555	2337	1761	1541
LUN	3544	3893	2896	6367	3597	2435	3445	3126	3842	658	3341	1917	5068	3220	3756	1521	3559	1759
MGQ	4595	5014	1018	5779	1631	2987	3385	1326	4303	2261	3439	3412	3451	3593	4789	1165	3357	1454
MPM	4647	4954	3899	7616	4637	3680	4697	4181	5044	1189	4589	3054	6238	4452	4850	2267	4812	2887
MRU	6497	6885	3801	8514	4442	5079	5819	4154	6549	2475	5804	4914	6259	5831	6713	2495	5851	3547
MSU	4617	4878	4403	7789	5128	3884	4905	4662	5122	1724	4776	3107	6644	4596	4807	2826	5039	3319
NBO	3741	4159	1121	5478	1860	2122	2770	1412	3582	1589	2774	2444	3547	2855	3946	629	2791	540
NDJ	1440	1788	2631	2977	2605	944	221	2422	812	3746	73	1812	2618	323	1552	3379	394	2333
NIM	806	774	4033	2718	3987	2073	1581	3826	593	4721	1473	2328	3611	1292	675	4598	1685	3598
NKC	1904	2173	2724	2401	2507	4054	538	2448	1070	4267	686	2471	2091	966	1957	3765	420	2714
NSI	12004	12133	8611	9815	8211	985	10348	8591	11209	10466	10530	11586	8066	10860	12089	9505	10184	9736
OUA	826	747	4122	2730	4076	2382	1671	3915	682	4784	1562	2379	3686	1377	676	4676	1774	3679
ROB	720	1131	3148	3466	3276	3213	1048	3010	744	3595	856	1271	3451	517	900	3495	1226	2529
SID	2396	2734	1984	2923	1760	4735	737	1697	1685	3813	918	2463	1741	1251	2501	3168	584	2145
SSG	538	947	3410	3739	3593	1089	1426	3299	993	3564	1233	1127	3830	894	752	3587	1605	2680
TIP	9814	9471	12343	7587	11780	3201	10274	11998	9610	13879	10303	11441	10022	10308	9602	13597	10234	12543
TMS	625	931	3672	4056	3908	1384	1810	3589	1331	3532	1616	1063	4216	1278	818	3680	1990	2844
TNR	5439	5821	3152	7687	3867	4085	4881	3498	5545	1394	4845	3843	5669	4839	5655	1596	4934	2632
TUN	3220	3259	4221	540	3720	3697	2450	3880	2407	6166	2571	4302	2233	2768	3144	5563	2334	4539
WDH	3317	3515	4367	6712	4988	2989	4013	4524	3968	2253	3847	2062	6144	3591	3484	3186	4177	3170

B: 50 by 50 Distance matrix of the airports within Africa. ITYT (2003)

CODE	FEZ	FIH	FNA	GBE	HRE	JIB	JNB	KAN	KGL	KRT	LAD	LBV	LFW	LLW	LUN	MGQ	MPM	MRU
ABJ	3192	1645	1072	4085	3946	4360	4370	892	3006	3333	1881	810	321	3407	3544	4595	4647	6497
ACC	3192	2004	1463	4364	4290	4763	4654	1144	3420	3708	2167	1169	121	3794	3893	5014	4954	6885
ADD	4463	2976	2827	3944	3070	560	4029	3360	1488	1033	3436	3406	4164	797	2896	1018	3899	3801
ALG	346	4723	3307	7220	6748	4883	7468	2792	5085	3730	5177	4100	3412	3964	6367	5779	7616	8514
ASM	3983	3393	2911	4653	3795	630	4752	3329	2114	682	3905	3666	4248	578	3597	1631	4637	4442
BGF	4203	1028	3548	3309	2811	2805	3521	1396	1464	1972	1585	1113	1934	2634	2435	2987	3680	5079
BJL	2578	1961	674	4335	3825	2881	4569	918	2226	1733	2500	1668	1881	1854	3445	3385	4697	5819
BJM	4127	2990	2666	4183	3330	637	4286	3155	1645	691	3484	3334	4012	463	3126	1326	4181	4154
BKO	2420	2029	750	4562	4245	3868	4830	86	2930	2723	2440	1354	989	2846	3842	4303	5044	6549
BLZ	6324	2453	3550	1362	466	3119	1364	4207	1615	3456	2432	3288	4394	3249	658	2261	1189	2475
BXO	2682	1794	480	4206	3727	2990	4446	800	2190	1874	2325	1475	1719	1979	3341	3439	4589	5804
BZV	4371	17	1411	2548	2319	3542	2818	1952	1686	2918	565	820	1927	2868	1917	3412	3054	4914
CAI	2521	4192	3080	6112	5348	2415	6270	3120	3531	1622	4754	4067	4144	1834	5068	3451	6238	6259
CKY	2850	1549	146	4027	3615	3230	4279	641	2208	2163	2054	1145	1428	2246	3220	3593	4452	5831
COO	3098	1858	1225	4280	4157	4525	4567	928	3214	3470	2075	1021	121	3555	3756	4789	4850	6713
DAR	5762	2655	3328	2450	1539	2036	2468	3987	1144	2565	2866	3404	4445	2337	1521	1165	2267	2495
DKR	2478	2127	855	4469	3933	2800	4697	1040	2287	1623	2670	1850	2030	1761	3559	3357	4812	5851
EBB	4728	1949	2318	2819	2002	1737	2942	2965	301	1733	2330	2564	3522	1541	1759	1454	2887	3547
FEZ		4383	2965	6876	6403	4610	7123	2462	4746	3436	4843	3773	3125	3668	6021	5481	7271	8197
FIH	4383		1423	2533	2302	3534	2803	1966	1673	2915	563	837	1944	2864	1900	3399	3038	4897
FNA	2965	1423		3918	3532	3301	4174	666	2184	2263	1918	999	1345	2335	3133	3622	4358	5800
GBE	6876	2533	3918		912	4408	2533	4497	2595	4525	2204	3296	4340	4351	1059	3614	686	3268
HRE	6403	2302	3532	912		3513	959	4170	1823	3734	2179	3136	4239	448	404	2703	901	2775
JIB	4610	3534	3301	4408	3513		4469	3790	2034	1232	3996	3939	4646	1046	3378	1064	4300	3849
JNB	7123	2803	4174	293	959	4469		4764	2739	4667	2492	3578	4628	4483	1202	3622	432	3046
KAN	2462	1966	666	4497	4170	3790	4764		2845	2651	2388	1312	1026	2770	3768	4218	4973	6464
KGL	4746	1673	2184	2595	1823	2034	2739	2845		1930	2035	2329	3327	1758	1541	1727	2721	3624
KRT	3436	2915	2263	4525	3734	1232	4667	2651	1930		3457	3457	309	3588	239	3471	2050	4619
LAD	4843	563	1918	2204	2179	3996	2492	2388	2035	3457		1109	2137	3392	1805	3745	2788	4907
LBV	3773	837	999	3296	3136	3939	3578	1312	2329	309	1109		1107	3095	2735	4005	3843	5719
LFW	3125	1944	1345	4340	4239	4646	4628	1026	3327	3588	2137	1107		3675	3840	4908	4919	6813
LLW	3668	2864	2335	4351	448	1046	4483	2770	1758	239	3392	3095	3675		3293	1815	4421	4586
LUN	6021	1900	3133	1059	404	3378	1202	3768	1541	3471	1805	2735	3840	3293		2668	1253	3112
MGQ	5481	3399	3622	3614	2703	1064	3622	4218	1727	2050	3745	4005	4908	1815	2668		3391	2813
MPM	7271	3038	4358	686	901	4300	432	4973	2721	4619	2788	3843	4919	4421	1253	3391		2615
MRU	8197	4897	5800	3268	2775	3849	3046	6464	3624	4825	4907	5719	6813	4586	3112	2813	2615	
MSU	7445	3092	4486	571	1333	4837	377	5059	3115	5043	2736	3839	4861	4860	1576	3974	633	3173
NBO	5152	2430	2854	2845	1956	1564	3914	3496	763	1941	2756	3088	4061	1716	1817	990	2778	3065
NDJ	2632	1822	469	4251	3783	3057	4493	733	2258	1932	2346	1468	1667	2041	3396	3511	4641	5874
NIM	2427	2344	1281	4847	4631	4460	5127	673	3455	3307	2656	1551	698	3435	4227	4884	5381	7051
NKC	2057	2480	1110	4872	4351	3052	5105	1030	2703	1831	3007	2097	2056	2006	3975	3694	5228	6247
NSI	9893	11578	10983	11771	10931	8051	11655	11166	10037	8777	12046	11855	12192	8770	11016	8415	11272	8855
OUA	2446	2396	1363	4889	4688	4549	5170	762	3533	3396	2692	1593	683	3524	4284	4970	5430	7125
ROB	3133	1286	385	3819	3525	3641	4087	683	2357	2637	1710	676	1020	2698	3121	3892	4308	5929
SID	2596	2467	1383	4609	3971	2297	4811	1621	2201	1080	3028	2342	2613	1252	3628	2973	4870	5609
SSG	3413	1144	756	3645	3442	3922	3923	955	2474	2971	1470	364	858	3016	3039	4090	4177	5962
TIP	7896	11459	10357	13742	13758	12405	14035	9692	12492	11311	11617	10623	9520	11547	13358	13359	14388	16080
TMS	3738	1081	1137	3462	3359	4200	3749	1307	2610	3306	1258	280	886	3334	2962	4284	4034	5976
TNR	7356	3825	4795	2311	1712	3349	2134	5461	2656	4119	3826	4653	5752	3883	2035	2290	1727	1080
TUN	289	4314	2891	6776	6266	4349	7016	2439	4573	3190	4794	3749	3182	3424	5892	5239	7145	7976
WDH	6381	2053	3458	1176	1803	4898	1439	3920	2884	4687	1543	2617	3518	4566	1672	4310	1860	4430

B: 50 by 50 Distance matrix of the airports within Africa. ITYT (2003)

CODE	MSU	NBO	NDJ	NIM	NKC	NSI	OUA	ROB	SID	SSG	TIP	TMS	TNR	TOE	WDH
ABJ	4617	3741	1440	806	1904		826	720	2396	538	9814	625	5439	3220	3317
ACC	4878	4159	1788	774	2173	12133	747	1131	2734	947	9471	931	5821	3259	3515
ADD	4403	1121	2631	4033	2724	8611	4122	3148	1984	3410	12343	3672	3152	4221	4367
ALG	7789	5478	2977	2718	2401	9815	2730	3466	2923	3739	7587	4056	7687	540	6712
ASM	5128	1860	2605	3987	2507	8211	4076	3276	1760	3593	11780	3908	3867	3720	4988
BGF	3884	2122	944	2073	4054	985	2382	3213	4735	1089	3201	1384	4085	3697	2989
BJL	4905	2770	221	1581	538	10348	1671	1048	737	1426	10274	1810	4881	2450	4013
BJM	4662	1412	2422	3826	2448	8591	3915	3010	1697	3299	11998	3589	3498	3880	4524
BKO	5122	3582	812	593	1070	11209	682	744	1685	993	9610	1331	5545	2407	3968
BLZ	1724	1589	3746	4721	4267	10466	4784	3595	3813	3564	13879	3532	1394	6166	2253
BXO	4776	2774	73	1473	686	10530	1562	856	918	1233	10303	1616	4845	2571	3847
BZV	3107	2444	1812	2328	2471	11586	2379	1271	2463	1127	11441	1063	3843	4302	2062
CAI	6644	3547	2618	3611	2091	8066	3686	3451	1741	3830	10022	4216	5669	2233	6144
CKY	4596	2855	323	1292	966	10860	1377	517	1251	894	10308	1278	4839	2768	3591
COO	4807	3946	1552	675	1957	12089	676	900	2501	752	9602	818	5655	3144	3484
DAR	2826	629	3379	4598	3765	9505	4676	3495	3168	3587	13597	3680	1596	5563	3186
DKR	5039	2791	394	1685	420	10184	1774	1226	584	1605	10234	1990	4934	2334	4177
EBB	3319	540	2333	3598	2714	9736	3679	2529	2145	2680	12543	2844	2632	4539	3170
FEZ	7445	5152	2632	2427	2057	9893	2446	3133	2596	3413	7896	3738	7356	289	6381
FIH	3092	2430	1822	2344	2480	11578	2396	1286	2467	1144	11459	1081	3825	4314	2053
FNA	4486	2854	469	1281	1110	10983	1363	385	1383	756	10357	1137	4795	2891	3458
GBE	571	2845	4251	4847	4872	11771	4889	3819	4609	3645	13742	3462	2311	6776	1176
HRE	1333	1956	3783	4631	4351	10931	4688	3525	3971	3442	13758	3359	1712	6266	1803
JIB	4837	1564	3057	4460	3052	8051	4549	3641	2297	3922	12405	4200	3349	4349	4703
JNB	377	3914	4493	5127	5105	11655	5170	4087	4811	3923	14035	3749	2134	7016	1439
KAN	5059	3496	733	673	1030	11166	762	683	1621	955	9692	1307	5461	2439	3920
KGL	3115	763	2258	3455	2703	10037	3533	2357	2201	2474	12492	2610	2656	4573	2884
KRT	5043	1941	1932	3307	1831	8777	3396	2637	1080	2971	11311	3306	4119	3190	4687
LAD	2736	2756	2346	2656	3007	12046	2692	1710	3028	1470	11617	1258	3826	4794	1543
LBV	3839	3088	1468	1551	2097	11855	1593	676	2342	364	10623	280	4653	3749	2617
LFW	4861	4061	1067	698	2056	12192	683	1020	2613	858	9520	886	5752	3182	3518
LLW	4860	1716	2041	3435	2006	8770	3524	2698	1252	3016	11547	3334	3883	3424	4566
LUN	1576	1817	3396	4227	3975	11016	4284	3121	3628	3039	13358	2962	2035	5892	1672
MGQ	3974	990	3511	4884	3694	8415	4970	3892	2973	4090	13359	4284	2290	5239	4310
MPM	633	2778	4641	5381	5228	11272	5430	4308	4870	4177	14388	4034	1727	7145	1860
MRU	3173	3065	5874	7051	6247	8855	7125	5929	5609	5962	16080	5976	1080	7976	4430
MSU		3287	4821	5390	5443	11898	5428	4378	5170	4192	14169	3992	2345	7347	1501
NBO	3287		2846	4134	3182	9384	4216	3069	2557	3216	13015	3368	2218	4947	3390
NDJ	4821	2846		1405	661	10569	1494	833	957	1212	10234	1598	4912	2526	3874
NIM	5390	4134	1405		1580	11675	89	1129	2254	1205	9158	1419	6024	2485	4120
NKC	5443	3182	661	1580		10139	1664	1431	754	1804	9835	2192	5343	1917	4533
NSI	11898	9384	10569	11675	10139		11748	11368	9613	11726	11389	12077	9554	9670	12688
OUA	5428	4216	1494	89	1664	11748		1198	2341	1253	9095	1446	6094	2514	4143
ROB	4378	3069	833	1129	1431	11368	1198		1767	379	10285	767	4896	3092	3249
SID	5170	2557	957	2254	754	9613	2341	1767		2138	10475	2514	4764	2396	4470
SSG	4192	3216	1212	1205	1804	11726	1253	379	2138		10325	389	4907	3395	2981
TIP	14169	13015	10234	9158	9835	11389	9095	10285	10475	10325		10402	15145	8127	12670
TMS	3992	3368	1598	1419	2192	12077	1446	767	2514	389	10402		4906	3737	2703
TNR	2345	2218	4912	6024	5343	9554	6094	4896	4764	4907	15145	4906		7159	3434
TUN	7347	4947	2526	2485	1917	9670	2514	3092	2396	3092	8127	3737	7159		6337
WDH	1501	3390	3874	4120	4533	12688	4143	3249	4470	2981	12670	2703	3434	6337	

C:50 by 50 O-D passenger matrix of the airports within Africa.

	ABJ	ACC	ADD	ALG	ASM	BGF	BJL	BJM	BKO	BLZ	BXO	BZV	CAI	CKY	COO	DAR	DKR	EBB
ABJ	0	3870	9940	21470	1050	260	1210	1240	390	630	2530	20380	2610	1130	460	1340	100	110
ACC	3760	0	83340	155120	16660	2560	10200	10390	3370	5260	21400	172490	22410	9540	4080	11220	780	860
ADD	9660	83340	0	729710	78350	11630	44170	65730	10530	33540	88730	681270	143000	36230	9840	91860	3500	6140
ALG	20870	155100	729660	0	85900	17720	82710	71920	24070	33990	165610	1020260	280140	68130	22340	81380	6600	6320
ASM	1020	16660	78340	85900	0	1200	4820	6340	1150	3180	9590	68260	17400	3870	1050	8220	390	590
BGF	250	2560	11620	17720	1200	0	710	1430	250	720	1490	20090	2690	660	310	1550	60	120
BJL	1170	10200	44160	82720	4820	710	0	4840	1350	2300	11040	67070	11990	4410	1210	5360	430	420
BJM	1210	10390	65730	71930	6340	1430	4840	0	1170	3410	9810	72490	16200	3990	1080	8770	390	640
BKO	380	3370	10530	24080	1150	250	1350	1170	0	600	2770	18730	2970	1210	400	1330	110	110
BLZ	610	5260	33550	34000	3180	720	2300	3410	600	0	4750	48480	5950	2040	620	6260	180	370
BXO	2460	21400	88730	165620	9590	1490	11040	9810	2770	4740	0	140850	23630	9290	2530	10960	840	860
BZV	19810	172500	681340	1020430	68270	20100	67080	72500	18730	48480	140870	0	147940	62290	20060	101330	5110	7440
CAI	2540	22410	142990	280130	17400	2690	11990	16200	2970	5950	23630	147910	0	9430	920	15100	970	1130
CKY	1100	9540	36230	68130	3870	660	4410	3990	1210	2040	9290	62280	9430	0	1130	4610	340	360
COO	450	4070	9850	22340	1050	310	1210	1080	400	620	2530	20060	920	1130	0	1320	100	110
DAR	1300	11220	91870	81390	8220	1550	5360	8770	1330	6260	10960	101320	15100	4610	1320	0	420	890
DKR	90	780	3500	6600	390	60	430	390	110	180	840	5110	970	340	100	420	0	40
EBB	100	860	6140	6320	590	120	420	640	110	370	860	7440	1130	360	110	890	40	0
FEZ	20810	193010	726930	3026320	85160	15920	83090	82200	24110	34130	166380	1023770	273720	68410	22240	81520	6630	6330
FIH	4370	38060	151030	225320	15130	4450	14830	16070	4140	10770	31130	351280	32730	13760	4430	22490	1130	1650
FNA	50	440	1600	2980	170	30	200	180	60	100	410	2840	410	190	60	210	20	20
GBE	1930	17000	86070	98260	8190	2020	6610	8810	1800	8800	13780	152290	15790	6020	1960	15740	510	960
HRE	3680	32090	186860	198840	17730	4090	13460	19040	3530	19170	27920	295320	33620	12060	3730	34390	1040	2060
JIB	910	7790	76430	72650	8140	1080	4190	8040	1000	3180	8380	62860	14810	3400	920	8310	340	570
JNB	60930	537690	2821900	3131100	267810	64510	210990	287650	56880	292510	439640	4833880	511030	191680	61870	521990	16160	31140
KAN	4600	40750	130070	290970	14090	3840	16390	14380	5350	7300	34120	230620	36360	14860	4800	16410	1260	1280
KGL	1680	14470	95410	102980	9210	2010	6900	9900	1720	6070	14150	127720	17890	5970	1700	14270	540	1080
KRT	2710	23510	176580	223090	20230	3140	12840	19990	3050	7520	25550	175950	42700	10290	2780	19010	1030	1430
LAD	1870	16420	61840	92360	6140	1790	5990	6540	1710	4800	12590	141630	13170	5590	1900	9620	460	690
LBV	3960	34420	109460	196340	11270	3420	12200	11820	3640	7270	25720	238500	26140	11540	4010	15420	930	1160
LFW	440	4180	9680	22350	1030	300	1190	1060	400	610	2490	19830	2610	1110	480	1300	100	100
LLW	1620	14020	111430	129660	12470	1690	7620	12600	1810	4720	15190	107480	24920	6140	1660	11980	610	900
LUN	1470	12790	71610	79010	6830	1630	5350	7340	1410	6890	11110	117780	13130	4810	1490	12830	420	800
MGQ	520	4460	42170	37130	4080	630	2300	4270	560	2210	4630	38440	7390	1910	530	5790	190	360
MPM	1850	16200	91620	96830	8680	2000	6550	9300	1740	9580	13610	147200	16310	5910	1870	17160	510	1000
MIRU	3160	27380	220950	196170	21280	3700	12760	22150	3170	18120	26080	252010	38530	11000	3200	39090	1000	2110
MSU	860	7550	38600	43230	3670	890	2910	3940	790	4020	6060	67110	6990	2650	870	7160	230	430
NBO	8540	73560	588840	556390	55730	10340	36260	59670	8880	35280	73900	647390	103240	30850	8660	90340	2830	5950
NDJ	330	2880	11690	22290	1270	330	1470	1300	380	630	3070	18700	3150	1250	350	1450	120	120
NIM	410	3740	9930	25320	1080	300	1260	1100	430	580	2610	18550	2870	1140	440	1270	100	100
NKC	990	8760	37420	80200	4190	630	4510	4190	1160	1860	8960	54210	11210	3620	1040	4390	370	350
NSI	6530	11210	97660	160220	11290	7760	5930	10450	1440	4590	11700	80410	28800	4680	1280	11760	480	740
OUA	1160	10850	28260	73030	3070	810	3570	3130	1200	1640	7420	53130	8180	3250	1250	3620	280	280
ROB	1510	13020	43010	82390	4530	890	5110	4700	1520	2590	10770	82780	10940	4840	1540	5700	390	440
SID	3620	31620	169620	291500	19000	2200	17340	19020	4150	8010	34260	216170	47450	13690	3740	19410	1400	1510
SSG	2900	25040	76530	146340	7990	2410	8900	8320	2710	4850	18780	158150	19060	8440	2940	10450	680	800
TIP	2620	25810	73440	341890	8730	7610	8670	8320	2750	3650	17590	119170	29550	7450	2860	8300	690	650
TMS	2980	26180	76240	144380	7880	2380	8680	8250	2670	5080	18310	166790	18580	8230	3030	10720	660	810
TNR	5550	48090	360880	330540	34300	6420	21920	36220	5510	31920	44980	443160	62280	19070	5610	66700	1710	3610
TUN	8030	73980	294080	1134360	34580	6750	32950	33290	9370	13610	65790	401820	111630	26920	8560	32740	2640	2540
WDH	1870	16760	67900	91230	6560	1810	5940	7050	1690	6400	12470	140840	13340	5520	1910	11760	460	770

C:50 by 50 O-D passenger matrix of the airports within Africa.

	FEZ	FIH	FNA	GBE	HRE	JIB	JNB	KAN	KGL	KRT	LAD	LBV	LFW	LLW	LUN	MGQ	MPM	MRU
ABJ	21420	4500	60	1980	3780	930	62720	4730	1730	2790	1920	4070	450	1670	1510	540	1900	3260
ACC	193030	38060	440	17000	32080	7790	537950	40750	14470	23510	16420	34420	4180	14020	12790	4460	16190	27380
ADD	726980	151020	1600	86050	186830	76430	2823180	130070	95410	176590	61840	109450	9680	111430	71600	42170	91600	220930
ALG	3026310	225290	2980	98240	198790	72650	3132310	290960	102970	223090	92340	196330	22350	129660	78990	37130	96800	196130
ASM	85160	15120	170	8190	17730	8140	267910	14090	9210	20230	6140	11270	1030	12470	6830	4080	8670	21270
BGF	15920	4450	30	2020	4090	1080	64530	3840	2010	3140	1790	3420	300	1690	1630	630	2000	3700
BJL	83090	14830	200	6610	13460	4190	211080	16390	6890	12840	5990	12200	1190	7620	5350	2300	6550	12760
BJM	82210	16070	180	8800	19040	8040	287770	14380	9900	19990	6540	11820	1060	12600	7340	4270	9300	22150
BKO	24110	4140	60	1800	3530	1000	56910	5350	1720	3050	1710	3640	400	1810	1410	560	1740	3170
BLZ	34140	10770	100	8800	19170	3180	292670	7300	6070	7520	4800	7270	610	4720	6890	2210	9580	18120
BXO	166390	31130	410	13780	27910	8380	439830	34120	14140	25550	12590	25720	2490	15190	11100	4630	13610	26080
BZV	1023940	351300	2840	152270	295310	62860	4836580	230640	127730	175980	141640	238520	19830	107490	117770	38450	147190	252010
CAI	273720	32720	410	15790	33620	14810	511220	36360	17890	42700	13160	26140	2610	24910	13130	7390	16310	38520
CKY	68420	13760	190	6020	12060	3400	191770	14860	5970	10290	5590	11540	1110	6140	4810	1910	5910	10990
COO	22240	4430	60	1960	3730	920	61900	4800	1700	2780	1890	4010	480	1660	1490	530	1870	3200
DAR	81530	22490	210	15740	34380	8310	522250	16410	14270	19020	9620	15420	1300	11980	12820	5790	17160	39090
DKR	6630	1130	20	510	1040	340	16170	1260	540	1030	460	930	100	610	420	190	510	1000
EBB	6340	1650	20	960	2060	570	31150	1280	1080	1430	690	1160	100	900	800	360	1000	2110
FEZ	0	226110	2990	98660	199680	72060	3146390	291500	103320	222100	92580	196590	22220	129130	79360	36990	97240	196050
FIH	226130	0	630	33790	65550	13940	1073180	50920	28340	38970	31360	52630	4380	23810	26150	8530	32670	55940
FNA	2990	630	0	280	550	150	8710	660	270	460	260	530	60	270	220	90	270	500
GBE	98690	33800	280	0	56440	8080	1124080	22080	16280	19850	15890	23110	1950	12390	20450	5550	33280	50220
HRE	199730	65560	550	56440	0	17590	1863880	43550	34720	42470	29730	44270	3690	45700	42720	12120	59720	102000
JIB	72060	13930	150	8070	17590	0	265850	12270	8820	17350	5710	10140	910	10850	6700	4260	8690	22290
JNB	3145160	1072640	8700	1123330	1862740	265740	0	701040	528170	644230	502620	731870	61450	402850	663600	184240	1157860	1737460
KAN	291510	50920	660	22070	43540	12270	701350	0	21260	37590	20990	44610	4740	22290	17370	6810	21450	39170
KGL	103330	28340	270	16280	34710	8820	528430	21260	0	22550	11810	19740	1680	14070	13560	5570	16820	34040
KRT	222100	38970	460	19850	42460	17350	644500	37590	22540	0	15730	48040	2740	31360	16530	8990	20620	47140
LAD	92590	31360	260	15890	29730	5710	502880	20990	11810	15730	0	22270	1880	9640	11800	3570	15150	24780
LBV	196610	52630	530	23100	44270	10150	732220	44620	19740	48040	22270	0	3960	17870	17650	6000	22170	37860
LFW	22220	4380	60	1950	3690	910	61480	4740	1680	2740	1880	3960	0	1630	1470	520	1860	3160
LLW	129130	23810	270	12390	45690	10850	403010	22290	14070	31360	9640	17870	1630	0	10330	5670	12930	29770
LUN	79380	26150	220	20450	42720	6700	663980	17370	13560	16530	11800	17660	1470	10330	0	4540	20880	35750
MGQ	36990	8530	90	5550	12120	4260	184320	6810	5570	8990	3570	6000	520	5670	4530	0	6090	15970
MPM	97270	32670	270	33280	59720	8690	1158630	21450	16820	20620	15150	22180	1860	12930	20880	6090	0	59460
MRU	196080	55940	500	50220	101990	22290	1738410	39170	34040	47150	24790	37860	3160	29770	35740	15970	59460	0
MSU	43420	14900	130	15630	25480	3640	538300	9730	7230	8810	7040	10220	870	5510	9080	2530	16330	24820
NBO	557040	143630	1380	90160	196260	55430	2490040	109790	93630	130220	60210	100030	8520	82020	74750	36640	96340	217230
NDJ	22390	4140	60	1830	3690	1110	58180	4610	1870	3380	1680	3440	340	2010	1470	610	1800	3440
NIM	25190	4100	60	1790	3450	940	56520	5050	1650	2880	1720	3680	440	1710	1380	530	1720	3040
NKC	80550	11980	160	5320	10860	3600	170060	14220	5610	11170	4850	10010	1020	6560	4320	1920	5280	10480
NSI	149460	17830	210	11630	25100	10960	395210	17650	11370	24220	7290	13270	1270	14680	9200	6150	13410	48510
OUA	72580	11730	150	5120	9880	2670	162180	14380	4680	8200	4940	10550	1250	4850	3940	1490	4920	8670
ROB	82590	18280	230	7920	15530	4020	251560	18710	7380	12010	7530	15890	1510	7200	6200	2300	7680	13710
SID	291890	47810	600	22190	46220	16340	713020	51070	24390	50720	19240	38190	3680	29800	18250	8680	22390	46630
SSG	146510	34900	390	15210	29360	7120	482300	33230	13470	21100	14630	31260	2900	12680	11710	4140	14640	25390
TIP	306280	26300	330	11910	22120	7390	376520	33000	10690	22460	11350	23790	2920	13050	8820	3740	11230	19800
TMS	144340	36800	380	16380	31070	7070	518540	32580	13720	20750	15840	33080	3010	12510	12380	4170	15650	26410
TNR	331210	98390	860	86560	179100	35460	2973130	68070	58790	77780	43660	66520	5540	49090	62920	25520	101260	268850
TUN	1120860	88750	1180	38940	79310	29250	1243150	113490	41300	89920	36210	76560	8530	52260	31480	14970	38550	79030
WDH	91420	31220	260	24570	41020	6520	781330	20750	13150	16390	15150	22110	1910	10140	15610	4170	23020	34810

Developing a cost model for running an airline service

C:50 by 50 O-D passenger matrix of the airports within Africa.

	MSU	NBO	NDJ	NIM	NKC	NSI	OUA	ROB	SID	SSG	TIP	TMS	TNR	TUN	WDH
ABJ	880	8780	340	420	1020	0	1190	1560	3730	2990	2700	3070	5710	8270	1930
ACC	7550	73560	2880	3740	8760	11260	10850	13020	31630	25040	25810	26180	48080	73980	16750
ADD	38590	588850	11690	9930	37420	98070	28260	43010	169630	76530	73450	76240	360830	294110	67890
ALG	43220	556370	22290	25310	80200	160890	73020	82390	291490	146320	341910	144360	330470	1134370	91210
ASM	3670	55730	1270	1080	4190	11330	3070	4530	19000	7990	8730	7880	34290	34580	6560
BGF	890	10340	330	300	630	7790	810	890	2200	2410	7610	2380	6410	6750	1810
BJL	2910	36260	1470	1260	4510	5950	3570	5110	17340	8900	8670	8680	21910	32950	5940
BJM	3940	59670	1300	1100	4190	10500	3130	4700	19020	8320	8320	8250	36220	33290	7050
BKO	790	8880	380	430	1160	1450	1200	1520	4150	2710	2750	2670	5510	9370	1690
BLZ	4020	35280	630	580	1860	4610	1640	2590	8010	4850	3660	5080	31920	13610	6400
BXO	6060	73900	3070	2610	8960	11750	7420	10770	34260	18780	17590	18310	44970	65790	12460
BZV	67100	647460	18700	18550	54220	80760	53140	82780	216200	158160	119200	166800	443150	401890	140830
CAI	6990	103230	3150	2870	11210	28920	8180	10940	47440	19060	29550	18580	62260	111630	13340
CKY	2650	30850	1250	1140	3620	4700	3250	4840	13690	8440	7450	8230	19060	26920	5520
COO	870	8660	350	440	1040	1290	1540	1540	3740	2940	2860	3030	5610	8560	1910
DAR	7160	90350	1450	1270	4400	11810	3620	5700	19410	10450	8310	10720	66690	32740	11750
DKR	230	2830	120	100	370	480	280	390	1400	680	690	660	1710	2640	460
EBB	430	5950	120	100	350	740	280	440	1510	800	650	810	3610	2540	770
FEZ	43400	557010	22390	25190	80540	150080	72570	82580	291880	146490	306310	144330	331150	1120880	91400
FIH	14890	143640	4140	4100	11980	17900	11730	18280	47820	34900	26300	36800	98380	88760	31220
FNA	130	1380	60	60	160	210	150	230	600	390	330	380	860	1180	260
GBE	15630	90180	1830	1790	5330	11690	5120	7920	22190	15210	11910	16380	86570	38950	24570
HRE	25480	196290	3690	3450	10860	25210	9880	15540	46220	29360	22120	31070	179110	79330	41020
JIB	3640	55420	1110	940	3600	11010	2670	4020	16340	7120	7390	7070	35460	29250	6510
JNB	537940	2488950	58160	56500	169990	396710	162110	251440	712720	482080	376400	518290	2971380	1242690	780850
KAN	9720	109790	4610	5050	14220	17720	14380	18710	51070	33230	33000	32580	68060	113500	20740
KGL	7230	93630	1870	1650	5610	11420	4680	7380	24390	13470	10690	13720	58780	41300	13150
KRT	8810	130220	3380	2880	11170	24320	8200	12010	50720	21100	22460	20750	77770	89920	16390
LAD	7040	60210	1680	1720	4850	7320	4950	7530	19240	14630	11360	15840	43660	36220	15150
LBV	10210	100030	3440	3680	10010	13330	10550	15890	38190	31260	23790	33080	66510	76560	22100
LFW	870	8520	340	440	1020	1270	1250	1510	3680	2900	2920	3010	5540	8530	1910
LLW	5510	82010	2010	1710	6560	14750	4850	7200	29800	12680	13050	12500	49080	52260	10140
LUN	9080	74760	1470	1380	4320	9240	3940	6200	18250	11720	8820	12380	62920	31490	15610
MGQ	2530	36640	610	530	1920	6180	1490	2300	8680	4140	3740	4170	25520	14970	4170
MPM	16330	96360	1800	1720	5280	13470	4920	7680	22390	14640	11230	15650	101260	38560	23030
MRU	24820	217250	3440	3040	10480	48720	8670	13710	46640	25390	19800	26410	268840	79040	34810
MSU	0	40570	810	790	2340	5560	2270	3490	9780	6720	5370	7260	41820	17130	11280
NBO	40560	0	9740	8440	29860	74050	24030	37700	132640	68440	56450	69500	367300	223900	69620
NDJ	810	9740	0	360	1200	1560	1010	1450	4540	2520	2380	2450	5930	8850	1660
NIM	790	8440	360	0	1110	1400	1390	1490	3930	2740	3120	2750	5300	9670	1720
NKC	2340	29860	1200	1110	0	5460	3160	4230	15300	7380	8290	7190	17890	32010	4800
NSI	5530	73740	1550	1390	5440	0	3960	5430	23740	9500	46150	9320	62580	60270	8420
OUA	2270	24030	1010	1390	3160	3980	0	4250	11180	7830	9100	7900	15130	27810	4960
ROB	3490	37700	1450	1490	4230	5450	4250	0	15860	11710	9480	11410	23940	32260	7440
SID	9780	132640	4540	3930	15300	23840	11180	15860	0	27690	29500	27040	78810	117220	19310
SSG	6720	68440	2520	2740	7380	9540	7830	11710	27690	0	17540	22710	44510	56990	14510
TIP	5370	56440	2380	3120	8290	46340	9100	9480	29490	17530	0	18040	33990	114070	12200
TMS	7260	69500	2450	2750	7190	9360	7900	11410	27040	22710	18040	0	46430	55990	15890
TNR	41820	367350	5930	5300	17890	62860	15130	23940	78830	44520	34000	46430	0	132950	60410
TUN	17130	223890	8850	9670	32010	60520	27810	32260	117220	56990	114070	55980	132920	0	35720
WDH	11280	69640	1660	1720	4800	8460	4960	7440	19320	14520	12200	15890	60420	35730	0

D. Default values

Appendix IV gives the default values of all the aircraft types that will be used in the model.

AIRCRAFT CHARACTERISTICS	Erj 135 JET	F 50	737-200	737-400	A320-200	A340-200	737-800	767-200	747-200	767-300ER	747-400
Cruising Speed (Kph)	833	448	760	815	833	861	810	850	895	897	914
Passenger Capacity	37	56	130	168	180	295	189	255	291	290	401
ToGWmax (Kg)	21 100	19 950	52 437	68 040	73 500	27 500	78 240	136 985	374 850	181 890	390 100
Max fuel Capacity (US gal)	5 187	1 357	5 163	5 701	6 300	36 984	6 878	16 700	53 858	24 140	48 445
Engine type	AE3007	PW125B	JT8D-15A	CFM 56-	CFM56-	CFM56-	CFM56-	CF6-80A	RB211-	CF6-	PW 4056
Engine maximum thrust (lbf)	7 400	5 000	16 000	22 000	25 000	31 200	24 000	48 000	53 000	61 500	47 000
Maximum Cruise Fuel Consumption (lb/hr/engine)	2 248,4	751,3	8 811	7 275,4	7 040,0	15 664	4 811	11 033	28 578	11 376	25 014
Maximum range (Km)	3 019	1 300	3 700	3 810	5 615	13 500	5 670	12 250	7 900	12 500	13 480
Number of Engines	2	2	2	2	2	4	2	2	4	2	4
Crew Number	5	5	6	7	7	8	7	7	8	8	8
DEFAULT VALUES											
Usable Hours in an operating day	14	14	14	14	14	14	14	14	14	14	14
Operating weeks in a year	52	52	52	52	52	52	52	52	52	52	52
Air manouevre time (hrs)	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10
Ground manouevre time (hrs)	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
Aircraft servicing time (hrs)	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90
Depreciation period (years)	9	9	9	15	15	15	15	15	15	15	15
Residual Value (%)	10	10	10	10	10	10	10	10	10	10	10
Interest rate (%)	8	8	8	8	8	8	8	8	8	8	8
Annual insurance rate (%)	3	3	3	3	3	3	3	3	3	3	3
Fuel Density (lbs/US gal)	6,7	6,7	6,7	6,7	6,7	6,7	6,7	6,7	6,7	6,7	6,7
Cost of fuel (US\$/US gal)	0,895	0,895	0,895	0,895	0,895	0,895	0,895	0,895	0,895	0,895	0,895
Oil Cost (US\$/US gal)	0,932	0,932	0,932	0,932	0,932	0,932	0,932	0,932	0,932	0,932	0,932
COLLECTED DATA											
Capital Cost of aircraft (US\$ million)	19	29	42	48	51	121	56,5	87	150	197	185
Maximum cruise Fuel Consumption (US gal/hr)	671,2	224,3	2 630,1	2 171,8	2 101,5	9 351,6	1 436,5	3 293,4	1 7061,5	3 395,9	14 933,7
Oil consumption (US gallons/hour)	33,56	11,21	131,51	108,59	105,07	467,58	71,81	164,67	853,07	169,79	746,69
Passenger service charge (US\$)	6	6	6	6	6	6	6	6	6	6	6
Landing Fees (US\$ per single landing)	13	11	296	352	399	1257	399	790	1853	1816	1881
Parking Fees (US\$ per 24 hour period)	22	19	37	37	37	76	37	67	96	96	96

