#### 11.3.4 Access Road and Parking Lot

As a short term development, access road from the airport perimeter to the public road shall be provided with approximate 100 m length and 17 m width. In the airport area, landside service road shall be provided as circulation road in front of the buildings such as passenger terminal building, cargo building and administration building etc. The service road in front of passenger terminal building has 30 m width including curb side lanes, through traffic lanes, green belt zone and walk way. The other part of the service road has 15 m width for traffic lanes and walk way with green belt. Regarding the car parking space, approximate 5,200 m<sup>2</sup> of the space shall be allocated for about 206 numbers of the vehicles in front of the passenger terminal building.

#### 11.4 Airport Support Facility Developments

#### 11.4.1 Control Tower

As it is stated in 9.4.1 the control tower should be constructed in the first stage, and it should be completed as designed in the master plan. There will be no extension planned for year 2010.

#### 11.4.2 Administration Building

Plan for year 2000 will be further studied according to the organization chart of Figure 10.7-1.

#### 11.4.3 CFR Building

CFR building for year 2000 is illustrated in Attachment Drawing 11-3 and 11-4. The extension will be made by adding one bay to accommodate one more major fire fighting vehicle in future. The arrangement of the function remains to be the same.

#### 11.4.4 Maintenance Shop

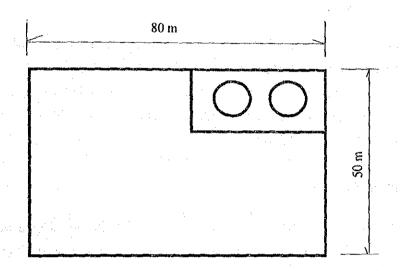
Maintenance shop for year 2000 plan will be basically the same with the master plan. It will be elaborated during the course of the study.

#### 11.4.5 Fuel Farm

The required amount of fuel for a week is estimated to be about 520 kl for the year 2000. Using the JCAB standards in computing the required fuel storage capacity

at Tokua Airport, it is estimated to need 2 tanks of each tank capacity of 300 kl in the fuel farm area of 4,000 m<sup>2</sup> to cope with the requirement of 600 kl for the year 2000.

It is important to prepare the land capable to expand the area to  $6,000 \text{ m}^2$  for the year 2010. Assuming that each tank has a storage capacity of 300 kl, the required minimum tank yard area is roughly  $4,000 \text{ m}^2$  as illustrated below.



#### 11.4.6 Electrical Facility

Commercial power should be supplied to the airport by extending from Kokopo. And a suitable capacity of diesel engine generators should be also equipped as a secondary power supply system.

#### 11.5 Operational Equipment Developments

#### 11.5.1 Navigation Aids

The facilities for navigation aids to be proposed for provision under the short term development will involve the following:

- 1) D-VOR/DME
- 2) NDB

The site of NDB will be re-considered at the stage of Detailed Design.

Installation of ILS will be contemplated in the runway extension to the localizer site in the subsequent phase of the master plan.

Transfer to the precision approach requirement from the proposing non-precision approach procedure is desirable, because 150 m runway strip was proposed due to saving the construction cost.

#### 11.5.2 Telecommunication Systems

Telecommunications facility in this phase will include AMS and AFS consisting of VHF air-ground radios and AFTN circuit with HF back-up. To establish the system, the connection of Tokua Airport and the present PTC line is necessary via Tomavatur repeater station. The required channels at the airport will be smaller than 60 channels which can be installed as a minimum.

#### 11.5.3 Lighting Systems

Major part of the airfield lighting is expected to be developed in this stage including SALS. The approach lighting system (ALS) should be introduced after the completion of the runway extension in the subsequent phase of the master plan.

The proposed Naviaids plan is shown in Figure 11.5-1

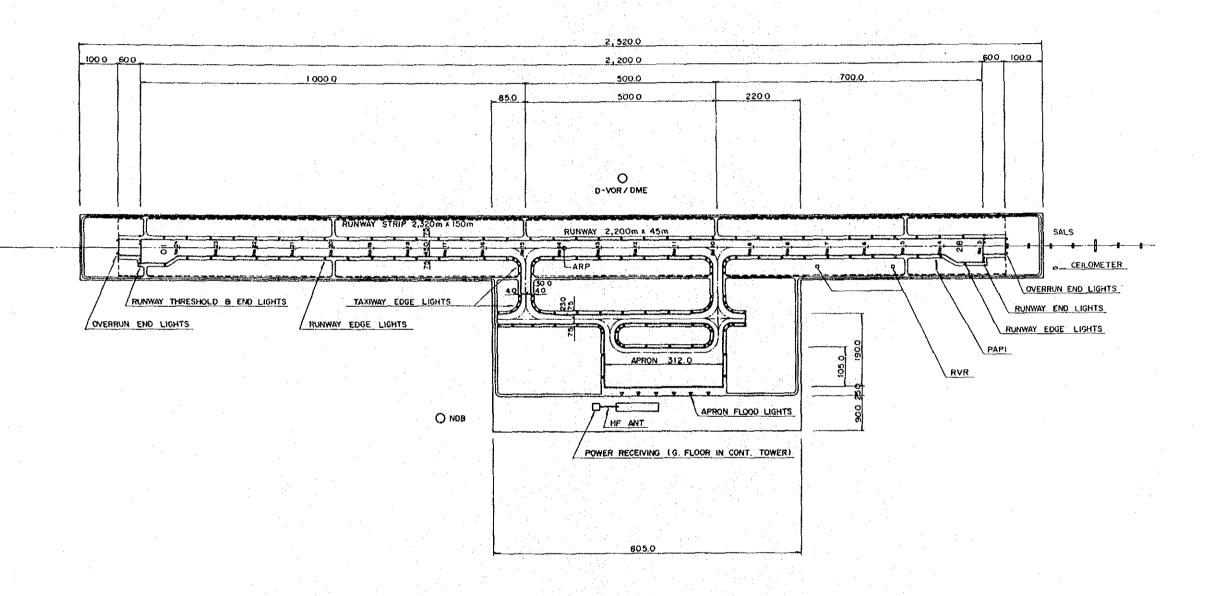


Figure 11.5-1 Proposed Naviaids Plan for Short Term Development

## 11.6 ATC Operations

## 11.6.1 Obstacle Limitation Surfaces

For the Tokua Airport, the obstacle limitation surfaces are defined as in Figure 9.6-1 and as summarized below.

	Surfaces and d	imensions (Code 4)	
1. General		Non-instrument	Precision
Conical	Slope	5%	5%
	Height	100 m	100 m
Inner Horizontal	Height	45 m	45 m
	Radius	4000 m	4000 m
Transitional Slope	·	14.3%	14.3%
2. Approach			
Length of inner edg	e	150 m	300 m
Distance from thres	hold	60 m	60 m
Divergence (each si	de)	10%	15%
First section	Length	3000 m	3000 m
	Slope	2.5%	2%
Second section	Length	<del></del>	3600 m
	Slope	·	2.5%
Horizontal section	Length	<del>-</del> .	8400 m
	Total length		15000 m
3. Take-Off Climb			
Length of inner edg	ge .	13	80 m
Distance from runv	ay end	6	60 m
Divergence (each si	de)	12	2.5%
Final width		12	200 m
Length		150	000 m
Slope			2%

## 11.6.2 Air Traffic Control

## 1) Tokua Control Zone (Refer to 2.8.5 Annex 11, ICAO)

Lateral limits shall extend to between 5 and 10 NM radius from TOK. Upper limits  $0 \sim 3000$  feet.

#### 2) Tokua Approach Control area

An approach controller should be responsible for the whole airspace of 60 NM radius without divided into two airspaces of APP control and Area control, because it is not foreseen for the time being that traffic volumes and associated manoeuvres require their respective controls.

Lateral limits 60 NM radius from TOK

Upper limits 15,000 feet

Area Control 15,000 ~ FL 245

#### 3) Requirements for ATS

- (1) Aeronautical mobile service (AMS) equipments
- (2) Aeronautical fixed service (AFS) equipments for communications between air traffic services units/other units.
- (3) Communication equipments for the control of vehicles other than aircraft on maneuvering areas.
- (4) Equipments for Meteorological information
- (5) Equipments for informations on aerodrome conditions, operational status of associated facilities, naviaids and other safety

## 11.6.3 SIDs and STARs

In the interest of efficiency, regularity and economy every effort should be made to ensure that procedures are evolved so as to keep to the minimum consistent with safety, both the time taken in executing Instrument Flights and the airspace necessary for the associated manoeuvres. Therefore, the joint consideration by DCA and operators concerned is desirable to establish SIDs and STARs.

#### 1) An example of SID

#### Tokua one Departure

Take off Runway 28, turn left (take off Runway 10, turn right), climb via TOK R-216 (216 degrees from TOK VOR) and proceed to A fix (05°55'6"S, 150°55'2"E).

Climb to 10000 feet or above within 25 NM from TOK and maintain Assigned or Specified altitude by TOK APP.

#### 2) An example of STAR

#### Tokua one Arrival

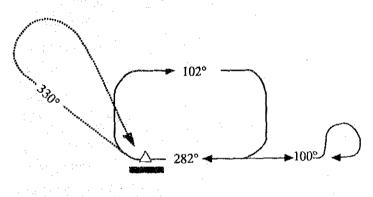
From HKN NDB, proceed via HKN 054° (From TOK 234°) to TOK.

Maintain 10000 feet or above (or specified altitude by TOK APP) until 25 NM from TOK.

#### 11.6.4 Let-downs

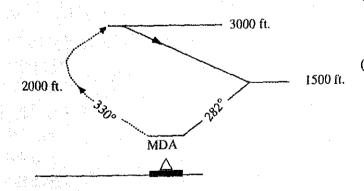
Only one procedure should be specified for each type of radio aid in relation to a particular runway.

1) An example of let-downs



VOR/DME RWY 28

- (1) Holding at VOR
  Right turn 1 minute at 3000 ft.
  or above.
- (2) Procedure turn
  Outbound 102°, Procedure turn
  at 1500 ft. within 10 NM.
- (3) MDA.....



(4) Missed Approach At VOR, turn right onto 330° radial and climb to 2000 ft. within 5 NM and turn right climbing to 3000 ft. and direct to VOR.

## 11.7 Airport Administrations

First of all, Government of PNG should decide and specify the subject agencies who are completely responsible for the respective management of airport support services such as terminal building, shops, fuels, access facilities and security etc.

The government organization and manpower of Tokua Airport at the year 2000 will be efficiently introduced from the Table 11.7-1, to cope with various requirements, taking into account the total aviation system in PNG.

Table 11.7-1 Preliminarily Estimated Staff Requirement (2000)

Discipline	Work-Hour	Man-Power
Administrator	Day	1
Secretary	Day	1
General Affairs	Day	5(1+4)
Accounting		2
Store	,	1
Concessionaire		1
Personnel Affairs	Day	4(1+3)
Personnel Affairs		2
Dispensary		1
Maintenance	Shift	19 (1 + 12 + 6)
Cleaning		6 x 2
Plumbing (Utilities)		2
Carpentry		2
Workshop		2
<u>Security</u>	Shift	$13(1+6\times2)$
<u>Electricity</u>	Shift	5(1+4)
<u>Telecommunication</u>	Shift	7(1+6)
Air/Ground Communication and		2
Navigational Aids		2
Meteorological Observation		4
Air Traffic Control	Shift	$13(1+4\times3)$
Shift Supervisor	}	1
Approach Control		11
Aerodrome Control		1
Flight Data		1
Operations	Shift	$13(1+4\times3)$
Flight plan and		2
Teletypewriter		
Ramp		2
Fire Crews		$11[1+(5\times2)]$
	<b>,</b>	Total: 92

#### 11.8 Project Evaluation

#### 11.8.1 Financial Evaluation

#### 1) Financial Cost

Financial costs of project evaluation comprise of construction cost and engineering services cost including price contingency and physical contingency. Basically, cost of civil works in year 2000 as an element of construction costs was estimated for the construction of runway with 2,200 m.

Total financial cost for the short term development plan (2000) is estimated to be 68 million Kina and that of the master plan (2010) was figured out as 150 million Kina. According to this investment plan, 46% of total financial cost would be invested for the short term development plan.

The construction costs for the short term development plan were estimated on the basis of traffic demand forecast for the level of medium. If the traffic demand for the level of minimum would be realized, these construction costs for the short term development plan would be able to cope sufficiently with the traffic demand after the year of 2010 corresponding to the master plan. Then the construction costs for the Project would be saved as a whole.

The annual disbursement schedule was drawn up on the assumption that the construction would be carried out during the period from 1995 to 1997 and the operation would be started from the year of 1997 as referred to in Part III Time Schedule.

These costs were divided into local currency portion and foreign currency portion respectively. The exchange rates of Kina to Yen and US dollar are set at 140 Yen and 1.04 US dollar. (Refer to Table 11.8-1)

Besides the detailed cost of each work item was estimated as shown in Table 11.8-2, Table 11.8-3 and Table 11.8-4.

Table 11.8-1 Annual Disbursement Schedule (Financial Cost)

			Total		5661	2	1996	9	1661	Л
	Work Item	Total (1000 K.)	F.C. (1000 US\$.)	L.C. (1000 K.)	F.C. (1000 US\$.)	L.C. (1000 K.)	F.C. (1000 US\$.)	L.C. (1000 K.)	F.C. (1000 US\$.)	L.C. (1000 K.)
A. Constru	Construction Cost	62,240	33,003	30,507	1,264	3,622	12,864	13,487	18,874	13,398
1. Civi	1. Civil Works	32,349	14,894	18,028	1,204	2,862	7,447	9,014	6,243	6,152
2. Bui	2. Building Works	10,500	8,376	2,100	0	0	4,368	1,050	4,368	1,050
3. Ope	3. Operational Facilities	8,992	6,928	2,331	0	0	0	0	6,928	2,331
4. Utility	ity	1,050	874	210	0	0	437	105	437	105
Sub-to	Sub-total (Base Cost)	52,891	31,431	22,669	1,204	2,862	12,252	10,169	17,975	9.638
5. Pric	5. Price Conti. *1)	6,704	0	6,704	0	617	0	2,810	0	3,278
6. Phy	6. Physical Conti. *2)	2,645	1,572	1,133	09	143	613	208	668	482
B. Engine	B. Engineering Services	6,052	3,300	2,879	126	362	1,286	1,287	1,887	1,230
l. Bas	1. Base Cost *3)	5,289	3,143	2,267	120	286	1,225	1,017	1,798	964
2. Pří	2. Price Conti. *1)	489	0	489	0	62	0	219	0	208
3. Phy	3. Physical Conti. *2)	275	157	124	9	71	61	51	8	59
C. Grand Total	Total	68,292	36,303	33,386	1,391	3,984	14,151	14,774	20,762	14,628

Notes \*1) Average growth rates per annum are 0% for F.C. and 5% for L.C. respectively. \*2) 5% of base cost. \*3) 10% of the total base cost of A.

Table 11.8-2 Detailed Costs of Civil Works

As of December 1991
1 Kina = 1.04 US\$

					Kina =	1.04 US\$
MARKATRAN (ARPANA)	Work Item	Unit	Quantity	Total	F.C.	L.C.
				(1000 K.)	(1000 US\$.)	(1000 K.)
A.	Earthwork			10,821	2,252	8,656
1.	Stumping	sq.m	760,000	646	134	517
2.	Strip Topsil	sq.m	576,000	945	197	756
3.	Excavation	cu.m	668,700	6,279	1,306	5,023
4.	Heaulage	cu.m	668,700	1,438	300	1,150
5.	Embankment	cu.m	564,600	1,513	315	1,210
B.	Drainage			2,302	1,680	687
1.	U-trench	cu,m	4,309	933	679	280
2.	Trench (to sea)	cu.m	3,188	690	502	207
3.	Box Culvert	cu.m	3,060	663	483	199
4.	Pipe Culvert			16	16	1
	1) dia. 900 mm	m	38	6	6	0
	2) dia. 1,350 mm	m	38	10	9	1
C.	Pavement			10,249	5,438	5,020
1.	Runway	sq.m	99,000	4,867	2,632	2,336
2.	Overrun	sq.m	7,200	138	63	. 77
3.	Taxiway	sq.m	30,870	1,518	821	729
4.	P. T. Apron	sq.m	21,530	1,226	778	478
5.	G. A. Apron	sq.m	11,240	640	293	358
6.	Shoulders	sq.m	46,680	896	410	502
7.	GSE	sq.m	8,175	157	72	88
8.	Airfield Road	sq.m	42,070	807	369	452
D.	Parking Lot	sq.m	5,500	106	49	59
E.	Access Road	sq.m	1,700	33	16	18
F.	Service Road	sq.m	25,800	495	227	277
G.	Miscellaneous Works			2,401	2,497	0
Н.	Overhead & Others			5,942	2,736	3,311
	Total			32,349	14,894	18,028

Notes 1. Runway : 2,200 m x 45 m 2. Runway Strip : 2,320 m x 150 m

Table 11.8-3 Detailed Costs of Buildings & Utilities

As of December 1991

1 King = 1 04 11\$\$

	o Carlot Street Control of Str		Management and the second seco	I Kina :	= 1.04 US\$
	Work Item	Quantity (sq.m)	Total (1000 K.)	F.C. (1000 US\$.)	L.C. (1000 K.)
Α.	Building Works	8,078	10,501	8,737	2,100
1.	Passenger Terminal	5,000	7,503	<u>-</u>	-
2.	Cargo terminal	360	216	+ <u>1</u>	: · · · · · · · · · · · · · · · · · · ·
3.	CFR Building	381	272		: 
4.	Maintenance Shop	924	555		•
5.	Administration	778	1,050		
6.	Control Tower	635	905	-	
<b>B</b> . 12	Utility	_	1,050	874	210
1.	Water Supply & Sewage Treatment etc.		1,050	•	-
	Total		11,551	9,611	2,310

Notes 1. "CFR" stands for "Crush, Fire & Rescue".

Table 11.8-4 Detailed Costs of Operational Facilities

As of December 1991 1 Kina = 1.04 US\$

		***********		1  Kina = 1	104 O29
	Work Item	Quantity	Total (1000 K.)	F,C. (1000 US\$.)	L.C. (1000 K.)
A.	Electrical Power Supply System		2,829	2,102	808
1.	Commercial Power Supply System	1 lot	486	297	200
2.	Emergency Power Supply System	1 lot	463	357	120
3.	Flight Information & Clock System	. 1 lot	964	743	250
4.	CCTV Security System	1 lot	386	297	100
5.	Telephone System	1 lot	289	223	75
6.	Public Address System	1 lot	87	67	23
7.	Fire Alarm System	1 lot	77	59	20
8.	Power Supply Monitoring & Lighting Protection System	1 lot	77	59	20
В.	Navigation Aids		1,625	1,300	375
1.	D-VOR	1 set	1,049	839	242
2.	DME	1 set	464	371	107
3.	NDB	1 set	111	89	26
C.	Communications		620	496	143
1.	VHF Air Ground Ratio	4 freq	223	178	51
2.	PTC Extension to Tokua	1 lot	186	149	43
3.	AFTN Console	1 set	111	89	26
4.	HF SSB Radio	1 set	56	45	13
5.	AFTN Peripheral	5 sets	45	36	10
D.	Lighting System		1,883	1,451	488
1.	ABN	1 set	69	53	18
2.	SALS	2 sets	77	59	20
3.	PAPI	2 sets	52	40	13
4.	HIRL	1 lot	563	434	146
∙5.	REL	4 sets	197	152	51
6.	PWOL	4 sets	30	23	8
7.	TWL	1 lot	151	117	39
8.	AFL	1 lot	405	312	105
9.	WDIL	2 sets	83	64	22
10.	CCR, Others	1 lot	183	141	48
11.	RTIL	1 set	72	55	. 19
E.	Met Equipment		2,035	1,578	517
1.	Automatic Weather Station	1 lot	1,115	869	279
2.	Com. & Monitoring Interface with National Met Center	1 lot	920	709	238
	Total	·	8,992	6,928	2,331

#### 2) Financial Benefit

Financial benefit is composed of net increase of revenues paid for various kinds of charges. The net increase of these charges was estimated by reducing the charges in case of "without the Project" condition from them in case of "with the Project".

## (1) Review of Aviation Charges

Before the amendment of "The Civil Aviation Charges Regulation 1974", it was pointed by the Report "MANUAL OF AIRPORT AND AIR NAVIGATION FACILITY TARIFFS", 1986 Edition by ICAO, as follows.

"Papua New Guinea does not have a policy of full recovery of costs properly attributable to the aviation industry for the provision and operation of aerodrome and airways facilities and services.

Since Papua New Guinea gained independence in 1975, it adopted what is called the "Public Service" or "Social Service" policy. Under this approach, the prices charged for infrastructure services are below the respective average costs of supplying them. In some instances, they are non-existent altogether.

The principles on which costs are allocated are currently under review. This administration is studying the possibility of adopting a policy of full recovery along similar lines to that of Australia. The review involves the studying of present rates with a view of increasing them to a level of commensurate with costs incurred for the provision and operation of infrastructure services and possible new avenues of cost recovery".

After the amendment of "The Civil Aviation Charges Regulation 1974", "The Civil Aviation Aircraft Charges (Domestic Services Operations) Regulation 1976" was put into effect and, for international flights, the Papua New Guinea Civil Aviation (Aircraft Charges) Regulation (as amended) made under the Civil Aviation Act provides for the determination and collection of charges for the use by aircraft of aerodromes, air route and airways facilities, meteorological, search and rescue services, operated and provided by the state.

In this regulation, a new charging system has been introduced for aircraft operations with regard to international airline operations and international general aviation aircraft. The new charging arrangement involves the introduction of a landing charge and an international enroute charge. These charges are based directly on aircraft weight and frequency of movement.

As a whole, the present charging system is considered to be almost the same as that of Australia, but the Study Team judges that the charges for aircraft operations should be equal to or more than the respective average costs of supplying all kinds of services for aerial works.

It is necessary for the charging system to be strictly and successively reviewed by comparing of the costs to the charges in the future.

#### (2) Categories of Charges

In this Study, the charges are categorized as follows by referring to charging system carried out in Japan.

#### a) Charges for Use of Airport

They are imposed on all aircrafts landed on airports from domestic airports or international airports and use airport facilities. The charges comprise of the following items.

- (a) Usual Landing charges
- (b) Special Landing charges
  They are imposed on the basis of maximum take-off weight and noise level.
- (c) Lighting Charges during Night Time
- (d) Parking Charges
- (e) Charges for Use of Hanger

Of these charges, only the item (a) is formally imposed in PNG. Landing charges for international flights are independently imposed, but ones for domestic flights are included in charges for use of air navigation facilities. With regard to item(e), rental charges are levied on users of land as business concession.

#### c) Charges for Use of Air Navigation Facilities

They are imposed on aircraft supported for their navigation including their usage of navigation facilities such as radar, radio, control facilities and etc.

#### c) Tax of Fuels for Aircraft

It will be spent for source of revenue for improvement of airports and airway facilities. But this tax is not charged in PNG.

#### d) Other charges

They include charges or fees for car parking near airports, passengers for departure from airports etc.

## (3) Charges for Domestic Flights

In this Study, charges for airports are calculated by being divided into domestic flights and international flights.

The charges for aircraft engaged in domestic service operation are classified into charges for Air Niugini and those for other airlines. According to categories mentioned above, these charges for domestic flights are classified as navigation charges.

The charges are payable in respect of the use by aircraft of aerodromes, air route and airway facilities, meteorological services and search and rescue services maintained, operated or provided by the State.

The charges for Air Niugini are imposed on the basis of hours flown, speed, capacity (tonnes) and rate (0.01 Kina) by aircraft type.

The charges for other airlines are imposed on the basis of three categories such as "private", "aerial work", and "charter" which are levied by unit charge (0.24 Kina per 100 kg, per week) and weight.

These charges include the landing charges as already mentioned.

#### (4) Charges for International Flights

The charges for international flights are classified into two categories which are "landing charges" and "international enroute charges". The former comprises of "Australia-Papua New Guinea flights" and "flights from other countries other than Australia" which are imposed on the basis of airports component, a terminal navigation component and fire services (RFFS) component taken account of weight of aircraft.

The latter, "international enroute charges", is classified as navigation charges according to the categories mentioned above. They are imposed on the basis of elements as follows:

- a) a rate of \$2.07 (Australian dollar), a factor of having the value of,
  - in relation of international flights between Papua New Guinea ports - 1, or
  - in relation to other international flights 2.
- b) the distance travelled by aircraft -
  - between the first point of entry into PNG (Flight Information Region) and the first aerodrome of destination in PNG territory.
  - between two aerodromes in PNG territory as the case requires.

and finally,

## the square root of the weight of the aircraft.

The net increase of these charges mentioned above is estimated as 7 thousand Kina in 1995, and 454 thousand Kina in 2000, and 839 thousand Kina in 2010, respectively.

## (5) Charges of Usage of Airport Facilities by Passengers

The charges of usage of airport facilities are imposed on international passengers. The revenue of this charges paid is estimated on the basis of unit charge of 15 Kina per passenger. The estimated charges are figured out to be 150 thousand Kina in 2000 and 293 thousand Kina in 2010.

#### (6) Rental Charges

The rental charges for the use of land and building in airports area are imposed mainly on airline companies such as Air Niugini, Airlinks, Island Helicopter, and Pacific Helicopter.

When Tokua Airport is constructed, these land users are expected to move from Rabaul Airport to Tokua Airport. But the rate of rental will be kept almost the same as the present level, then the net increase of rental charges seems to be negligibly small. Recent rate of rental charges is 240 Kina per year which is same for all companies.

The financial benefit is summed up of all the net increase of revenue mentioned above (Refer to Table 11.8-7).

## 3) Necessity of Leveling up for Aviation Charges

Judging from the estimates of indices for evaluation such as FIRR, NPV and B/C ratio, and financial statements on the basis of present condition for operation of airport such as aviation charges and operating cost etc., it proved to be clear that the financial feasibility of the Project can not be expected.

Then the Study Team tried to analyze the level of aviation charges of PNG for the purpose of judgement whether the present level of charges of PNG is reasonable or not. The present level of charges means such as charges for the use by aircraft of aerodrome and air-route facilities

etc. The analysis was focused on two points. The one was the comparison of landing charges between PNG and some neighboring countries. The other was the comparison of total charges corresponding to the revenues from passenger fare acquired by airlines with regard to Rabaul Airport.

The comparison of total charging systems for these countries is impossible, because the basic principles for imposing charges vary with countries. But the ways of landing charge are relatively based on the same principle.

The following table shows the comparison of landing charges for six countries concerning the type of aircraft of B737. The level of charges of Japan is the highest which is more than two times of that of PNG, followed by Australia (1.8 times), and New Zealand (1.4 times) respectively. However, the level of domestic passenger fare of PNG is higher than neighboring countries. Then the higher level of charges can be imposed on airlines in PNG. Judging from these comparisons, it is reasonable that the landing charges of PNG is raised up to the same level\* as other countries such as Australia, New Zealand and Japan, corresponding to the level of revenues of passenger fare of PNG.

\* This same level means the share of aviation charges in total revenues for airlines. The examples of this share show more than 10% in foreign countries.

Table 11.8-5 Comparison of Landing Charges for International Flights and Passenger Fares

Type of Aircraft : B737
Maximum Take-off Weight : 52,440 kg.

Name of Countries	Landing Charges (Kina)	Fares (Kina)*2
PNG	343 (100)	POM-RAB 187 (100)
Australia	624 (182)	SYD-MLB 157 (84)
New Zealand	476 (139)	WEL-OAK 103 (55)
Indonesia	223 ( 65)	JKT-DPS 114 (61)
Philippines	159 ( 46)	MNL-DVO 79 (42)
Japan	778 (227) *1	JTT-JCC 170 (91)

Note \*1: Including the special charges with regard to noise.

\*2: The distances of all routes are approximately same.

The Study Team compared with regard to revenues of actual aviation charges and revenues of aviation charges calculated from passenger fares acquired by airlines for Rabaul Airport. The former was estimated by levying on aircraft operating the domestic flights departing from Rabaul Airport. The latter is estimated by multiplying revenues from fares acquired by airlines by 0.10. The rate of 0.10 is based on an average share of aviation charges paid in total expenditures (or revenues) of representative airlines in other countries.

According to the estimates, the amount of annual actual revenue from charges is 122 thousands Kina, and the charges calculated on the basis of fares paid by domestic passenger was figured out as 750 thousands Kina respectively. The latter is approximately 6 times of the former. (Refer to Table 11.8-6)

Then the financial evaluation is carried out on the assumption that the present level of aviation charges will be raised up to six times.

Table 11.8-6 Comparison of Future Charges and Present Charges (1989: Rabaul airport)

(1989: Kabaul airport)	(1	Unit: '000 Kina	) -
Revenue from Fare for domestic Passengers 10% of (A)	:	7,502.0(A) 750.2	· ·
Revenue from Charges for Aircraft Operating Domestic Flights	•	122	

## 4) Financial Feasibility of the Project

The Project is evaluated from the financial viewpoint by figuring out the financial viability in terms of internal rate of return (IRR), benefit cost ratio (B/C), and the net present value (NPV). All the monetary calculations were based on the price level of December 1991, and the Project life (for financial evaluation) is fixed at 30 years including the construction period.

The calculation of IRR, B/C and NPV was based on the annual cash flow that was prepared from the above mentioned financial cost and annual financial benefit in accordance with the implementation schedule or annual disbursement schedule. A discount rate of 15% is applied for

the calculation of B/C ratio and NPV, because this rate is considered to be a capital cost for the Project equal to the average interest rate for loan in PNG as a criterion of judgment for financial feasibility. The indices for judgment of financial feasibility of the Project are thus figured out as follows. (Refer to Table 11.8-7)

FIRR : 3.1%

B/C : 0.32

- NPV : -34,203 thousand Kina

From the results of above calculation, the Study Team judges that the Project is not viable from the financial viewpoint by the following reasons.

- a) FIRR, as a discount rate to make the total costs in the Project life equal to the total benefits, is less than 15% as the average interest rate for loan in PNG.
- b) The total benefits are less than the total costs when they are discounted by 15%. As a result, B/C is less than 1.00 and NPV is negative.
- 5) Estimation for Profit and Loss Statement

On the assumption that Tokua Airport will be operated independently from the financial view point, the profit and loss statement is prepared.

The basic conditions of the estimation are as follows;

- The average life time of invested assets is 30 years.
- The share of foreign loan of construction cost is 80% and 20% of it will be financed by the PNG side.
- The average commercial interest rate for loan and deposit in domestic banks is 15% and 10% respectively. The loan will be repaid the next year and the period of deposit is not fixed.
- The income tax rate is 30%
- The raise up rate of maintenance and administration cost is 3% per annum.

Table 11.8-7 Financial Cost Benefit Cash Flow

						·		(Unit:	'000 Kina)
		4.4.		T22				Annual	
No.	Year	***	Phys.	Financia	Cost	Marian of the Control		Finan-	Annual
		Const.	Conti.*1	E.S.*2	O&M	Rep.*3	Total	cial Benefit*5	Cash Flow
1 1	1995	4,019.6	201.0	402.0			4,622.6	0.0	(4,622.6)
2	1996	21,943.8	1,097.2	2,194.4			25,235.4		(25,235.4)
3	1997	26,916.4	1,345.8	2,691.6			30,953.8		(30,963.8)
4	1998				1,586.4		1,586.4	48.1	(1,538.3)
5	1999	2 5 5 6			1,586.4	•	1,586.4	50.2	
6	2000			1 1	1,586.4	100	1,586.4	3,621.6	2,035.2
.7.,	2001	en de la companya de			1,586.4		1,586.4	3,938.4	2,352.0
8	2002				1,586.4		1,586.4	4,255.2	2,668.8
9	2003			•	1,586.4		1,586.4	4,572.6	2,986.2
10	2004			·	1,586.4		1,586.4	4,889.4	3,303.0
11	2005				1,586.4		1,586.4	5,206.2	3,619.8
12	2006				1,586.4		1,586.4	5,523.0	3,936.6
13	2007			* * * *	1,586.4		1,586.4	5,839.8	4,253.4
14	2008	:			1,586.4		1,586.4	6,157.2	4,570.8
15	2009	. * *			1,586.4		1,586.4	6,474.0	4,887.6
16	2010				1,586.4		1,586.4	6,790.8	5,204.4
17	2011				1,586.4		1,586.4	6,790.8	5,204.4
18	2012	- 14.7 - 1			1,586.4	•	1,586.4	6,790.8	5,204.4
19	2013	- E		٠	1,586.4		1,586.4	6,790.8	5,204.4
20	2014		· · · · · ·		1,586.4		1,586.4	6,790.8	5,204.4
21	2015				1,586.4		1,586.4	6,790.8	5,204.4
22	2016				1,586.4	•	1,586.4	6,790.8	5,204.4
23	2017				1,586.4	9,441.9	11,028.3	6,790.8	(4,237.5)
24	2018				1,586.4		1,586.4	6,790.8	5,204.4
25	2019				1,586.4		1,586.4	6,790.8	5,204.4
26	2020				1,586.4		1,586.4	6,790.8	5,204.4
27	2021				1,586.4		1,586.4	6,790.8	5,204.4
28	2022				1,586.4		1,586.4	6,790.8	5,204.4
29	2023		:	4 1	1.586.4	•	1,586.4	6,790.8	5,204.4
30	2024	in to Harris <u>to</u> rnings	· ·		1,586.4		1,586.4	6,790.8	5,204.4
						FIRR	=	3.08%	
				ear of organisms.		B/C *4	= 24	0.32	
-	,	<u> </u>	<u> </u>			NPV *4	= -34,	203.43	·

Notes: \*1 :

: 5% of construction cost.

\*2 : 10% of construction cost

\*3 : Including of 5% of physical contingency for operational facilities.

\*4 : Discount rate is 15% per annum.

\*5: After 2010, annual financial benefit was estimated to be constant because the airport capacity will be constrained by the Short Term Development Plan.

- The level of air navigation charges will go upward to six times of the present level.
- The weight of maintenance and administration cost is 3% of total construction cost.

The estimated profit and loss statement shows that the deficit will continue until eleventh year from the beginning of construction (1995), but from the twelfth year, net profit will be changed into positive. The accumulated net profit will become to positive in the nineteenth year of the Project life (2013) which is later than the year when annual surplus will be changed into positive figure (Refer to Table 11.8-8).

#### 6) Repayment Schedule

The repayment schedule of foreign loan is estimated on the assumption as follows:

- amortization period: 20 years

- starting year of amortization: 11th year of the Project year

- introducing year of loan: 1st year of the Project life

- loan interest rate: 2.7% per annum

- method of repayment: level yearly payment of principal and interest

The amount of annual amortization was calculated as 3,506 thousand Kina (Refer to Table 11.8-9).

#### 7) Money Flow Table

By estimation of money flow table, the surplus or shortage of funds can be recognized. The funds will be shortened till the thirteenth year of the Project life, but from the fourteenth year (2008), the funds will be changed into the surplus on the assumption that the level of air navigation charges will be raised up to six times of the present level (Refer to Table 11.8-10).

Table 11.8-8 Estimated Profit and Loss Statement

Accumulated	Net Profit	0	-1625	4396	-9124	-14451	-15066	-15999	-17045	-18027	-18752	-18985	-18679	-17855	-16425	-14151	-10960	-7252	-2800	2454	8635	15870	24310	33738	44227	55884	68817	83147	20066	116544	135917
Net Profit A		0	-1625	-2771	-4728	-5327	-614	-933	-1046	-982	-726	-233	306	823	1430	2274	3192	3707	4452	5254	6181	7235	8440	9427	10490	11657	12933	14330	15860	17537	19373
Total	Cost	0	1625	2571	5358	5407	5458	5510	5563	5618	5675	5734	5739	5835	2996	6184	6443	6725	6887	7117	7365	7651	2016	8346	8652	8981	9341	9735	10167	10637	11153
Income	Tax	0	0	0	0	0	0	0	0	0	0	0	0	92	247	429	682	958	1112	1336	1576	1854	2171	2532	2828	3147	3497	3880	4299	4758	5261
Depreciation	Cost	0	177	1123	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276	2276
Maintenance and Admini-	stration Cost	0	0	0	1634	1683	1734	1786	1839	1894	1951	2010	2070	2132	2196	2262	2330	2400	2472	2546	2622	2701	2782	2865	2951	3040	3131	3225	3322	3421	3574
Interest	Payable	0	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1393	1336	1277	1217	1155	1001	1026	656	891	820	747	673	. 596	518	437	354	569	182	6
Total	Revenue	0	0	-199	630	9 9 9	4844	4577	4517	4636	4950	5501	6045	6659	7426	8458	9635	10432	11339	12371	13546	14887	16416	17774	19141	20638	22274	24066	26027	28174	30527
Interest on Accumulated	Money Surplus	0	0	-217	-682	-1514	-2803	-3844	-4683	-5338	-5798	-6026	-6256	-6416	-6422	-6170	-5766	-5197	-4518	-3713	-2766	-1653	-351	677	1919	3188	4597	6161	7894	9814	11030
Interest on Depreciation	Allowance	0	0	8	130	358	585	813	1040	1268	1496	1723	1951	2179	2406	2634	2861	3089	3317	3544	3772	3999	4277	4455	4682	4910	5137	5365	5593	5820	6048
Salvage	Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Q	0	٥	0	0	0	0	0	0	٥	<b>©</b>	0	Ö	0	<b>©</b>	c
Revenue		0	0	٥	1182	1236	7062	7608	8160	8706	9252	9804	10350	10896	11442	11994	12540	12540	12540	12540	12540	12540	12540	12540	12540	12540	12540	12540	12540	12540	12540
, Key		-	7	m	<†	S	9	٣-	<b>∞</b>	Ø	20	Ξ	17	13	14	15	16	17	<u>&amp;</u>	5	ದ್ದ	21	22	23	24	25	8	27	%	33	30

Table 11.8-9 Repayment Plan for Foreign Loan

			(	Unit: '000 Kina)
Year	Annual Amortization	Loan Interest	Redemption of Principal	Loan Residual
1	0	0	0	53634
2	0	1448	0	53634
3	0	1448	0	53634
4	0	1448	0	53634
5	0	1448	0	53634
6	0	1448	0	53634
7	0	1448	0	53634
8	0	1448	0	53634
9	0	1448	0	53634
10	0	1448	0	53634
11	3506	1448	2058	51576
12	3506	1393	2113	49463
13	3506	1336	2170	47293
14	3506	1227	2229	45064
15	3506	1217	2289	42775
16	3506	1155	2351	40424
17	3506	1091	2414	38010
18	3506	1026	2480	35530
19	3506	959	2546	32984
20	3506	891	2615	30368
21	3506	820	2686	27682
22	3506	747	2758	24924
23	3506	673	2833	22091
24	3506	596	2909	19182
25	3506	518	2988	16194
26	3506	437	3069	13125
27	3506	354	3151	9974
28	3506	269	3237	6737
29	3506	182	3324	3414
30	3506	92	3414	0

Table 11.8-10 Money Flow Table

(Unit: '000 Kina)	Accumulated Money Surplus	0	-1448	4544	-10001	-18690	-25627	-31221	-35585	-39654	40173	41707	42771	-42814	41133	-38443	-34644	-30118	-24756	-18438	-11019	-2339	7789	19192	31876	45968	61605	78940	98139	119386	142883
	Money	0	-1448	9608-	-5547	-8599	-6937	-5594	4364	-3070	-1519	-1533	-1064	43	1681	2690	3799	4527	5361	6319	7429	8680	10128	11403	12685	14092	15637	17335	19199	21247	23497
	lotal Revenue	0	0	661-	630	08	4844	4577	4517	4636	4950	5501	6045	6599	7426	8458	9635	10432	11339	12371	13546	14887	16416	17774	19141	20638	22274	24066	26027	28174	30527
	fotal Expenditure	5321	29818	37488	6178	8678	11781	10171	8881	2706	6469	7035	7109	6702	5745	5768	5836	2906	28.4	6052	6128	6207	6288	6371	257	6546	6637	6731	6828	6927	7030
	Investment	5321	28370	34592	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0
	Maintenance and Administration	0	0	0	1634	1683	1734	1786	1839	1894	1951	2010	2070	2132	2196	2262	2330	2400	2472	2546	2622	2701	2782	2865	1665	3050	Tors.	3228	COCC		3524
	Togs Interest	0	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1393	1336	1277	1217	1155	1001	1026	050	801	820	747	673	296	818	1007	7	200	183	ୈ
	Redemption	0	0	1448	3096	5547	6658	6937	5594	4364	3070	3577	3647	3235	25.55	2289	1355	2414	2480	27.50	%1.9c	2686	27.58	2833	0000	3867	3080	3131	COCCO	きのの	100 mg/s
	Resident	53634	53634	53634	53634	53634	53634	\$3634	53634	53634	53634	51576	49463	47293	15064	ACT-04	40134	38010	35530	48000	30.0F.	1386	70070	1000	10183	312	2012	123	in to	77,	0
	i di		C	er,	41	15.5	6	<b>-</b>	99	ø,	01	gree greef	CI.	gar.	**	N.	20	g ans	23	9	a	कुर्मा है है	87 84	21	Ä	n	90	to i	R	3	9

Money surplus does not include "investment cost" on the assumption that it's 80% will be financed from foreign town and 20% will be financed by the PNG side. \*\*\*

#### 8) Overall Financial Evaluation

On the basis of the results mentioned above, overall financial evaluation of the Project is as follows:

- (1) Judging from the estimates of FIRR, NPV and B/C ratio as the indices for evaluation and profitability by financial statements on the basis of present conditions for operation of airport such as aviation charges and operating cost etc., it proved to be clear that the financial feasibility of the Project can not be expected.
- (2) In PNG, the passenger fare is expensive but the aviation charges such as landing charges are cheap with comparison to the neighboring countries. Besides the payment ratio of aviation charges to revenues acquired by airlines is too low by comparing with the airlines abroad.

On the basis of the present level of charges and present interest rate of loan (15%), it is never sufficient to recover not only the annual operating costs but the total Project costs included the construction costs.

(3) On the assumption that the present level of aviation charges will be raised up to sixfold, and a low interest rate of loan (ex. 2.7%) will be applied, it is possible that the annual deficit will be changed into positive figure and the cost of the Project will be recovered in the long term and then the Project can be expected to be feasible.

This means that it is necessary to consider policies such as governmental subsidies and/or loan with low interest rate by laying stress on social and public necessity.

#### 11.8.2 Economic Evaluation

#### 1) Economic Cost

Financial costs for the project evaluation are converted into the economic costs. 50% of local currency portion is assumed to be unskilled labor, then it is converted into economic costs by applying shadow wage rate (SWR) of 0.90.

Costs of foreign currency portion are mainly imported materials and equipments. Transfer payment such as taxes and duties are subtracted from the financial cost. In this Study, 10% of total financial cost is deducted.

Total economic costs for the short term development plan (2000) is assumed to be 54 million Kina (Refer to Table 11.8-11).

#### 2) Economic Benefits

The components of economic benefit of this Project are savings of fuel consumption for navigation, expenditure by foreign tourists, passengers' benefit by willingness to pay etc.

## (1) Savings of Fuel Consumption for Air Navigation

Savings for fuel will occur for aircraft navigation because aircraft will be large in size as capacity of airport would be expanded. In this Study, cost savings for fuel are estimated by taking into consideration of air passenger traffic demand and aircraft type for commercial and general aviation by route, distance of air navigation, economic price of fuel (0.03 Kina/litter), and efficiency of fuel consumption.

## (2) Expenditures by Foreign Tourists

The following factors are assumed for estimation of expenditures by foreign tourists to visit in future Tokua and Rabaul area.

- a) Ratio of tourists of air passengers to arrive at Tokua Airport is considered to be 39.2% based on traffic survey.
- Annual growth ratio of GDP per capita of foreign tourists is 3% in real term.
- c) Average expenditures of foreign tourists for one journey is 490 Kina in 1989.

Based on these assumptions, the expenditures of 39.2% of international air passengers of revealed traffic demand of potential demand as mentioned in Chapter 3, are calculated.

Table 11.8-11 Economic Cost Benefit Cash Flow

(Unit: '000 Kina)

			:	Econom	ic Cost			Annual	Annual
No.	Year	Const.	Phys. Conti.*1	E.S.*2	O&M	Rep.*3	Total	Economic Benefit*5	Cash Flow
1	1995	3,488.9	174.4	348.9			4,012.3	0.0	(4,012.3)
2	1996	19,291.8	964.6	1,929.2		e de la composición dela composición de la composición dela composición de la compos	22,185.6	0.0	(22,185.6)
3	1997	23,791.0	1,189.6	2,379.1			27,359.7	0.0	(27,359.7)
4	1998				1,397.2		1,397.2	9,258.0	7,860.8
5	1999				1,397.2		1,397.2	9,803.0	8,405.8
6	2000				1,397.2		1,397.2	10,348.0	8,950.8
7	2001	4.1			1,397.2		1,397.2	11,042.0	9,644.8
8	2002				1,397.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,397.2	11,738.0	10,340.8
9	2003				1,397.2		1,397.2	12,432.0	11,034.8
10	2004			er <sup>el</sup>	1,397.2		1,397.2	13,126.0	11,728.8
11	2005				1,397.2		1,397.2	13,822.0	12,424.8
12	2006				1,397.2		1,397.2	14,852.0	13,454.8
13	2007				1,397.2		1,397.2	15,882.0	14,484.8
14	2008	•		the state of	1,397.2		1,397.2	16,910.0	15,512.8
15	2009				1,397.2	en termin	1,397.2	17,940.0	16,542.8
16	2010				1,397.2	. P	1,397.2	18,970.0	17,572.8
17	2011				1,397.2		1,397.2	18,970.0	17,572.8
18	2012		* ************************************		1,397.2	k gH i kaja	1,397.2	18,970.0	17,572.8
19	2013		100		1,397.2	National Par	1,397.2	18,970.0	17,572.8
20	2014				1,397.2		1,397.2	18,970.0	17,572.8
21	2015	• '			1,397.2	and the second	1,397.2	18,970.0	17,572.8
22	2016				1,397.2		1,397.2	18,970.0	17,572.8
23	2017			. * *	1,397.2	8,387.5	9,784.7	18,970.0	9,185.3
24	2018				1,397.2		1,397.2	18,970.0	17,572.8
25	2019				1,397.2		1,397.2	18,970.0	17,572.8
26	2020		* * * * *		1,397.2		1,397.2	18,970.0	17,572.8
27	2021				1,397.2		1,397.2	18,970.0	17,572.8
28	2022		·		1,397.2		1,397.2	18,970.0	17,572.8
29	2023				1,397.2		1,397.2	18,970.0	17,572.8
30	2024				1,397.2		1,397.2	18,970.0	17,572.8
	· · · · · · · · · · · · · · · · · · ·			:	***************************************	EIRR B/C *4		18.51% 1.24	
<u> </u>						NPV*4	= 10	,771.95	

Note \*1: 5% of construction cost.

\*2: 10% of construction cost.

Including of 5% of physical contingency for operational facilities. Discount rate is 15% per annum.

After 2010, annual economic benefit was estimated to be constant because the airport capacity will be constrained by the Short Term Development Plan.

## (3) Passenger Benefit by Willingness to Pay

The benefit with revealed traffic demand of potential demand is calculated based on assumption that passengers get some utility from their trips by principle of "Willingness to Pay". This utility corresponds to fares paid by them.

Using the information and data of fares and traffic demand by route for commercial and general aviation provided by DCA, passengers' benefit from their trip utility is estimated.

#### (4) Time Savings of Passengers in Terminal

The procedures for check-in and -out in Tokua air terminal will be more effective than that of Rabaul air terminal because of expanded modernized facilities.

The Study Team assumes that total time saving for check-in and-out per passenger is one hour. Then time savings of passengers in terminal are estimated on the basis of the assumption that time value per hour is approximately 1.7 Kina estimated from the data for an average wage per week, 66.94 Kina, in 1990 of "Trade Men B1 & B2 of Class 5 in urban area", and an average annual growth rate of wage is 4%.

## (5) Savings of Operating and Maintenance Costs

Operating and maintenance costs will be saved by closure of Rabaul Airport. These costs are estimated approximately at 901 thousand Kina per annum.

## (6) Savings of Replacement Cost

Because of the same reason as savings of operating and administration costs, replacement cost for Rabaul Airport is considered to be saved on annual expenditures for replacement cost of 40 thousand Kina.

The economic benefit is summarized in the Table 11.8-11.

#### 3) Economic Feasibility of the Project

The Project is evaluated from the economic viewpoint by figuring out the economic viability in terms of internal rate of return (IRR), benefitcost ratio (B/C), and the net present value (NPV).

All the monetary calculations were based on the price level of December 1991, and the Project life (for economic evaluation) is fixed at 30 years including the construction period.

The calculation of IRR, B/C and NPV was based on the annual cash flow that was prepared from the above mentioned economic cost and annual economic benefit in accordance with the implementation schedule or annual disbursement schedule. A discount rate of 15% is applied for the calculation of B/C ratio and NPV, because this rate of 15% is considered to be the opportunity cost as the capital to be invested for the Project. In this Study, the available information for an opportunity cost in PNG was not acquired, then the equal rate to interest rate of long term loan in PNG was used as the opportunity cost of capital in this Project.

The indices for economic viability of the Project is thus figured out as follows.

- EIRR : 18.5% - B/C : 1.24

- NPV : 10,772 thousand Kina

#### 4) Sensitivity Analysis

Sensitivity analysis is carried out for the Project to identify the sensitivity of economic viability in case that the actual conditions may change in the construction period or project life.

The change of EIRR, the most important economic index to express the viability, is studied on the assumptions of increase of construction cost and decrease of annual benefit. The results are shown below:

Construction cost 5% up 17.7% Construction cost 10% up 17.0% Construction cost 15% up 16.3% Annual benefit 5% down 17.7% Annual benefit 10% down 16.8% Annual benefit 15% down 16.0%

It can be concluded from above economic analysis that the Project has high economic feasibility by the following reasons and is to be implemented in the earliest future.

- (1) EIRR, as a discount rate to make the total costs in the Project life equal to the total benefits, is more than 15% as an opportunity cost of capital.
- (2) The total benefits are more than total costs when they are discounted by 15%. As a result, B/C is more than 1.00 and NPV is positive.

# PART-III CONCLUSION AND RECOMMENDATION

## PART III CONCLUSION AND RECOMMENDATION

The previous chapters of this Report set forth the Master Plan (2010) Study and the Feasibility Study of the Short Term Development Plan (2000) for Tokua Airport and have shown them justifiable through the overall analyses and discussions.

Tokua Airport should be developed to substitute the present Rabaul Airport in the very near future because of its various constraints and safety considerations, and the capacity of the present Rabaul Airport has already reached saturation point. If developments delay until the next century, the number of potential passengers who could not make their planned flights because of the inadequate capacity would be so large as to cripple the air transport sector in PNG. And the adverse impact of these cancelled or unrealized trips on the economy would be severe.

For these reasons a possible conclusion for the project implementation is to start the Short Term Plan of year 2000 as early as possible before year 2000.

#### III.1 RUNWAY CONFIGURATION

In order to review the secondary runway of Tokua Airport, it is recommended that the wind coverage evaluation should be re-calculated by the perfect wind data because the present wind data with several missing record especially after September was insufficient.

#### III.2 IMPLEMENTATION OF URGENT PROGRAMS

The total factors of physical conditions at Rabaul Airport were reported by the previous studies. In order to defend the people from volcanic disaster and cope with an anticipated traffic demand increase, it is considered that the project should be urgently implemented before the short term development plan targeted on the year 2000. Therefore, it is very important for a realization of the proposed project to provide a practically phased approach so that the project will not terminate in nothing but a mere study. On the other hand, once the project construction is set about, it is necessarily followed by the further implementation.

Considering the time needed for engineering design, bidding and construction, the short term development plan is recommended to be implemented as soon as practically possible which would apply to items needing an immediate attention because of safety considerations on people coming in and out and working at the present Rabaul Airport and because of constraints of the current airport operations.

The urgent implementation of the short term development plan is a transitional stage for the project implementation before the year 2000 to the extent that Rabaul Airport operational penalty at present can be improved and operated by A300 class aircraft in a new airport at Tokua. This earlier implementation will make it easy and stimulate the stage of master plan.

Time Schedule

Year Items	1 (1993)	2 (1994)	3 (1995)	4 (1996)	5 (1997)
Detailed Design					
Negotiation/Bidding		_		277	
Construction					
(1) Civil Works		<del></del>			entales.
(2) Buildings		, es es es es	######################################		
(3) Equipments					
Flight Check	a i i i i i i i i i i i i i i i i i i i		to the contract of	. (e.e. 1. <sub>1.7</sub> 41.	
Airport Opening					>

(It is noted that all the construction works would be conducted on contract basis.)

As the conclusion of this report, this project can not be assumed financially feasible, should the loan interest rate be based on the present domestic average loan interest of approximately 15%.

In order to have the project be financially feasible, it is essentially required for the Government to consider to introduce low interest rate loans and/or governmental subsidies. However, the subject project is considered to be feasible from the economic, technical and environmental point of view. Besides, the existing Rabaul Airport being located in the midst of active volcanoes should be relocated as soon as possible to the Tokua site in order to maintain the safety of operation and to avoid volcanic disasters which would surely result in the suspension of airport function and the paralysis of transportation in the region.

Furthermore, the requirement for an early development of Tokua Airport which is considered to be the most optimum site should be stressed to also cope with the increasing air traffic demand envisaged for the very near future.

We, therefore, wish to strongly recommend the earliest realization of this Airport Project.

# ATTACHMENT

#### SURVEY SHEET FOR PASSENGERS (Tokum Airport Project Study Temm)

	Name of Airport :			6.	What were the cost (fare) and time required to arrive at this airport?
	Date of Survey :				(1) Access time : (hours) (minutes)
				٠	(2) Fare : Kina per person.
1.	What is your national Please circle the num	ity? ber of the applicable coun	try.	etali eta	Kina per group.
	<ol> <li>PNG</li> <li>Solomon Islands</li> <li>Hong Kong</li> <li>Japan</li> </ol>		Zealand lippines onesia	7.	The total pieces of luggage carried and the total weight. eg: is three pieces of luggage weighing 14 Kilograms.  3 14
2.	What is the purpose o			8.	How many times did you use this flight during the past one year? Please fill the following blank with a figure for the number of times.
	<ol> <li>Tourist</li> <li>Visiting Relative</li> <li>Others</li> </ol>	2. Commercial/Business s 4. Official Matters			times.
з.	Where did you come fr foreign residents in	om? (Only for PNG national: PNG).	ities and	9.	How many times have you experienced that you could not make reserve for this flight during the past one year? Please fill the following blank with a figure for the
	<ol> <li>Port Moresby</li> <li>Wewak</li> <li>Others</li> </ol>	2. Lae/Nadzab 3. Mada 5. Goroka 6. Mour	ang nt Hagen		number of times.
4.	Please fill the follo	route of your trip and sta wing blanks with the number ties and dates of departure be visited.	s of the	10.	Please let me know the number of persons who came to this airport to see you off. Please fill the following blank with a figure for the number of persons.  persons.
	City ->	→		11.	Please answer the following questions.
	Date of [ / ] Departure	[/] [/] [/:	] [ / ]		(1) What is your sex? 1. Male 2. Female
	1. Australia 4. Guam 7. Singapore 10. Port Moresb	5. Philippines 8. Indonesia y 11. Lae 14. Goroka	3. Solomon Island 6. Hong Kong 9. Japan 12. Madang 15. Mount Hagen		(2) What is your age? 1. Less than 19 2. 20 - 29 3. 30 - 39 4. 40 - 49 5. More than 50  What is your occupation?
5.	16. Rabaul What kind of transpo	17. Kokopo rtation did you use to get	access to this airpo	ort ?	1. Executive Official 2. Government Official 3. Professional 4. Private Company Worker 5. Self-employed 6. Agricultural/Fisher Worker
	1. Taxi 4. Hire Car	2. Private Car 5. Others	S. PMV		7. Student 8. Housewife 9. Unemployed 10. Others

### Attachment 3-2 Results of Traffic Survey

1. Date : 11th and 12th of June, 1991

2. Place : Rabaul Airport and Port Moresby Airport

3. Number of Samples

(1) Rabaul : 144

(2) Port Moresby : 681

Total : 825

4. Passengers to be Surveyed Only Passengers for Departure

OD Passenger Traffic Between Rabaul/Port Moresby and Other Airports

			والمترافعة والمتحدد والمتراور والمترور والمتراور والمتراور والمترور والمتراور والمتراور والمتراور والمتراور والمتراور والمتراو	nave a Capita de Anglemania e mar son	(Unit: Per	sons;%)
Arrival Airport	RAB	(%)	POM	(%)	TOTAL	(%)
PORT MORESBY	37	25.7	0	0.0	37	4.5
BIALLA	12	8.3	0	0.0	12	1.5
OPEN BAY	3	2.1	0	0.0	3	0.4
NAMATANAI	18	12.5	0	0.0	18	2.2
TOL	3	2.1	0	0.0	3	0.4
HOSKINS	26	18.1	0	0.0	26	3.2
BUKA	10	6.9	0	0.0	10	1.2
NADZAB (LAE)	17	11.8	192	28.2	209	25.3
KAVIENG	11	7.6	0	0.0	11	1.3
POPONDETTA	0 .	0.0	20	2.9	20	2.4
MADANG	0	0.0	12	1.8	12	1.5
GOROKA	0	0.0	53	7.8	53	6.4
MOUNT HAGEN	0	0.0	59	8.7	59	7.2
WAPENAMNDA	. 0	0.0	7	1.0	7	0.8
GURNEY	0	0.0	18	2.6	18	2.2
RABAUL	0	0.0	39	5.7	39	4.7
DARU	. 0	0.0	9	1.3	9	1.1
KERMA	0	0.0	16	2.3	16	1.9
TABUBIL	. 0	0.0	4	0.6	4	0.5
MENDI	0	0.0	10	1.5	10	1.2
KUNDIAWA	0	0.0	13	1.9	13	1.6
WAU	0	0.0	2	0.3	2	0.2
CAIRNS	0	0.0	81	11.9	81	9.8
BRISBANE	0	0.0	55	8.1	55	6.7
SINGAPORE	0	0.0	43	6.3	43	5.2
HONIARA	0	0.0	25	3.7	25	3.0
CHARTER	5	3.5	2	0.3	7	0.8
N. A.	2	1.4	21	3.1	23	2.8
TOTAL	144	100.0	681	100.0	825	100.0

			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	National				
		<del>Pilos:</del> > <del>resy</del>		INanonan	ny :		(Unit: Pers	sons; %
			RAB	(%)	РОМ	(%)	TOTAL	(%)
· 1	. PNG	1	100	69.4	402	59.0	502	60.8
2	. Australia		23	16.0	132	19.4	155	18.8
3	. New Zealand	j.	1	0.7	24	3.5	25	3.0
4	. Solomon Is.	**, I	- 1	0.7	14	2,1	15	1.8
5	. Guam		0	0.0	- 1	0.1	1	0.1
6	. Philippines		0	0.0	19	2.8	19	2.3
7	. Hong Kong		0	0.0	2	0.3	2	0.2
8	. Singapore		2	1.4	8	1.2	10	1.2
9	. Indonesia		0	0.0	1	0.1	1	0.1
10	. Japan		1	0.7	12	1.8	13	1.6
11	. Others		16	11.1	60	8.8	76	9.2
12	N. A.		0	0.0	6	0.9	6	0.7
	Total		144	100.0	681	100.0	825	99.8

Total	144	100.0	681	100.0	825	99.8
					·	
			:		•	
n Markan Markan	⊕ Pi	irpose of	Ггір			
			:	(	(Unit: Per	sons; %)
	RAB	(%)	POM	(%)	TOTAL	(%)
1. Tourist	8	5.7	65	9.5	73	8.9
2. Commercial/Business	54	38.6	197	28.9	251	30.6
3. Visiting Relatives	34	24.3	171	25.1	205	25.0
4. Official Matters	15	10.7	95	14.0	110	13.4
5. Others	29	20.7	126	18.5	155	18.9
6. N. A.	0	0.0	27	4.0	27	3.2
Total	140	100.0	681	100.0	821	100.0

## Originated Areas (Airports)

				the state of the s	(Unit: Persons; %)
yang sahigang gamalaks, sadigang sanggang panggang dan dan kanggang (A.S.	RAB	(%)	РОМ	(%)	TOTAL (%)
1. Port Moresby	y 44	30.6	370	54.3	414 50.2
2. Lae/Nadzab	17	11.8	78	11.5	95 11.5
3. Madang	0	0.0	11	1.6	1.3
4. Wewak	2	1.4	7	1.0	9 1.1
5. Goroka	. 0	0.0	25	3.7	25 3.0
6. Mount Hager	n 1	0.7	25	3.7	26 3.2
7. Others	71	49.2	81	11.9	152 18.4
8. N. A.	9	6.3	84	12.3	93 11.3
Total	144	100.0	681	100.0	825 100.0

## Access Modes

				(	Unit: Pers	sons ; %)
	RAB	(%)	POM	(%)	TOTAL	(%)
1. Taxi	1	0.7	22	3.2	23	2.8
2. Private Cat	98	68.1	338	49.6	436	52.8
3. PMB	17	11.8	113	16.6	130	15.8
4. Hire Car	2 :	1.4	35	5.2	37	4.5
5. Others	10	6.9	102	15.0	112	13.6
6. N. A.	16	11.1	71	10.4	87	10.5
Total	144	100.0	681	100.0	825	100.0

		Access Tim	e			
	gi <sup>n</sup> districtive, each plot and assumption successful that the first successful the successful that the s	· ·		inger plans state of the second s	(Unit: Per	sons; %)
Minute	RAB	(%)	POM	(%)	TOTAL	(%)
0 ~ 20	119	82.6	603	88.5	722	87.5
21 ~ 40	1 ° 0 ° 1	0.0	0 :	0.0	Ó	0.0
41 ~ 60	13	9.0	9	1.3	22	2.7
61 ~ 80	6	4.2	8	1.2	14	1.7
81 ~ 100	0 "	0.0	• <b>0</b> . =	0.0	0	0.0
101 ~ 120		0.0	1	0.2	1	0.1
121 ~	0	0.0	6	0.9	6	0.7
N. A.	6	4.2	54	7.9	60	7.3
Total	144	100.0	681	100.0	825	100.0

### Access Cost

					(Unit: Pe	rsons; %)
Kina	RAB	(%)	POM	(%)	TOTAL	(%)
/·0 ~ 1.0	15	10.4	0	0.0	15	1.8
1.1 ~ 2.0	4	2.8	3	0.4	7	0.85
2.0 ~ 4.0	3	[ 24 ± 2.1	4	0.6	7	0.85
4.1 ~ 6.0	0	0.0	- : 6	0.9	6	0.7
6.1 ~ 10.0	3	A 2.1	5	0.7	8	1.0
10 ~	12	8.3	139	20.4	151	18.3
N. A.	107	74.3	524	77.0	631	76.5
Total	144	100.0	681	100.0	825	100.00

### Number of Baggages

	:	·				acajuncanalophocad	(Unit : Pei	rsons; %)
	Piece		RAB	(%)	POM :	(%)	TOTAL	(%)
Egytymatical-minimum	0	. :	5	3.5	31	4.5	36	4.4
	1.		44	30.6	217	31.9	261	31.6
	2,		49	34.0	237	34.8	286	34.7
	3		17	11.8	77	11.3	94	11.4
	4		8	5.6	46	6.8	54	6.5
	5		10	6.9	40	5.9	50	6.1
N	Tore than 5		11	7.6	33	4.8	44	5.3
,	Total		144	100.0	681	100.0	825	100.0

## Weight of Baggages

								(Unit: Pers	ons; %)
	Κg	•	R.A	λB	(%)	POM	(%)	TOTAL	(%)
0	~	5	1	4	9.7	144	21.1:	158	19.2
. 6	~	10	2	9	20.1	178	26.1	207	25.1
11	~	15	2	1.	14.6	. 137	20.1	158	19.2
16	~	20	4	8	33.3	102	15.0	150	18.2
21	~	30	1	5	10.4	78	- 11.5	93	11.3
31	~	40		6	4.2	13	1.9	19	2.3
41	~	50		2	1.4	10	1.5	12	1.5
51	~			9	6.3	19	2.8	28	3.4
Tota	 l		14	4 1	00.0	681	100.0	825	100.2

## Number of Times of Boarding

A STATE OF THE PARTY OF THE PAR	-		والمراجعة والمعارض والمستعارض والمستعارض	_	(Unit: Per	sons; %)
Times	RAB	(%)	POM	(%)	TOTAL	(%)
2 2	76	52.8	405	59.5	481	58.3
3 ~ 4	28	19.4	102	15.0	130	15.8
5 ~ 6	12	8.3	38	5.6	50	6.1
7 ~ <b>8</b> /2001	1.5	0.7	14	2.1	- 15	1.8
9 ~ 10	5	3.5	6	0.9	11	1.3
11 ~ 15	12	8.3	7	1.0	19	2.3
16 ~ 20	3	2.1	1	0.1	4	0.5
20 ~	3	2.1	3	0.4	6	0.7
N. A.	. 4	2.8	105	15.4	109	13.2
Total	144	100.0	681	100.0	825	100.0

Times of Failures for Reservation

				(1	Unit: Per	sons; %)
Times	RAB	(%)	POM	(%)	TOTAL	(%)
0	125	86.8	558	81.9	683	82.8
1 - <b>2</b> - <b></b>	13.	9.0	101	14.8	114	13.8
3 2 4 4	3	2.1	17	2.5	20	2.4
5 ~ 6	1	0.7	3	0.4	4	0.5
7 ~ 8	0	0.0	1	0.2	1	0.1
9 ~ 10	2	1.4	0	0.0	2	0.3
11 ~ 15	0	0.0	1	0.2	1	0.1
16 ~ 20	0	0.0	0	0.0	0	0.0
21 ~	0	0.0	0	0.0	0	0.0
Total	144	100.0	681	100.0	825	100.0

## Number of Persons for Seeing Off

				(Umit: Pers	ons, 70
RAB	(%)	POM	(%)	TOTAL	(%)
21	14.6	232	34.1	253	30.7
42	29.2	175	25.7	217	26.3
26	18.1	117	17.2	143	17.3
21	14.6	50	7.3	71	8.6
9	6.3	45	6.6	54	6.5
5	3.5	20	2.9	25	3.0
3	2.1	14	2.1	17	2.1
0	0.0	8	1.2	8	1.0
3	2.1	1	0.1	4	0.5
0	0.0	0	0.0	.0 <sub>88</sub>	0.0
8	5.6	6	0.9	14	1.7
6	4.2	13	1.9	19	2.3
144	100.0	681	100.0	825	100.0
	21 42 26 21 9 5 3 0 3 0 8 6	21 14.6 42 29.2 26 18.1 21 14.6 9 6.3 5 3.5 3 2.1 0 0.0 3 2.1 0 0.0 8 5.6 6 4.2	21       14.6       232         42       29.2       175         26       18.1       117         21       14.6       50         9       6.3       45         5       3.5       20         3       2.1       14         0       0.0       8         3       2.1       1         0       0.0       0         8       5.6       6         6       4.2       13	RAB       (%)       POM       (%)         21       14.6       232       34.1         42       29.2       175       25.7         26       18.1       117       17.2         21       14.6       50       7.3         9       6.3       45       6.6         5       3.5       20       2.9         3       2.1       14       2.1         0       0.0       8       1.2         3       2.1       1       0.1         0       0.0       0       0.0         8       5.6       6       0.9         6       4.2       13       1.9	RAB         (%)         POM         (%)         TOTAL           21         14.6         232         34.1         253           42         29.2         175         25.7         217           26         18.1         117         17.2         143           21         14.6         50         7.3         71           9         6.3         45         6.6         54           5         3.5         20         2.9         25           3         2.1         14         2.1         17           0         0.0         8         1.2         8           3         2.1         1         0.1         4           0         0.0         0         0.0         0           8         5.6         6         0.9         14           6         4.2         13         1.9         19

43		
•	_	v
L.J	u	л

					(1	Unit: Per	csons; %)	)
	Sex	RAB	(%)	POM	(%)	TOTAL	, (%)	
1.	Mail	105	72.9	482	70.8	587	71.2	
2.	Female	36	25,0	183	26.9	219	26.5	2
3.	N. A.	3	2.1	16	2.3	19	2.3	
	Total	144	100.0	681	100.0	825	100.0	

Ages

	-		The state of the s	the grant with the subject of the su			(Unit: Per	sons; %)
-	Ages	para di mandalan ing	RAB	(%)	POM	(%)	TOTAL	(%)
		19	18	12.5	49	7.2	67	8.1
	20 ~	29	43	29.8	199	29.2	242	29.3
	30 ~	23	59	41.0	244	35.8	303	36.7
	40 ~	49	17	11.8	114	16.8	131	15.9
	50 ~	,	2	1.4	48	7.0	50	6.1
	N. A.		5	3.5	27	4.0	32	3.9
	Total		144	100.0	682	100.0	825	100.0

## Occupation

					(1	Unit: Per	sons; %)
	Occupation	RAB	(%)	РОМ	(%)	TOTAL	(%)
1.	Executive Officer	2	1.4	55	8.1	57	6.9
2.	Government Officer	31	21.5	118	17.3	149	18.1
3.	Professional	9	6.2	79	11.6	88	10.7
4.	Private Company Worker	55	38.2	139	20.4	194	23.5
5.	Self-employed	2	1.4	50	7.3	52	6.3
6.	Agricultural/Fisher Worker	3	2.1	4	0.6	7	0.9
7.	Student	15	10.4	70	10.3	85	10.3
8.	Housewife	7	4.9	41	6.0	48	5.8
9.	Unemployed	.5	3.5	49	7.2	54	6.5
10.	Others	5	3.5	43	6.3	48	5.8
11.	N. A.	10	6.9	33	4.9	43	5.2
	Total	144	100.0	681	100.0	825	100.0

Purpose of Trip by Nationality (Port Moresby)

								(Unit:	Persons; %)
	Nicology Line				m	4	5	9	
	Nationality		Commercial/	ercial/	Visiting	Official			
		simo I		ness	Relatives	Matters	.Others	Z. A.	Total
	PNG		68	86	123	73	97	3	402
	(%)	4.2	22	press)	30.6	18.2	24.1	0.7	100.0
તં	Australia	21	•	53	25	9	<b>«</b>	<u>.</u>	130
٠	(%)	15.9	47	7.	18.9	4.5	6.1	, % , %	1000
'n	New Zealand	. 2		-	v	4	<del>, , , , , , , , , , , , , , , , , , , </del>	) p	2.0
	(%)	8.3	45.8	00	20.8	16.7	4.2	4	1000
₹	Solomon Is.	0		5	γ.	'n	i u	<u> </u>	***
	(%)	0.0	35.	1	21.4	21.4	21.4	00	1001
Ś	Guam					_		) }	
	(%)	0.0	001	٠. ٥	0.0			) C	- 001
ó	Philippine			٠,		> <del>;-</del>	: :	) ·	2007
	. (%)	0.0	15.8	. ∞ <u>.</u>	31.0	- (1°	† <del></del> †	26.2	) (
7	Long Vone	•			) (	;	4	7.07	100.0
• •	FIOR STORY		1	<u></u> (	0 (	<del>• •</del> • • • • • • • • • • • • • • • • •	0	0	7
. (	(0/)	0.0	20	<b>.</b>	0.0	50.0	0.0	0.0	100.0
œ	Singapore	2			possi.	0	4	0	<b>∞</b>
	(%)	25.0	12.	'n	12.5	0.0	50.0	0.0	100.0
9.	Indonesia	0		0		0	0	C	şsses
	(%)	0.0	0	0	100.0	0.0	0.0	0.0	100.0
10.	Japan			00	post	2	С	C	1.2
	(%)	8.3	66.7		8.3	16.7	0.0	0.0	100.0
h-4	Others	22		4	4	Ŋ	œ	7	9
	(%)	36.7	23.3	.3	6.7	8.3	13.3	117	100.0
12.	N. A.	0		<b>—</b>	7	0		6	V
	(%)	0.0	16.	7	33.3	0.0	16.7	33.3	100.0
	Total	\$9	197	Ž.	171	95	126	27	681
	(%)	5.V		د	25.1	14.0	18.5	4.0	100.0

Purpose of Trip by Nationality (Rabaul)

Persons: %)		Total	100 100.0	23	100.0	0	) v	100.0	0	0.0	0	0.0	0	0.0	200	0.001	0 0	0.0	C	0.001	<b>∞</b> ;	100.0	<u>۵</u>	0.0	4	100.0
Unit: P	9	Z. A.	3.0	0 0	0.0	<i>و</i> د	0	0.0	0	0.0	0	0.0	- - -	0.0	000	ວ.	0 0	0.0	0 6	0.0		6.3	0	0.0	29	20.1
	5	Others	20 20.0	7 [	~ 7	00	·	100.0	0	0.0	0	0.0	0	0.0	00	0.0	0 (	0.0	00	o. 0	9	37.5	0	0.0	15	10.4
	4	Official Matters	14 14.0	0 (	0.0	00	) C	0.0	0	0.0	0	0.0	0	0.0	000	0.0	0 (	0.0	00	0.0	<b></b>	6.3	0	0.0	84	23.6
	3	Visiting Relatives	28 28.0	<b>(</b> 0)	21.7	1001	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0 (	0.0	0	0.0	0	0.0	0	0.0	54	37.5
	2	Commercial/ Business	35 35.0		47.8	00	o C	0.0	0	0.0	0	0.0	0 0	0.0	200	99	O (	0.0	<del></del> - (	0.001	'n	31.3	0	0.0	∞	5.8
		Tourist	0.0	ν, i	21.7	© C	) C	0.0	0	0.0	0	0.0	0	0.0	0 0	0.0	O ,	0.0	0 0	0.0	(M)	18.8	0	0.0	4	2.8
						-					:		1					-								
		Nationality	PNG (%)	Australia	(%)	New Zealand	(%)	(%)	Guam	(%)	Philippine	(%)	Hong Kong	(%)	Singapore	(%)	Indonesia	(%)	Japan	(%)	Others	(%)	₹ Z	(%)	Total	(%)
	:			7		m m	ব		δ,		6.		7.		∞		ó		10.		proof.		12.	•		1

Purpose of Trip by Sex (Port Moresby)

Cov		2	3	4 %	νn	9	
367	Tourist	Commercial/ Business	Visiting Relatives	Official	Others	Z.A.	Total
l. Male (%)	40	170 35.3	107 22.2	77 16.0	70	18	482
2. Female (%)	23	22 12.0	59 32.2	17 9.3	54 29.5	**************************************	183
3. N. A. (%)	12.5	31.3	31.3	6.3	12.5	6.3	16
Total (%)	65	197 28.9	171 25.1	95	126 18.5	27	100.0

Purpose of Trip by Sex (Rabaul)

	Sex	l Tourist	2 Commercial/ Business	3 Visiting Relatives	4 Official Matters	5 Others	y v	Total
	Male (%)		47.8	20 19.0	14	17	1.9	105
5	Female (%)	& %	19.4	38.9	2.8	25.0	5.6	36 100.0
m	N. A. (%)	0.0	0.0	0.0	0.0	100.0	0:0	3 100.0
	Total (%)	5.6	54 37.5	34 23.6	15 10.4	29 20.1	2.8	144 100.0

Purpose of Trip by Age (Port Moresby)

	-	2	ť	4	ν.	9	
Age	Tourist	Commercial/ Business	Visiting Relatives	Official Matters	Others	, X	Total
61 ~	6	0	21		16	-	48
(%)	18.8	0.0	43.8	2.1	33.3	2.1	100.0
20 ~ 29	S	32	75	23	54	10	661
(%)	2.5	16.1	37.7	11.6	27.1	5.0	100.0
30 ~ 39	28	91	45	45	31	4	244
(%)	11.5	37.3	18.4	18.4	12.7	1.6	100.0
~ 04	14	53	20	8	9	m	114
(%)	12.3	46.5	17.5	15.8	5.3	2.6	100.0
~ 20 ~	9		7	9	13	٧.	48
(%)	12.5	22.9	14.6	12.5	27.1	10.4	100.0
X	en	10	 	7	9		28
(%)	10.7	35.7	10.7	7.1	21.4	14.3	100.0
Total	65	197	171	95	126	27	189
(%)	9.5	28.9	25.1	14.0	28.5	4.0	100.0

Purpose of Trip by Age (Rabaul)

		2	ń	4	n	O	
Age	Tourist	Commercial/ Business	Visiting Relatives	Official Matters	Others	Ä,	Totai
01 sec ~ 2 constant sec	0	Ĭ	12	0	S	0	18
(%)	0.0	5.6	66.7	0.0	27.8	0.0	100.0
20 ~ 29		15	· 👀	4	15	0	43
(%)	2.3	34.9	18.6	9.3	34.9	0.0	100.0
30 ~ 39	4	26	10	6	9	4	59
œ	6.8	44.1	16.9	15.3	10.2	6.8	100.0
~ 07	g-freed	∞	m	7	m	0	17
	5.9	47.1	17.6	11.8	17.6	0.0	100.0
20 ~	0	7	0	0	0	0	7
(%)	0.0	100.0	0.0	0.0	0.0	0.0	100.0
A Z	2	2	•~•	0	0	0	Ŋ
(%)	40.0	40.0	20.0	0.0	0.0	0.0	100.0
Total	∞	54	34	15	29	4	144
(%)	5.6	37.5	23.6	10.4	20.1	2.8	100.0

Purpose of Trip by Originated Area (Port Moresby)

		4	Co dur vo scodu			//^	(Unit:	(Unit: Persons; %)
		p=4	2	3	4	5	9	
	Originated Area		Commercial/	Visiting	Official			
		Tourist	Business	Relatives	Matters	Others	N. A.	Total
-	Роп Moresby	20	127	100	75	43	5	370
	(%)	5.4	34.3	27.0	20.3	9.11	4.	100.0
તં	Lae/Nadzab	Φ\	38	15	7	31	ю	78
	(%)	11.5	23.1	19.2	2.6	39.7	3.8	100.0
w	Madang	pool		purd	ю	'n	0	proof.
	2 (%)	9.1	16	9.1	27.3	45.5	0.0	100.0
4.	Wewak	0	2	ന	2	0	.0	7
	(%)	0.0	28.6	42.9	28.6	0.0	0.0	100.0
Ŋ.	Goroka	0	<b>v</b> 0	10	<del></del> 1	6	0	L
	(%)	0.0	20.0	40.0	4.0	36.0	0.0	100.0
6	Mount Hagen	ς.	4	ů, W	pod	12	0	25
	(%)	20.0	16.0	12.0	4.0	48.0	0.0	100.0
7.	Others	7	19	23	90	21	ĊÙ	8
	(%)	9.8	23.5	28.4	6.6	25.9	3.7	100.0
∞	Z. Ą.	23	21	16	m	Ŋ	16	8
	(%)	27.4	25.0	19.0	3.6	6.0	19.0	10.0
	Total	65	197	171	95	126	27	681
	(%)	9.5	28.9	25.1	14.0	18.5	4.0	100.0

(Rabaul)	
Area	
Originated	)
e of Trip by Or	
T jo esour	
Pur	

			Purpose of Trip	Purpose of Trip by Originated Area	Area (Rabaul)			
							(Unit:	(Unit: Persons;%)
743		<b></b> -	2	3	4	5	9	
	Originated Area	Tourist	Commercial/ Business	Visiting Relatives	Official Matters	Others	Ž.	Total
	Port Moreshy	0	0	9.00	6	100	0	44
• · ·	(%)	4	20.5	13.6	20.5	40.9	0.0	100.0
r	I ae/Nadzab	2	6	K)		0	7	17
. · }	(%)	11.8	52.9	17.6	5.9	0.0	11.8 11.8	100.0
(۲۰	Madang	0	0	0	0	0	0	0
) }	(%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Wewak	0	0	7	0	0	0	2
:	(%)	0.0	0.0	100.0	0.0	0.0	0.0	100.0
v	Goroka	0	0	0	0	0	0	0
, }	(%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
\c	Mount Hagen	0	0	, <del>***</del> **	0	0	0	
;	(%)	0.0	0.0	100.0	0.0	0.0	0.0	100.0
1	Others	4	31	20	Ω	10		<u></u>
	(%)	5.6	43.7	28.2	7.0	14.1	***	100.0
×	4 7	C	ν,		0		park	6
;	(%)	0.0	55.6	22.2	0.0	11.	enia grad grad grad	100.0
	Total	8	54	34	15	29	4	144
	(%)	5.6	37.5	23.6	10.4	20.1	2.8	100.0

Moresby)
(Port
pation
Occur
Ş
Trip
õ
Purpose of Trip by (

							(Unit: F	Persons: %)
			2	3	4	5	. 9	
	Occupation	Tourist	Commercial/ Business	Visiting Relatives	Official Matters	Others	ż	Total
-	Executive Officer	2	28	۶.	7	3	3	55
•	(%)	3.6	50.9	9.1	25.5	5.5	5.5	100.0
<b>~</b> i	Government Officer	9	35	14	48	14	Ening	8
	(%)	5.1	29.7	11.9	40.7	11.9	9.0	100.0
(r)	Professional	01	54	m	9	9	٥	. 62
	(%)	12.7	68.4	3.8	7.6	7.6	0.0	100.0
4.	Private Company Worker		43	40	14	21	4	139
	(%)	12.2	30.9	28.8	10.1	15.1	2.9	100.0
Ŋ	Self-employed	00	16	17	7	· •	<b>parte</b>	50
	(%)	16.0	32.0	34.0	4.0	12.0	2.0	100.0
9	Agri./Fis. Worker	0	0	Ņ	0	7	0	4
	(%)	0.0	0.0	50:0	0.0	50.0	0.0	100.0
r~	Student	Φ	فسنو	35	<b>₩</b>	23	<del>, mod</del>	70
•	(%)	12.9	1.4	50.0	1.4	32.9	4.	100.0
· 00	Housewife	Ø.	, mad	-	<b>P</b>		12	49
	(%)	22.0	2.4	41.5	2.4	2.4	29.3	100.0
6	Unemployed	<b>₽</b>	peral	23	0	23	, Arred	49
	(%)	2.0	2.0	46.9	0.0	46.9	2.0	100.0
10.	. Others	2	ν,	σ.	peril	13	13	43
	(%)	4.7	11.6	20.9	2.3	30.2	30.2	100.0
	Ž.	p-ref	13	9	<b>∞</b>	m	7	33
	(%)	3.1	39.4	18.2	24.2	9.1	6.1	100.0
	Total region of the second of	65	197	171	- 95	126	27	681
	(%)	9.5	28.9	25.1	14.0	18.5	4.0	100.0
-								

(Rabaul)	
Occupation	
of Trip by	
Purpose of	

		3.5	4 80	2	9	
Occupation	Commercialy Tourist Business	Visiting Relatives	Omcia. Matters	Others	Z. A.	Total
Executive Officer	0 2	0	0	0	0	2
(%)	0.00 100.0	0.0	0.0	0.0	0.0	100.0
2. Government Officer	1	<b>6,7</b>	14	<b>∞</b>	, <b>.</b>	E
	0.0	9.7	45.2	19.4	3.2	100.0
. Professional		<b>1</b>	-	0	0	0
(%)	77.8		prod prod prod	0.0	0.0	100.0
. Private Company Worker	ward.	7	0	4	7	55
(%)	1.8	12.7	0.0	7.3	3.8	100.0
. Self-employed	0 0	-	0		0	2
(%)	0.0 0.0	50.0	0.0	20.0	0.0	100.0
. Agni./Fis. Worker	0 3	0	0	0	0	<b>(</b> Δ)
(%)	0.0 100.0	0.0	0.0	0.0	0.0	100.0
. Student	0	13	0	-	0	15
(%)	0.0	86.7	0.0	6.7	0.0	0.00
. Housewife	0	4	0	ĸ	0	<b>~</b>
(%)	0.0 0.0	57.1	0.0	42.9	0.0	100.0
9. Unemployed	0	4	0	p-ret	0	
•	0.0 0.0	80.0	0.0	20.0	0.0	100.0
10. Others	0 0	.0	0	NO.		Ŋ
(%)	0.0 0.0	0.0	0.0	100.0	0.0	100.0
I. Z. A.	0	+	0	∞ :	<b>yuzmq (</b>	01
(%)	0.0 0.0	10.0	0.0	80.0	10.0	100.0
Total	8 54	34	15	29	4	144
(%)		73.6	10.4	201	ر ار	100 C

Attachment 8-1 Air Passengers in PNG (1)

Airports	1983	1984	1985	1986	1987	1988	1989	Ratio (%)	Growth Rate (%)
International									
Chartered	83,907	106,472	86,378	99,211	105,900	117,783	132,230	7.2	7.9
Scheduled	4,316	3,041	82	•	765	-627	517	0.0	-29.8
Sub total	88,223.	109,513	86,463	99,211	106,665	118,410	132,747	7.2	7.0
Domestic					. •		· .		
Port Moresby	438,073	484,561	584,245	593,286	551,916	511,100	557,431	30.4	4.1
Nadzab (Lae)	195,823	191,474	187,244	189,504	196,634	221,704	231,926	12.6	2.9
Rabaul	116,330	112,759	109,298	101,705	111,182	132,823	146,255	8.0	3.9
Mt. Hagen	73,982	79,839	86,165	71,988	79,947	115,873	124,238	8.9	0.6
Goroka	65,354	62,039	64,726	60,470	66,742	78,509	82,124	4.5	3.9
Madang	78,680	74,337	70,253	64,177	65,073	81,560	81,638	4.5	0.8
Kieta	65,360	899'99	80,462	63,232	68,990	75,121	76,158	4.2	2.6
Wewak	60,288	66,981	74,541	51,186	52,037	67,194	69,438	3.8	2.4
Popondetta	33,938	35,201	36,515	32,571	33,962	38,802	41,049	2.2	3.2
Hoskins	30,915	33,578	36,524	27,494	29,546	35,206	40,764	2.2	4.7

Air Passengers in PNG (2)

			. :														
	(Unit: Persons)	Annual Growth Rate (%)	6.5	6.1	7.0	14.7	21.2	10.0	8.5	4.5	4.9	5.9	27.8	3.8	•	4.1	4.3
	(Uni	Component Ratio (%)	2.0	1.9	1.3	1.3	1.2	1.2		0.1	1.0	1.0	0.4	0.3	0.0	92.8	100.0
		1989	37,239	35,575	23,213	22,967	21,851	21,300	19,845	19,130	18,242	17,476	7,358	5,694	0	1,700,911	1,833,658
		1988	32,482	27,594	20,301	20,378	23,047	19,250	20,673	15,575	16,348	17,005	6,153	5,375	0	1,582,073	1,700,483
s in PNG (2)		1987	27,522	12,620	12,835	17,876	7,018	15,240	14,217	14,974	8,116	7,208	2,400	3,009	10,909	1,409,973	1,516,638
Air Passengers in PNG (2)	1. :	1986	26,153	15,454	15,990	18,265	7,557	13,326	13,716	14,722	10,162	7,083	2,136	6,048	10,950	1,417,175	1,516,386
		1985	24,526	31,711	16,088	21,465	5,269	20,730	13,943	13,546	14,955	9,344	2,572	4,820	9,157	1,518,099	1,604,562
		1984	24,998	27,993	15,772	19,916	6,002	15,767	13,780	14,100	19,187	10,752	2,133	4,679	9,756	1,395,272	1,504,785
		1983	25,481	24,954	15,462	10,099	6,897	11,998	13,626	14,690	24,684	12,380	1,691	4,542	10,415	1,335,662	1,423,885
		Airports	Gurney	Tabubil	Daru	Kavieng	Tari	Vanino	Chimbu (Kundiawa)	Manus	Kiunga	Mendi	Misima	Lousia	Buka	Sub total	Total

#### Attachment 8-2 Outline of Methodology for Estimation of Potential Demand

It is assumed that the number of potential passengers (or the number of passengers when the number of seats are limitless) is "normal distribution N (P,  $\sigma^2$ )" of which mean value is P, and variance is  $\sigma^2$ .

When the number of supplied seats are S, the number of carried passengers, P are

when 
$$P \le S$$
,  $P' = P$ 

when 
$$P > S$$
,  $P' = S$ .

Assuming the mean values are P and P', P' becomes the following formula ①.

When both sides of above formula are divided by S,

$$\frac{P'}{S} = \frac{1}{S} \cdot \frac{1}{\sqrt{2\pi\sigma}} \int_{-\infty}^{s} P \cdot e^{-\frac{1}{2} \left(\frac{P-\bar{P}}{\sigma}\right)} dp + \frac{1}{\sqrt{2\pi\sigma}} \int_{s}^{\infty} e^{-\frac{1}{2} \left(\frac{P-\bar{P}}{\sigma}\right)^{s}} dp \dots 2$$

where P/S stands for load factor.

In the first term of right side of

$$\frac{1}{\sqrt{2\pi\sigma}} \int_{-\infty}^{s} P \cdot e^{-\frac{1}{2} \left(\frac{P - \overline{P}}{\sigma}\right)^{s}} dp$$

$$\frac{P - \overline{P}}{\sigma} = t \text{ is set,}$$

$$= \frac{1}{\sqrt{2\pi\sigma}} \int_{-\infty}^{S-\overline{P}} (\sigma t - \overline{P}) e^{-\frac{1}{2}t^2} \sigma dt$$

$$= \frac{\sigma}{\sqrt{2\pi}} \int_{-\infty}^{S-\overline{P}} t e^{-\frac{1}{2}t^2} dt - \frac{\overline{P}}{\sqrt{2\pi}} \int_{-\infty}^{S-\overline{P}} e^{-\frac{1}{2}t^2} dt \dots 3$$

If  $\frac{t^2}{2} = \theta$  is set, the first term of formula ③ is

$$\frac{d}{\sqrt{2\pi}} \int_{-\infty}^{S-\overline{P}} t \cdot e^{-\frac{1}{2}t^2} dt = \frac{d}{\sqrt{2\pi}} \int_{-\infty}^{\left(\frac{S-\overline{P}}{\sigma}\right)^2/2} e^{-t} d\theta$$

$$= \frac{d}{\sqrt{2\pi}} \left[ -e^{-t} \right]_{-\infty}^{\left(\frac{S-\overline{P}}{\sigma}\right)^2/2}$$

$$= \frac{-d}{\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{S-\overline{P}}{\sigma}\right)}$$

$$= \frac{d}{\sqrt{2\pi}} \left[ -e^{-t} \right]_{-\infty}^{\left(\frac{S-\overline{P}}{\sigma}\right)^2/2}$$

If  $\frac{P-\overline{P}}{\sigma}=t$  is assumed,

and the second term of formula 2 is

$$\frac{1}{\sqrt{2\pi\sigma}} \int_{s}^{\infty} e^{-\frac{1}{2}\left(\frac{P-\overline{P}}{\sigma}\right)^{s}} dp$$

$$= \frac{1}{\sqrt{2\pi}} \int_{\frac{S-\overline{P}}{\sigma}}^{\infty} e^{-\frac{t^{2}}{2}} dt$$

$$= 1 - \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{S-\overline{P}} e^{-\frac{1}{2}} dt$$
(5)

Summing up formula 2 by formula 3, 4, and 5,

$$\frac{\overline{P}'}{S} = \frac{-\sigma}{S} \cdot \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2} \left(\frac{S-\overline{P}}{\sigma}\right)^2} + 1 - \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\frac{S-\overline{P}}{\sigma}} e^{-\frac{t^2}{2}} dt \left(1 - \frac{\overline{P}}{S}\right) \quad \dots \quad 6$$

As  $\frac{S-\overline{P}-\frac{1}{P/S}-1}{\sigma/P}$ , the relation between P'/S and P/S is acquired by giving values parametrically to coefficient of variation,  $\sigma/P$ . That is to say, values of P'/S from formula  $\circ$  is acquired by giving some values orderly to P/S.

P'/S means load factor, and P/S means a ratio of an average of the number of actually carried passengers to the number of supplied seats. In case when this ratio is

more than one, it is meant that passenger traffic demand is more than the number of supplied seats.

But it must be noticed that the Study Team assumes that the distribution of potential traffic demand is logarithmic normal distribution, because the figure of potential demand could not be actually negative.

The principle way of thinking for methodology to estimate the potential traffic demand is cited from "Economics of Aviation" by Prof. Ota of Waseda Univercity in Japan.

Attachment 8-3 OD Table of Air Passengers Between Key Airports (Air Niugini: 1989)

(Unit: Persons)	15 TARI	3,377			35																1,203					4.615
(Unit:	14 KAV.	2,773	186	5,273			427	330	246		172								616							10,023
	13 DAR	2,320											140													2,460
	12 TAB.	1,156												183										•		1,339
	GUR.	8,886			-			2																		8,886
	10 HOS.	5,401	2,047	4,072		9.		635			* .		٠		279			*				:		À		12,436
	9 POP.	12,153																						4 5	.*	12,153
	8 WEW.	10,283	3,666	68	1,255	47	4,245	244							263		1,537		502				:	-		22,131
	7 KIE.	18,145	1,141	9,430		٠	<b>v</b> 0				592				96				75							29,484
	6 MADA.	12,461	3,002	684	1,105	1,328		72	4,282				proof		556				1,302							24,793
	SORO.	21,826	1,312		387		1,651		28			387	*.		7			14					*.			25,642
	MT. H.	28,944	2,440			294	211		1,762				129			32	297	0		end ·	18				85	34,203
	3 RAB.	22,439	7,493		• .	•	382	10,714	242		4,769				5,416				2,649							54,104
	2 LAE	57,185		7.185	2,233	1,255	3,178	1,028	3,838		1,923				695				1,145							79,665
	PORT. M.		56,018	24,395	27,166	21,571	12,959	21,980	9,766	12,005	4,900	7,857	932	2,369	2,319	2,850	1,466	4,799	3,278	33	3,731	1,059			2,426	223,978
	Destination Origins	PORT MORESBY	NADZAB (LAE)	RABAUL	MT. HAGEN	GOROKA	MADANG	KIETA	WEWAK	POPONDETTA	HOSKINS	GURNEY	TABUBIL	DARU	KAVIENG	TARI	VANTWO	CHIMBU (KUNDIAWA)	MANUS	KIUNGA	MENDI	MISIWA	LOUSUIA	BUKA	WAPENAMANDA	Total
4	/ ර	-	7	ω ·	4	, th	vo ·	7	60	\$	10	64 11	23	13	77	15	16	17	82	10	20	21	22	23	24	

OD Table of Air Passengers Between Key Airports (Air Niugini: 1989)

		***************************************							Ē	(Unit: Persons)
Destination Origins	16 VAN.	17 CHI.	18 MAN.	19 KTU.	20 MEN	21 MIS.	22 LOU.	23 BUK.	24 WAPE.	Total
1 PORT MORESBY	1,655	4,344	3,629	102	3,495	743			2,551	223,868
NADZAB (LAE)			1,152				i			789,459
RABAUL			1,912							53,040
MT. HAGEN	406								45	32,632
GOROKA									39	24,524
MADANG			1,123							24,181
KIETA			377	٠						35,380
WEWAK	1,455		456	25						22,130
POPONDETTA	٠							•		12,005
HOSKINS										12,356
GURNEY			•			586				8,830
TABUBIL					,					1,202
DARU										2,560
KAVIENG			582	<b>60</b>						10,213
TARI					1,512					4,394
VANTWO			-				*			3,300
CHIMBU (KUNDIAWA)		36 								4,813
18 MANUS		٠.								6,567
KIUNGA	1	1. 1.				<i>i</i>				35
MENDI						48] -		57	:	4,952
MISIWA										1,059
LOUSUIA				:		- 14			1 4	0
BUKA										0
24 WAPENAMANDA					44					2,555
Total	3,516	4,344	9,231	135	5,051	1,329	0	0	2,635	572,054

Source: Policy, Planning & Programmes Branch of DCA in PNG

OD Table of Air Passengers Between Key Airports (Talair: 1989)

I/																
Origins	Destination gins	PORT. M. LAE	LAE	3 RAB.	AT. H.	SORO.	6 MADA.	KIE.	WEW.	ο <mark>δ</mark>	10 HOS.	GUR.	12 TAB	13 DAR.	14 KAV.	15 TARI
	PORT MORESBY		6,212	983	1,757	į	493	110	266	1,811	833	3,064	2,268	4,436	17	1,043
7	NADZAB (LAE)	5,407		1,540	4,068	3,259	1,390	37	1,225	1,696	2,009	349	120		4	Pred Pred
(E)	RABAUL	1,391	1,711				'n	2		7	1,610				736	٠.,
- <del></del>	MT. HAGEN	3,154	4,043	9		2,754	2,321		2,259	15			2,265		٠	1,080
(V)	GOROKA	4,594	3,418		2,797		1,765		869	11	1		S			
· •	MADANG	311	1,257	79	2,688	1,567			295		00	i.	229		15	1.9
7	KIETA	82	61	12		15	:		2							
. 00	WEWAK	238	1,129		2,156	832	476		-				413			
Φ.	POPONDETTA	2,050	2,254									348			•	: .
. 0	HOSKINS	879	1,741	1,630						62		7				
٠, 🛶	GURNEY	3,651	399				-			345	S					:
7	TABUBIL	2,237	8	æ	2,147	17	182		422							98
ť'n	DARU	4,117						٠					20			
4	KAVIENG			718			3					12				
V)	TARI	913	•		1,358	Ŋ	24		17				726	16		٠
9	VANIWO				192	24	7		1,391				42			
7	CHIMBU (KUNDIAWA)	944				819	408									
∞ ∞	MANUS	23	٠.	4			15				9					
19	KIUNGA	2,784	58		720		47		8				1,394	1,329		36
23	MENDI	1,213	. <del>,</del>	6	439	. 21	ĸ		;				4	c.		80
21	MISIWA	1,473										1,067				
22	LOUSUIA	2,031		-								658				
23	BUKA	56		1,500		•						:				
24	WAPENAMANDA	165			221		i.	٠.	16				507			23
25	NISSAN I.			:		:										
	Total	37 683	22.383 6.484	4 484	10 544	12610	7 1 4 1	-	. 420.2	0,00	•	101	600	700	ę t	7.00

OD Table of Air Passengers Between Key Airports (Tal air: 1989)

								,			മ	(Unit: Persons)
/ රි	Destination Origins	16 VAN.	17 CHI.	18 MAN.	19 KIÜ.	20 MEN.	21 MIS.	22 LOU.	23 BUKA	24 WAP.	25 NIS.	Torai
1	PORT MORESBY		1,514	70	2,715	1,509	1,457	2,123	3	215		36,234
7	NADZAB (LAE)			13	49	22						21,201
ന	RABAUL			13					1,222		6	6,799
4	MT. HAGEN	8	m		620	344	٠			144		19,098
νn	GOROKA	32	372		9							13,698
9	MADANG		460	120	4							7,409
7	KIETA		4				15	4		4		221
00	WEWAK	1,346	Φ		116					65		6,780
6	POPONDETTA		`vo					4				4,661
10	HOSKINS											4,319
11	GURNEY						800	797				5,997
12	TABUBIL	100			1,836	78				505		8,237
13	DARU				1,311							5,463
14	KAVIENG			m								738
15	TARI				64	96				т		3,160
16	VANTWO				15					7		1,673
17	CHIWMBU (KUNDIAWA)	~										2,172
18	MANUS											48
19	KIUNGA	4				4				4		6,464
ន	MENDI			ব	m					14		1,804
21	MISIWA							4				2,544
22	LOUSUIA											2,689
23	BUKA										•	1,526
24	WAPENAMANDA								-			932
23	MISSAN I.											0
	Total	1,572	2,367	223	6,719	2,005	2,272	2,932	1,225	956	6	163,867

Source: Policy, Planning & Programmes Branch of DCA in PNG

Attachment 8-4 OD Matrix of Air Passengers for Key Airports (1989)

	Destination	7- <b>1</b>	2	3	4	5	6	7
Origi		•		* *				
1.	PORT.M	. •	64,973	26,113	31,222	24,397	14,532	20,780
2.	LAE	64,281	0	13,036	8,592	5,765	6,374	1,735
3.	RABAUL	28,134	12,326	.0	0	0	1,039	14,524
4.	MT. HAGEN	31,675	8,338	9.	0	3,956	4,959	0
5.	GOROKA	25,623	5,831	0	3,817	O.	3,221	0
6.	MADANG	15,192	6,440	724	4,172	4.436	. 0	8
7.	КІЕТА	20,840	1,312	14,039	0	17	95	0
8.	WEWAK	9,259	5,861	310	4,583	995	6,122	0
9.	POPON.	16,520	3,360	0 -	.0	0	0	0
10.	HOSKINS	5,779	4,661	8,821	0	0	.0	832
11.	GURNEY	14,456	635	0	0 .	0	.0	0
12.	TABUBIL	5,501	216	7	4,898	35	427	0
13.	DARU	8,978	0	0	0	0	0	0
14.	KAVIENG	1,907	731	7,019	0	7	646	112
15.	TARI	4,447	4.0	0	2,060	7	39	0
16.	VANIMO	2,874	0	0	1,185	56	18	0
17.	CHIMBU	7,803	0	0	2	1,360	758	0
18.	MANUS	2,709	1,202	3,034	0	0	1,518	88
19.	KIUNGA	2,843	74	0:-	916	ō	65	0
20.		5,790	1	14	673	30	5	0
21.	MISIMA	2,215	0	0	0	0	0	0
22.	LOUSUIA	1,892	0	0:	. 0	0	Ŏ.	Õ
23,	BUKA	0	0	Ŏ	ŏ	Õ	Ŏ	Ô
24.	and the second s		115,961		62,120	-	40,819	38,078
	101,10	_,0,	110,201	.0,14,	92,129	(1,001	,,	20,0,0
		-						
0	Destination	8	9	10	11	12	13	14
Origi	n							1 1 1
11.	n PORT.M	9,519	17,063	6,282	14,984	5,879	9,006	2,398
1. 2.	n PORT.M LAE	9,519 5,745	17,063 2,677	6,282 5,306	14,984 575	5,879 263	9,006	2,398 213
1. 2. 3.	n PORT.M LAE RABAUL	9,519 5,745 109	17,063 2,677 3	6,282 5,306 7,728	14,984 575 0	5,879 263 0	9,006 0 0	2,398 213 7,025
1. 2. 3. 4.	PORT.M LAE RABAUL MT, HAGEN	9,519 5,745 109 4,117	17,063 2,677 3 24	6,282 5,306 7,728	14,984 575 0	5,879 263 0 4,936	9,006 0 0	2,398 213 7,025
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	9,519 5,745 109 4,117 821	17,063 2,677 3 24 16	6,282 5,306 7,728 0	14,984 575 0 0	5,879 263 0 4,936 10	9,006 0 0 0	2,398 213 7,025 0
1. 2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	9,519 5,745 109 4,117 821 6,158	17,063 2,677 3 24 16 0	6,282 5,306 7,728 0 0	14,984 575 0 0 0	5,879 263 0 4,936 10 538	9,006 0 0 0 0	2,398 213 7,025 0 0 542
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	9,519 5,745 109 4,117 821 6,158 285	17,063 2,677 3 24 16 0	6,282 5,306 7,728 0 0 11 752	14,984 575 0 0 0 0	5,879 263 0 4,936 10 538	9,006 0 0 0 0	2,398 213 7,025 0 0 542 334
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	9,519 5,745 109 4,117 821 6,158 285	17,063 2,677 3 24 16 0 0	6,282 5,306 7,728 0 0 11 752	14,984 575 0 0 0 0 0	5,879 263 0 4,936 10 538 0 802	9,006 0 0 0 0 0 0	2,398 213 7,025 0 0 542 334 244
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	9,519 5,745 109 4,117 821 6,158 285 0	17,063 2,677 3 24 16 0 0	6,282 5,306 7,728 0 0 11 752 0	14,984 575 0 0 0 0 0 0 0	5,879 263 0 4,936 10 538 0 802	9,006 0 0 0 0 0 0	2,398 213 7,025 0 0 542 334 244
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	9,519 5,745 109 4,117 821 6,158 285 0 0	17,063 2,677 3 24 16 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0	14,984 575 0 0 0 0 0 0 629	5,879 263 0 4,936 10 538 0 802 0	9,006 0 0 0 0 0 0	2,398 213 7,025 0 0 542 334 244 0 184
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	9,519 5,745 109 4,117 821 6,158 285 0 0	17,063 2,677 3 24 16 0 0 0 0 93	6,282 5,306 7,728 0 0 11 752 0 0	14,984 575 0 0 0 0 0 629 11 0	5,879 263 0 4,936 10 538 0 802 0	9,006 0 0 0 0 0 0 0 0	2,398 213 7,025 0 0 542 334 244 0 184
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	9,519 5,745 109 4,117 821 6,158 285 0 0 0	17,063 2,677 3 24 16 0 0 0 93 647	6,282 5,306 7,728 0 0 11 752 0 0 0	14,984 575 0 0 0 0 0 0 629 11 0	5,879 263 0 4,936 10 538 0 802 0 0	9,006 0 0 0 0 0 0 0 0 0	2,398 213 7,025 0 0 542 334 244 0 184 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810	17,063 2,677 3 24 16 0 0 0 93 647 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8	14,984 575 0 0 0 0 0 0 629 11 0	5,879 263 0 4,936 10 538 0 802 0 0 0	9,006 0 0 0 0 0 0 0 0 0 0 0 381	2,398 213 7,025 0 0 542 334 244 0 184 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	9,519 5,745 109 4,117 821 6,158 285 0 0 0 0 810 0	17,063 2,677 3 24 16 0 0 0 93 647 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0	14,984 575 0 0 0 0 0 0 629 11 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 564	9,006 0 0 0 0 0 0 0 0 0 381 0	2,398 213 7,025 0 0 542 334 244 0 184 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	9,519 5,745 109 4,117 821 6,158 285 0 0 0 244 22	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0 289	14,984 575 0 0 0 0 0 0 629 11 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 564 0	9,006 0 0 0 0 0 0 0 0 0 381 0 0	2,398 213 7,025 0 0 542 334 244 0 184 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 289 0	14,984 575 0 0 0 0 0 629 11 0 0 15 0	5,879 263 0 4,936 10 538 0 802 0 0 0 0 564 0 1,731	9,006 0 0 0 0 0 0 0 0 0 381 0 0	2,398 213 7,025 0 0 542 334 244 0 184 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0 289 0	14,984 575 0 0 0 0 0 629 11 0 0 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 0 564 0 1,731 153	9,006 0 0 0 0 0 0 0 0 0 0 381 0 0 0	2,398 213 7,025 0 0 542 334 244 0 184 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0 465	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0 289 0 0	14,984 575 0 0 0 0 0 0 629 11 0 0 15 0 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 0 564 0 1,731 153 0	9,006 0 0 0 0 0 0 0 0 0 0 381 0 0 0	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0 465 95	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 289 0 0 0	14,984 575 0 0 0 0 0 0 629 11 0 0 15 0 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 564 0 1,731 153 0 0 2,887	9,006 0 0 0 0 0 0 0 0 0 381 0 0 0 0 2,183	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0 465 95	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 289 0 0 6	14,984 575 0 0 0 0 0 0 629 11 0 0 15 0 0 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 1,731 153 0 2,887 34	9,006 0 0 0 0 0 0 0 0 0 381 0 0 0 0 2,183	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0 0 0 542 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0 465 95	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0 289 0 0 0	14,984 575 0 0 0 0 0 629 11 0 0 15 0 0 1,460	5,879 263 0 4,936 10 538 0 802 0 0 0 1,731 153 0 2,887 34	9,006 0 0 0 0 0 0 0 0 0 381 0 0 0 2,183	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0 0 0 0 542 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0 465 95	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 289 0 0 6	14,984 575 0 0 0 0 0 0 629 11 0 0 15 0 0 0 1,460 955	5,879 263 0 4,936 10 538 0 802 0 0 0 1,731 153 0 2,887 34	9,006 0 0 0 0 0 0 0 0 381 0 0 0 2,183	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0 0 0 542 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA BUKA	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 810 0 244 22 6,330 0 465 95 0 0 0	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0 289 0 0 0 0	14,984 575 0 0 0 0 0 629 11 0 0 0 15 0 0 0 0 15 0 0 0 0 0 0 15 0 0 0 0 0 0 0 0 0 0 0 0 0	5,879 263 0 4,936 10 538 0 802 0 0 0 564 0 1,731 153 0 0 2,887 34	9,006 0 0 0 0 0 0 0 0 381 0 0 0 2,183 6 0	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0 0 0 0 542 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	9,519 5,745 109 4,117 821 6,158 285 0 0 0 810 0 244 22 6,330 0 465 95 0 0 0	17,063 2,677 3 24 16 0 0 0 93 647 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,282 5,306 7,728 0 0 11 752 0 0 0 8 0 0 289 0 0 0 0	14,984 575 0 0 0 0 0 0 629 11 0 0 15 0 0 0 1,460 955	5,879 263 0 4,936 10 538 0 802 0 0 0 564 0 1,731 153 0 0 2,887 34	9,006 0 0 0 0 0 0 0 0 381 0 0 0 2,183	2,398 213 7,025 0 0 542 334 244 0 184 0 0 0 0 0 0 542 0 0

### OD Matrix of Air Passengers for Key Airports (1989)

	Destination	15	16	17	18	19	1 20 m	21
Origin								
1.	PORT.M	5,239	3,103	8,334	3,160	2,556	5,553	1,843
2.	LAE	17	0 _1	0	•		34	0.
3,	RABAUL	0	0	0	2,240	0	0	0
4.	MT. HAGEN	1,700	1,178	5	0	729	493	0
5.	GOROKA	0	73	642	0	7	0	544 B
6.	MADANG	111	0.	910		59	0	0
7.	KIETA	0	0	7	379	0	0	15
:8.	WEWAK	0	5,932	15	450	147	0	0
9.	POPON.	0	0	10	0.5	0	. 0	0
10.	HOSKINS	0	0	0	0	. 0	0	0
11.	GURNEY	0	,0,,	0	0 :-	0	0	1,821
12.	TABUBIL	1,600	356	0	0	3,492	65	0
13.	DARU	30.	0	0	0.	2,035	0	0
14.	KAVIENG	0	0 -	0	512	0	0	0
15.	TARI	0	. 0	0	0	3	2,586	5 KI 0
16.	VANIMO	0	0	0	0	. 32	0	0
17.	CHIMBU	0	0:	0	0	. 0	0	J 10 0
18.	MANUS	0	0 .	0	Ŏ	0	: 0	0
19.	KIUNGA	53	ğ	Ŏ	Ö	· · · · · · · · · · · · · · · · · · ·	6	0
20.	MENDI	2,176	Û.	0	5	4	0	0
21.	MISIMA	0	0	ő	0	Ó	Ö	Ŏ
22.	LOUSUIA	0	0· :	0	•	0	0	Ŏ
23.	BUKA	0	0	0	0	0	0	
23. 24.	TOTAL	10,925	10,650	9,922			8,738	
24.	TOTAL	10,723	10,030	7,722	9,505	7,124	0,730	3,075
							· · ·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
o : :	Destination	22	23	24	4	,	1 - 4 To See 4 1 - 1 To	
Origin		1 7700		070 710				
1.	PORT.M	1,783	0	278,718				
2.	LAE	0	0	115,961		7.1		
3.	RABAUL	0	0	73,127				
4.	MT. HAGEN	0	0.	62,118	-	13.1		
5.	GOROKA	0	0	41,061				
6.	MADANG	0	. 0,	40,819				
7.	KIETA	4	0	38,078		•		
8.	WEWAK	0	0	34,719				
9.	POPON.	5	0	20,524				
10.	HOSKINS	0	0	20,382				
11.	GURNEY	1,051	0 -	18,619				
12.	TABUBIL	0	0.	17,787	:	er se er		
13.	DARU	. 0	0 .	11,606	1.			
14.	KAVIENG	0	0 -	11,484	1			
15.	TARI	0.	0,	10,926				
16.	VANIMO	0	0	10,650	· ·			
17.	CHIMBU	0	0	9,922		1 .		
18.	MANUS	. 0	0.	9,565		* **		
19.	KIUNGA	0	0.	9,121				
20.	MENDI	0	0	8,738				
21.	MISIMA	4	0	3,679				
~	4 - H48/4444 B	- •	•	2,017	•			

2,847

850,451

0

LOUSUIA

BUKA

**TOTAL** 

22. 23.

24.

0

0

2.847

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0

Attachment 8-5 OD Matrix of Air Passengers for Key Airports (1995)

(With	out)		e e		U		•	*
(	Destination	on 1	2	3	4	5	6	7
Origin		-		-				
1.	PORT.M	0	77,524	31,115	44,340	30,044	15,052	23,480
2.	LAE	76,784	0	17,406	13,648	7,953	7,411	2,198
3.	RABAUL	33,688	16,520	0	0	0		18,454
4.	MT. HAGEN	45,198	13,292	14	0	6,494	6,917	0
5.	GOROKA	31,783	8,093	0	6,281	0	5,101	0
6.	MADANG	15,832	7,524		5,,826	5,354	0	. 9
7	KIETA	23,585	1,663	17,778	0	22	104	.0
8.	WEWAK	8,998	6,390	338	5,985	1,121	5,769	
9.	POPON.	19,681	4,481	0	0	0	0	0
10.	HOSKINS	6,527	5,897	11,146	0	0	0	997
11.	and the second s	19,145	940	0	0 :	0.	0	0
12.	TABUBIL	5,414	238	8	6,462	40	408	0
13.	DARU	12,195	0	0	0	0	0	· · · · · · · · · · · · · · · · · · ·
14.	KAVIENG	2,517	1,079	10,333	0	11	833	157
15.	TARI	8,077	0	0	4,846	15	70	0
16.	VANIMO	4,072	0	0	2,213	92	25	0
17.	CHIMBU	11,176	0	0	3	2,241	1,061	0
18.	MANUS	3,777	1,873	4,716	Ō	0.	2,068	130
19.	KIUNGA	3,114	91	0	1,340	0	70	0
20.	MENDI	6,855	2	19	1,055	40	6	0
21.	MISIMA	3,773	0	0	0	0	. 0	0
22.	LOUSUIA	2,094	ō	0	Ō	0	0	0
23.	BUKA	2	0	248	0	0	O	0
24.	TOTAL	344,289	145,606	93,965	91,997	53,428	46,106	45,424
1			ŕ			•		
	Destination	on 8	9	10	11	12	13	14
Origir	and the second of the second o	on 8	9	10	11	12	13. <sup>-</sup>	14
Origir 1.	and the second of the second o	on 8 9,242	20,392	;	11 20,013	12 5,779	13 12,254	14 3,167
	17			;				3,167 315
1.	PORT.M	9,242 6,265 119	20,392	7,093	20,013	5,779 291 0	12,254	3,167
1. 2.	PORT.M LAE	9,242 6,265	20,392 3,585	7,093 6,718	20,013 844	5,779 291 0 6,538	12,254 0	3,167 315 10,397 0
1. 2. 3.	PORT.M LAE RABAUL	9,242 6,265 119	20,392 3,585 4	7,093 6,718 9,809	20,013 844 0	5,779 291 0 6,538 12	12,254 0 0	3,167 315 10,397 0
1. 2. 3. 4.	PORT.M LAE RABAUL MT. HAGEN	9,242 6,265 119 5,397	20,392 3,585 4 38	7,093 6,718 9,809 0	20,013 844 0 0	5,779 291 0 6,538	12,254 0 0 0	3,167 315 10,397 0 0 704
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	9,242 6,265 119 5,397 931	20,392 3,585 4 38 23	7,093 6,718 9,809 0	20,013 844 0 0	5,779 291 0 6,538 12	12,254 0 0 0 0	3,167 315 10,397 0
1. 2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	9,242 6,265 119 5,397 931 5,834	20,392 3,585 4 38 23 0	7,093 6,718 9,809 0 0	20,013 844 0 0 0	5,779 291 0 6,538 12 517	12,254 0 0 0 0	3,167 315 10,397 0 0 704
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	9,242 6,265 119 5,397 931 5,834 294	20,392 3,585 4 38 23 0	7,093 6,718 9,809 0 0 13	20,013 844 0 0 0 0	5,779 291 0 6,538 12 517	12,254 0 0 0 0 0	3,167 315 10,397 0 0 704 469 296
1. 2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT, HAGEN GOROKA MADANG KIETA WEWAK	9,242 6,265 119 5,397 931 5,834 294	20,392 3,585 4 38 23 0 0	7,093 6,718 9,809 0 0 13 903	20,013 844 0 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718	12,254 0 0 0 0 0 0	3,167 315 10,397 0 0 704 469 296
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS	9,242 6,265 119 5,397 931 5,834 294 0	20,392 3,585 4 38 23 0 0	7,093 6,718 9,809 0 0 13 903 0	20,013 844 0 0 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718	12,254 0 0 0 0 0 0 0	3,167 315 10,397 0 0 704 469 296
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	9,242 6,265 119 5,397 931 5,834 294 0	20,392 3,585 4 38 23 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0	20,013 844 0 0 0 0 0 0 0 938 15	5,779 291 0 6,538 12 517 0 718 0	12,254 0 0 0 0 0 0 0 0	3,167 315 10,397 0 704 469 296 0 258
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	9,242 6,265 119 5,397 931 5,834 294 0	20,392 3,585 4 38 23 0 0 0 0 118 961	7,093 6,718 9,809 0 0 13 903 0 0	20,013 844 0 0 0 0 0 0 0 938 15	5,779 291 0 6,538 12 517 0 718 0	12,254 0 0 0 0 0 0 0 0	3,167 315 10,397 0 704 469 296 0 258
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT, HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725	20,392 3,585 4 38 23 0 0 0 118 961	7,093 6,718 9,809 0 0 13 903 0 0 0	20,013 844 0 0 0 0 0 0 0 938 15 0	5,779 291 0 6,538 12 517 0 718 0 0	12,254 0 0 0 0 0 0 0 0 0 0 0	3,167 315 10,397 0 704 469 296 0 258 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL	9,242 6,265 119 5,397 931 5,834 294 0 0	20,392 3,585 4 38 23 0 0 0 0 118 961 0	7,093 6,718 9,809 0 0 13 903 0 0 0	20,013 844 0 0 0 0 0 0 938 15 0	5,779 291 0 6,538 12 517 0 718 0 0 0	12,254 0 0 0 0 0 0 0 0 0 0 480	3,167 315 10,397 0 0 704 469 296 0 258 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0	20,392 3,585 4 38 23 0 0 0 0 118 961 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 0	20,013 844 0 0 0 0 0 0 0 938 15 0 0	5,779 291 0 6,538 12 517 0 718 0 0 0 709	12,254 0 0 0 0 0 0 0 0 0 480 0	3,167 315 10,397 0 0 704 469 296 0 258 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 404	20,013 844 0 0 0 0 0 0 938 15 0 0 0 25	5,779 291 0 6,538 12 517 0 718 0 0 0 709 0 2,935	12,254 0 0 0 0 0 0 0 0 0 480 0	3,167 315 10,397 0 704 469 296 0 258 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 404 0	20,013 844 0 0 0 0 0 0 938 15 0 0 0 25	5,779 291 0 6,538 12 517 0 718 0 0 0 709 0 2,935 202	12,254 0 0 0 0 0 0 0 0 480 0 69 0	3,167 315 10,397 0 704 469 296 0 258 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 404 0	20,013 844 0 0 0 0 0 0 938 15 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718 0 0 0 709 0 2,935 202 0 0 2,908	12,254 0 0 0 0 0 0 0 0 480 0 0 0 0 3,057	3,167 315 10,397 0 704 469 296 0 258 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 404 0	20,013 844 0 0 0 0 0 0 938 15 0 0 0 0 0 0 0 0 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718 0 0 709 0 2,935 202 0 0	12,254 0 0 0 0 0 0 0 0 480 0 0 0 0 3,057	3,167 315 10,397 0 704 469 296 0 258 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225 0 595	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 404 0	20,013 844 0 0 0 0 0 0 938 15 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718 0 0 0 709 0 2,935 202 0 0 2,908	12,254 0 0 0 0 0 0 0 0 480 0 0 69 0 0 3,057	3,167 315 10,397 0 704 469 296 0 258 0 0 0 0 0 927
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225 0 595 95	20,392 3,585 4 38 23 0 0 0 118 961 0 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 11 0 404 0 0 9	20,013 844 0 0 0 0 0 0 938 15 0 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718 0 0 0 709 0 2,935 202 0 0 2,908 37	12,254 0 0 0 0 0 0 0 0 480 0 69 0 0 3,057	3,167 315 10,397 0 704 469 296 0 258 0 0 0 0 0 927 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225 0 595 95	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 11 0 404 0 0 9 0 0 0	20,013 844 0 0 0 0 0 0 938 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718 0 0 709 0 2,935 202 0 2,908 37 0	12,254 0 0 0 0 0 0 0 0 480 0 0 69 0 0 3,057	3,167 315 10,397 0 704 469 296 0 258 0 0 0 0 0 927 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	9,242 6,265 119 5,397 931 5,834 294 0 0 0 725 0 295 38 8,225 0 595 95 0	20,392 3,585 4 38 23 0 0 0 0 118 961 0 0 0 0 0	7,093 6,718 9,809 0 0 13 903 0 0 0 11 0 404 0 0 0	20,013 844 0 0 0 0 0 0 938 15 0 0 0 0 0 0 0 0 0 0 0 0 0	5,779 291 0 6,538 12 517 0 718 0 0 709 0 2,935 202 0 2,908 37 0 0	12,254 0 0 0 0 0 0 0 0 480 0 69 0 0 3,057	3,167 315 10,397 0 704 469 296 0 258 0 0 0 0 0 927 0

OD Matrix of Air Passengers for Key Airports (1995)

		O #		actigota tor		. •	
(Witl						10	00 01
	Destination	15	16	17	18	19	20 21
Origin	1				4 1		
1.	PORT.M	9,576	4,383	12,055	4.425	2,852	6,452 3,088
2.	LAE	34	0	0	2,035	72	45 0
3.	RABAUL	0	0	0	3,513	0	0
	and the second s		2,203	10	0	1,091	763 0
4.	MT. HAGEN	4,041			0	9	0.00
. 5.	GOROKA	0	119	1,076			
6.	MADANG	201	0	1,293	2,091	64	0 10 10 10 10
7.	KIETA	0	0 :	10	565	0	0 26
8.	WEWAK	0	7,691	19	580	149	0 0
9.	POPON.	0	0	16	0	. 0	0 4 10 4 0
10.	HOSKINS	0	.0	0	0	0 1	0 11 0
11.	GURNEY	0.	. 0	0	0	0	0 3,726
12.	TABUBIL	2,733	466	: 0:	0 :	3,601	70
13.	DARU	68	0	ŏ	0	2,897	0 3.1 1 1 0
			0	0	880	0	0
14.	KAVIENG	0				5	5,048 0
15.	TARI	0	0	0	0		
16.	VANIMO	0	0	0	0.	48	0
17.	CHIMBU	0	0	O	0	0	0
18.	MANUS	0	0	0	0	0	0 0
19.	KIUNGA	99	13	0	0	0	7
20.	MENDI	4,350	0	0	8	5	0 15 0
21.	MISIMA	0	0	0	. 0	0	0
22.	LOUSUIA	ŏ	ő	ő	0	0	0
23.	BUKA	0	0.	0	Ŏ	Ŏ	0 0
		21,102	14,877		14,097	<del>-</del>	12,385 6,840
24.	TOTAL	21,102	14,077	14,401	14,027	10,777	12,505
		•					
			20	0.4			
	Destination	22	23	24	* * * * * * * * * * * * * * * * * * *		
Origir		22	23	24	* *		en de la companya de La companya de la co
•		22 1,962	23	24 344,289			nation of the second of the se
1.	n PORT.M			344,289			
1. 2.	PORT.M LAE	1,962	0 · 0 · 0 · 0 · 0 · 0 · 0 · 0 · 0 · 0 ·	344,289 145,606			
1. 2. 3.	PORT.M LAE RABAUL	1,962 0 0	0 0 250	344,289 145,606 93,965			
1. 2. 3. 4.	PORT.M LAE RABAUL MT. HAGEN	1,962 0 0	0 0 250	344,289 145,606 93,965 91,997			
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	1,962 0 0 0	0 0 0 250 0	344,289 145,606 93,965 91,997 53,427			
1. 2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	1,962 0 0 0 0	0 0 250 0 0	344,289 145,606 93,965 91,997 53,427 46,106			
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	1,962 0 0 0 0 0 0 5	0 0 250 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424			
1. 2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	1,962 0 0 0 0 0 0 5	0 0 250 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055			
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON	1,962 0 0 0 0 0 0 5 0	0 0 250 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122			
1. 2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	1,962 0 0 0 0 0 5 0 6	0 0 250 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959			
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON	1,962 0 0 0 0 0 0 5 0	0 0 250 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	1,962 0 0 0 0 0 5 0 6 0	0 0 250 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON HOSKINS GURNEY TABUBIL	1,962 0 0 0 0 0 5 0 6 0 1,441	0 0 250 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	1,962 0 0 0 0 5 0 6 0 1,441	0 0 250 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	1,962 0 0 0 0 0 5 0 6 0 1,441 0	0 0 250 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533			の数は、 の数は、 では、またりました。 では、数に対し、また。 では、数に対し、また。 では、数によった。 では、数によった。 では、数によった。 では、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、また。また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。また。 は、は、また。。 は、は、また。。 は、。 は、また。 は
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0	0 0 250 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482			の数のの の数のの では、またりので、 では、ないで、またいで、 をはないが、これで、またいで、 をはないが、これで、またいで、 は、ないで、またいで、またいで、またいで、またいで、またいで、またいで、またいで、また
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482 14,097			(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482 14,097 10,794			の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して の対して のがし のがし のがし のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがして のがし のがし のがし のがし のがし のがし のがし のがし
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482 14,097 10,794 12,385			の数のの ののでは、 ののでは、 ののでは、 をはないが、 ののでは、
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482 14,097 10,794			の成立と の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象の対象の の対象が対象の の対象が対象の の対象が対象の の対象が対象の が対象が対象の が対象が対象が が対象が対象が が対象が対象が が対象がある。 ががある。 がしる。 ががある。 がし。 がしる。 がしる。 がし。 がしる。 がし。 がしる。 がしる。 がし。 がしる。 がしる。
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482 14,097 10,794 12,385 6,839			の成立と の対象に対象に対象に対象に対象に対象を対象に対象に対象に対象に対象に対象に対象に対象に対象に対象に対象に対象に対象に対
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1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	1,962 0 0 0 0 0 5 0 6 0 1,441 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	344,289 145,606 93,965 91,997 53,427 46,106 45,424 38,055 25,122 24,959 26,224 20,645 15,870 16,533 21,102 14,877 14,482 14,097 10,794 12,385 6,839			の数によります。 「おおけった」 「おおけった」 「おおけった」 「おおけった」 「おおから」 「おもなら」 「おもなら」 「おもなら」 「おもなら」 「おもなら」 「おもなら」 「おもならっと。 「おもなら」 「おもなら。 「もなら。 「もなら。 「もなら。 「もなら。 「もなら。 「もなら。 「もなら。 「もなら。 「もなら。 「もならっと。 「もならっと。 「もならっと。 「もならっと。 「もならっと。 「もならっと。 「もならっと。 「もなっとっ

OD Matrix of Air Passengers for Key Airports (2000)

(Wit	hout)	OD MARTIN	71 1 111 1 (IOO)	ongord for i	itoy zinpoi	(2000)		
	Destinati	ion 1	2	3	4	5	6	7
Origi	n							
1.	PORT.M	0	98,605	39,720	52,390	38,976	17,324	28,772
2.	LAE	97,752	0	23,848	20,553	11,069	9,181	2,894
3.	RABAUL	43,144	22,684	0	0	. 0	1,512	24,455
4.	MT. HAGEN	63,797	20,061	21	0	9,962	9,571	0
5.	GOROKA	41,441	11,309	0	9,652	. 0	6,484	0
6.	MADANG	18,302	9,353	1,056	8,069	6,799	0	. 11
7.	KIETA	28,934	2,190	23,511	0	30	124	.0
8.	WEWAK	9,873	7,551	401	7,908	1,355	6,116	0
9.	POPON.	25,023	6,111	0	, 0	0	0	0
10.	HOSKINS	8,014	7,771	14,744	0	0	0	1,266
11.	GURNEY	25,945	1,364	0	0	0	0	0
12.	TABUBIL	6,148	291	9	8,791	50	449	0
13.	DARÚ	17,137	0	0	0	0	0	0
14.	KAVIENG	3,389	1,555	14,928	0	16	1,099	219
15.	TARI	12,540	0	0	8,610	25	107	0
16.	VANIMO	5,773	0	0	3,662	142	35	0
17.	CHIMBU	15,843	2.790	7.022	5	3,453	1,473	0
18.	MANUS	5,257	2,789	7.033	0	0	2.822	187
19.	KIUNGA MENDI	3,355 8,676	106	0	1,737	. 0	73	0
20. 21.	MISIMA	5,692	3	26 0	1,570 0	56 0	0	0
21. 22.	LOUSUIA	2,529	0.	0	0	0	0	0
23.	BUKA	2,329	. 0.	248	0	0	0	0
24.	TOTAL	448,565	191,743	125,544	132,948	71,933	56,375	57,805
27.	IOIAL	4-10,505	171,773	123,544	132,540	11,733	50(575	37,003
					•			
	Destinati	on 8	9	10	Ħ	12	13	14
Origi	Destinati n	on 8	9	10	Ħ	12	13	14
Origi 1.		on 8 10,126	9 25,982	10 8,706	11 27,249	12 6,530	13 17,253	14 4,265
	n					4	4.5	
1.	n PORT.M	10,126	25,982	8,706	27,249	6,530	17,253	4,265
1. 2.	n PORT.M LAE	10,126 7,399	25,982 4,904	8,706 8,859	27,249 1,232	6,530 354	17,253 0	4,265 454
1. 2. 3.	n PORT.M LAE RABAUL	10,126 7,399 142	25,982 4,904 6	8,706 8,859 13,014	27,249 1,232 0	6,530 354 0	17,253 0 0	4,265 454 15,068
1. 2. 3. 4.	n PORT.M LAE RABAUL MT. HAGEN	10,126 7,399 142 7,145	25,982 4,904 6 57	8,706 8,859 13,014 0	27,249 1,232 0 0	6,530 354 0 8,881	17,253 0 0 0	4,265 454 15,068 0
1. 2. 3. 4. 5.	n PORT.M LAE RABAUL MT. HAGEN GOROKA	10,126 7,399 142 7,145 1,129	25,982 4,904 6 57 32	8,706 8,859 13,014 0	27,249 1,232 0 0	6,530 354 0 8,881	17,253 0 0 0	4,265 454 15,068 0
1. 2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	10,126 7,399 142 7,145 1,129 6,203 333 0	25,982 4,904 6 57 32 0	8,706 8,859 13,014 0 0 15 1,147	27,249 1,232 0 0 0 0 0 0	6,530 354 0 8,881 15 568 0 747	17,253 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	10,126 7,399 142 7,145 1,129 6,203 333	25,982 4,904 6 57 32 0 0	8,706 8,859 13,014 0 0 15 1,147 0	27,249 1,232 0 0 0 0 0 0 0	6,530 354 0 8,881 15 568 0 747	17,253 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	10,126 7,399 142 7,145 1,129 6,203 333 0 0	25,982 4,904 6 57 32 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0	27,249 1,232 0 0 0 0 0 0	6,530 354 0 8,881 15 568 0 747 0	17,253 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY	10,126 7,399 142 7,145 1,129 6,203 333 0 0	25,982 4,904 6 57 32 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0	6,530 354 0 8,881 15 568 0 747 0 0	17,253 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0	25,982 4,904 6 57 32 0 0 0 156 1,399	8,706 8,859 13,014 0 0 15 1,147 0 0 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0	6,530 354 0 8,881 15 568 0 747 0 0	17,253 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 0 758	25,982 4,904 6 57 32 0 0 0 156 1,399 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0	6,530 354 0 8,881 15 568 0 747 0 0 0	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 758 0	25,982 4,904 6 57 32 0 0 0 156 1,399 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0 0 39	6,530 354 0 8,881 15 568 0 747 0 0 0 957	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 0 758 0 372 56	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563	27,249 1,232 0 0 0 0 0 1,369 22 0 0 39 0	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 0 758 0 372 56 10,909	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0 0 39 0 0	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 758 0 372 56 10,909	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0 39 0 0 0 0	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 0 758 0 372 56 10,909 0 777	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 0 563 0 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275 0	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON, HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 0 758 0 372 56 10,909 0 777	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563 0 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275 0 0 2,974	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0 0 1,444
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 758 0 372 56 10,909 0 777 93 0	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563 0 0	27,249 1,232 0 0 0 0 0 0 1,369 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275 0 0 2,974 45	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0 0 1,444
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 758 0 372 56 10,909 0 777 93 0	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563 0 0 13	27,249 1,232 0 0 0 0 0 1,369 22 0 0 0 0 0 0 5,176	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275 0 0 2,974 45	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0 0 1,444
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 758 0 372 56 10,909 0 777 93 0 0 0	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 0 15 0 0 0 0 15	27,249 1,232 0 0 0 0 0 1,369 22 0 0 0 39 0 0 0 5,176 1,845	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275 0 0 2,974 45 0	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0 0 0 1,444
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	10,126 7,399 142 7,145 1,129 6,203 333 0 0 0 758 0 372 56 10,909 0 777 93 0	25,982 4,904 6 57 32 0 0 0 156 1,399 0 0 0 0 0	8,706 8,859 13,014 0 0 15 1,147 0 0 0 15 0 0 563 0 0 13	27,249 1,232 0 0 0 0 0 1,369 22 0 0 0 0 0 0 5,176	6,530 354 0 8,881 15 568 0 747 0 0 0 957 0 4,414 275 0 0 2,974 45	17,253 0 0 0 0 0 0 0 0 0 0 0 0 0	4,265 454 15,068 0 0 932 655 374 0 360 0 0 0 0 1,444

### OD Matrix of Air Passengers for Key Airports (2000)

Origin   Destination   15   16   17   18   19   20   21				and the second	•		is (2000)		
Drigin	(Wit						200		
DORT.M		Destination	15	16	17	18	19	20	21
2. LAE 57 0 0 3,041 85 61 0 0 3. RABAUL 0 0 0 5,270 0 0 0 0 4. MT. HAGEN 7,226 3,646 17 0 1,435 1,130 0 5. GOROKA 0 184 1,677 0 10 0 0 0 7. KIETA 0 0 1,181 2,673 68 0 0 7. KIETA 0 0 1,181 26 760 150 0 0 41 8. WEWAK 0 10,181 26 760 150 0 0 0 9. POPON. 0 0 0 25 0 0 0 0 0 0 10. HOSKINS 0 0 0 0 0 0 0 0 0 0 0 0 11. GURNEY 0 0 0 0 0 0 3,747 85 0 13. DARU 122 0 0 0 3,747 85 0 14. KAVIENG 0 0 0 1,374 0 0 0 0 15. TARI 0 0 0 1,374 0 0 0 0 16. VANIMO 0 0 0 0 0 7 8,128 0 17. CHIMBU 0 0 0 0 0 0 7 8,128 0 18. MANUS 0 0 0 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 8 0 0 19. KIUNGA 144 17 0 0 0 0 8 0 22. LOUSUIA 0 0 0 0 0 0 0 0 0 0 23. BUKA 0 0 13,2948 5. GOROKA 0 0 71,932 6. MADANG 0 0 77,898 6. MADANG 0 0 71,932 6. MADANG 0 0 0 71,932 6. MADANG 0 0 0 13,253 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 0 225,761 13. DARU 0 0 225,761 13. DARU 0 0 23,553 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 0 225,761 13. DARU 0 0 225,761 13. DARU 0 0 225,761 13. DARU 0 0 23,553 15. TARI 0 0 0 225,761 13. DARU 0 0 0 0 0 0 0 0 0 10. TARIBLEY 1,988 0 36,931 12. TABUBIL 0 0 0 225,761 13. DARU 0 0 0 0 0 0 0 0 14. KAVIENG 0 0 0 0 0 0 0 0 0 15. TARI 0 0 0 0 0 0 0 0 0 0 15. TARI 0 0 0 0 0 0 0 0 0 0 15. TARIBLEY 1,988 0 36,931 12. TARIBLEY	Origi	n							1,648.3
3. RABAUL 0 0 0 5,270 0 0 0 0 0 4 MT. HAGEN 7,226 3,646 17 0 1,435 1,130 0 0 5 GOROKA 0 184 1,677 0 10 1,0 0 0 0 0 6 MADANG 311 0 1,815 2,873 68 0 0 0 0 15 817 0 0 0 41 8 8 WEWAK 0 10,181 26 760 150 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.	PORT.M	14,920	6,194	17,199	6,176	3,109	8,090	4,617
3. RABAUL 0 0 0 5,270 0 0 0 0 0 4 MT. HAGEN 7,226 3,646 17 0 1,435 1,130 0 0 5 GOROKA 0 184 1,677 0 10 1,0 0 0 0 0 6 MADANG 311 0 1,815 2,873 68 0 0 0 0 15 817 0 0 0 41 8 8 WEWAK 0 10,181 26 760 150 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		LAE		_		3,041		61	0
4. MT. HAGEN 7,226 3,646 17 0 1,435 1,130 0 5. GOROKA 0 184 1,677 0 10 0 0 6. MADANG 311 0 1.815 2,873 68 0 0 7. KIETA 0 0 0 15 817 0 0 0 0 9. POPON. 0 0 0,181 26 760 150 0 0 9. POPON. 0 0 0 25 0 0 0 0 0 0 10. HOSKINS 0 0 0 0 0 0 0 0 0 0 0 11. GURNEY 0 0 0 0 0 0 0 3,747 85 0 12. TABUBIL 4,144 636 0 0 0,3747 85 0 13. DARU 122 0 0 0 0,3747 85 0 14. KAVIENG 0 0 0 0 0 0,3747 85 0 15. TARI 0 0 0 0 1,374 0 0 0 17. CHIMBU 0 0 0 0 0 0 63 0 0 18. MANUS 0 0 0 0 0 0 0 63 0 0 19. KIUNGA 144 17 0 0 0 63 0 0 19. KIUNGA 144 17 0 0 0 8 00 19. KIUNGA 144 17 0 0 0 8 00 19. KIUNGA 144 17 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			The second secon	n					
S. GOROKA 6. MADANG 7. KIETA 7. O 1.815 7. KIETA 8. WEWAK 8. O 10,181 8. WEWAK 9. POPON 10. O 25 10. HOSKINS 10. O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				. *		and the second s	A Company of the Comp		
6. MADANG 7. KIETA 8. WEWAK 9. 10,181 8. WEWAK 9. 10,181 9. POPON 9. POPON 9. 0 10. HOSKINS 10 10 11. GURNEY 10 12 12 13. DARU 12 12 14. KAVIENG 10 15. TARI 10 16. VANIMO 10 17. CHIMBU 10 10 18. MANUS 10 19. KIUNGA 144 17 10 10 10 10 11. MISIMA 10 10 10 11. HORT.M 12 12 13. DARU 12 12 13. DARU 14 17 10 10 10 10 10 11 11 11 11 11 11 11 11									
7. KIETA 0 0 15 817 0 0 41 8. WEWAK 0 10,181 26 760 150 0 0 9. POPON. 0 0 25 0 0 0 0 0 0 10. HOSKINS 0 0 0 0 0 0 0 0 0 0 0 0 11. GURNEY 0 0 0 0 0 0 3,747 85 00 12. TABUBIL 4,144 636 0 0 3,747 85 00 13. DARU 122 0 0 0 0 3,775 0 0 14. KAVIENG 0 0 0 0 1,374 0 0 0 0 15. TARI 0 0 0 0 0 0 7 8,128 0 16. VANIMO 0 0 0 0 0 0 7 8,128 0 17. CHIMBU 0 0 0 0 0 0 63 0 0 0 18. MANUS 0 0 0 0 0 0 0 0 0 0 0 0 0 18. MANUS 0 0 0 0 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 8 0 20. MENDI 7,088 0 0 0 11 6 0 0 0 21. MISIMA 0 0 0 0 0 0 0 0 0 0 0 0 22. LOUSUIA 0 0 0 0 0 0 0 0 0 0 0 0 23. BUKA 0 0 0 0 0 0 0 0 0 0 0 0 0 24. TOTAL 34,012 20,858 20,775 20,322 12,455 17,500 10,878  Destination 22 23 24  Origin 1. PORT.M 2,362 0 448,565 2 2. LAE 0 0 191,742 3 3. RABAUL 0 250 125,544 4 4 4 7 4 6 0 0 132,948 5 5. GOROKA 0 0 71,932 6 6. MADANG 0 0 0 56,375 7 7. KIETA 6 0 0 57,804 8 8. WEWAK 0 0 0 32,333 1 10. GURNEY 1,988 0 36,931 1 21. TABUBIL 0 0 25,761 1 23. DARU 0 0 25,761 1 24. TARI 0 0 0 32,353 1 25. TARI 0 0 34,013 1 26. VANIMO 0 0 0 20,858 1 27. CHIMBU 0 0 0 20,322 1 28. WEWAK 0 0 0 45,441 9 9. POPON. 8 0 32,533 1 29. KIUNGA 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									
8. WEWAK 0 10,181 26 760 150 0 0 0 9 POPON 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									
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10. HOSKINS	8.	WEWAK	0,	10,181		760	150	0	3
11. GURNEY	9.	POPON.	0	.0	25	0	. 0	0	0
11.   GURNEY	10.	HOSKINS	0	0	0	0 .	0	0	2, 5, 5
12		and the control of th	0	0		0	0	0	6.220
13. DARU			.77	· .		1.7	3 747	1 1 1 1 1 THE	
14. KAVIENG 0 0 0 1,374 0 0 0 0 15. TARI 0 0 0 0 0 7 8,128 0 16. VANIMO 0 0 0 0 0 0 63 0 0 0 17. CHIMBU 0 0 0 0 0 0 0 0 0 0 0 0 18. MANUS 0 0 0 0 0 0 0 0 0 0 0 0 19. KIUNGA 144 17 0 0 0 0 8 0 0 20. MENDI 7,088 0 0 11 6 0 0 0 0 21. MISIMA 0 0 0 0 0 0 0 0 0 0 0 0 22. LOUSUIA 0 0 0 0 0 0 0 0 0 0 0 0 23. BUKA 0 0 0 0 0 0 0 0 0 0 0 0 0 24. TOTAL 34,012 20,858 20,775 20,322 12,455 17,500 10,878  Destination 22 23 24  Origin 1. PORT.M 2,362 0 448,565 2 12,455 17,500 10,878  Destination 0 250 125,544 4 4 MT. HAGEN 0 0 132,948 5 GOROKA 0 0 71,932 6 MADANG 0 0 56,375 7 KIETA 6 0 57,804 8 WEWAK 0 0 45,441 9 POPON. 8 0 32,536 10 HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 25,761 13. DARU 0 0 0 21,991 14. KAVIENG 0 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 0 20,878 17. CHIMBU 0 0 0 20,775 18. MANUS 0 0 0 20,322 19. KIUNGA 0 0 0 17,501 18. MANUS 0 0 0 20,322 19. KIUNGA 0 0 0 17,501 21. MISIMA 10 0 10,878 22. LOUSUIA 0 0 0 4,374 223. BUKA 0 0 0 250					· ·				
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19. KIUNGA 144 17 0 0 0 8 0 20. MENDI 7,088 0 0 11 6 0 0 21. MISIMA 0 0 0 0 0 0 0 0 0 0 22. LOUSUIA 0 0 0 0 0 0 0 0 0 0 23. BUKA 0 0 0 0 0 0 0 0 0 0 0 24. TOTAL 34,012 20,858 20,775 20,322 12,455 17,500 10,878    Destination   22   23   24	18.	MANUS	.0	0	0	0	0	0	0
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21. MISIMA 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 2 1 2 1 2					0	11	6	Ò	0
22. LOUSUIA         0 <td< th=""><th></th><th></th><th></th><th>* *.</th><th></th><th>47 4</th><th></th><th>0</th><th></th></td<>				* *.		47 4		0	
23. BUKA 24. TOTAL 34,012 20,858 20,775 20,322 12,455 17,500 10,878   Destination 22 23 24  Origin 1. PORT.M 2,362 0 448,565 2. LAE 0 0 191,742 3. RABAUL 0 250 125,544 4. MT. HAGEN 0 0 132,948 5. GOROKA 0 0 71,932 6. MADANG 0 0 56,375 7. KIETA 6 0 57,804 8. WEWAK 0 0 0 45,441 9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 0 43,744 23. BUKA									1.14
Destination   22   23   24   24   25   25   26   27   27   20   20						-			
Destination   22   23   24				· .					1.7
Origin         1. PORT.M         2,362         0         448,565           2. LAE         0         0         191,742           3. RABAUL         0         250         125,544           4. MT. HAGEN         0         0         132,948           5. GOROKA         0         0         71,932           6. MADANG         0         0         56,375           7. KIETA         6         0         57,804           8. WEWAK         0         0         45,441           9. POPON.         8         0         32,536           10. HOSKINS         0         0         32,333           11. GURNEY         1,988         0         36,931           12. TABUBIL         0         0         25,761           13. DARU         0         0         21,991           14. KAVIENG         0         0         23,553           15. TARI         0         0         34,013           16. VANIMO         0         0         20,858           17. CHIMBU         0         0         20,775           18. MANUS         0         0         20,322           19. KIUNGA         0	24.	IOIAL	34,012	20,858	20,773	20,322	12,455	17,300	10,070
Origin         1. PORT.M         2,362         0         448,565           2. LAE         0         0         191,742           3. RABAUL         0         250         125,544           4. MT. HAGEN         0         0         132,948           5. GOROKA         0         0         71,932           6. MADANG         0         0         56,375           7. KIETA         6         0         57,804           8. WEWAK         0         0         45,441           9. POPON.         8         0         32,536           10. HOSKINS         0         0         32,333           11. GURNEY         1,988         0         36,931           12. TABUBIL         0         0         25,761           13. DARU         0         0         21,991           14. KAVIENG         0         0         23,553           15. TARI         0         0         34,013           16. VANIMO         0         0         20,858           17. CHIMBU         0         0         20,775           18. MANUS         0         0         20,322           19. KIUNGA         0								4	
Origin         1. PORT.M         2,362         0         448,565           2. LAE         0         0         191,742           3. RABAUL         0         250         125,544           4. MT. HAGEN         0         0         132,948           5. GOROKA         0         0         71,932           6. MADANG         0         0         56,375           7. KIETA         6         0         57,804           8. WEWAK         0         0         45,441           9. POPON.         8         0         32,536           10. HOSKINS         0         0         32,333           11. GURNEY         1,988         0         36,931           12. TABUBIL         0         0         25,761           13. DARU         0         0         21,991           14. KAVIENG         0         0         23,553           15. TARI         0         0         34,013           16. VANIMO         0         0         20,858           17. CHIMBU         0         0         20,775           18. MANUS         0         0         20,322           19. KIUNGA         0									
1. PORT.M 2,362 0 448,565 2. LAE 0 0 191,742 3. RABAUL 0 250 125,544 4. MT. HAGEN 0 0 132,948 5. GOROKA 0 0 71,932 6. MADANG 0 0 56,375 7. KIETA 6 0 57,804 8. WEWAK 0 0 45,441 9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 17,501 21. MISIMA 10 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 4,374 23. BUKA					F-2 .				•
2. LAE 0 0 191,742 3. RABAUL 0 250 125,544 4. MT. HAGEN 0 0 132,948 5. GOROKA 0 0 71,932 6. MADANG 0 0 56,375 7. KIETA 6 0 57,804 8. WEWAK 0 0 45,441 9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 4,374 23. BUKA			22	23	24				
2. LAE 0 0 191,742 3. RABAUL 0 250 125,544 4. MT. HAGEN 0 0 132,948 5. GOROKA 0 0 71,932 6. MADANG 0 0 56,375 7. KIETA 6 0 57,804 8. WEWAK 0 0 45,441 9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 4,374 23. BUKA	Origi		22	23	24		e Ville	in the second	ing Tanggara Tanggara
3. RABAUL 0 250 125,544 4. MT. HAGEN 0 0 132,948 5. GOROKA 0 0 71,932 6. MADANG 0 0 56,375 7. KIETA 6 0 57,804 8. WEWAK 0 0 45,441 9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 4 4,374 23. BUKA	_	n							Territoria Territoria Securitoria
4. MT. HAGEN       0       0       132,948         5. GOROKA       0       0       71,932         6. MADANG       0       0       56,375         7. KIETA       6       0       57,804         8. WEWAK       0       0       45,441         9. POPON.       8       0       32,536         10. HOSKINS       0       0       32,333         11. GURNEY       1,988       0       36,931         12. TABUBIL       0       0       25,761         13. DARU       0       0       21,991         14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1.	n PORT.M	2,362	0	448,565				
5. GOROKA       0       0       71,932         6. MADANG       0       0       56,375         7. KIETA       6       0       57,804         8. WEWAK       0       0       45,441         9. POPON.       8       0       32,536         10. HOSKINS       0       0       32,333         11. GURNEY       1,988       0       36,931         12. TABUBIL       0       0       25,761         13. DARU       0       0       21,991         14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       250	1. 2.	n PORT.M LAE	2,362	0 0	448,565 191,742				Tengan Tengan Selam Tengan
6. MADANG 7. KIETA 6 0 57,804 8. WEWAK 9 POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 25536	1. 2. 3.	n PORT.M LAE RABAUL	2,362 0 0	0 0 250	448,565 191,742 125,544				The State of the S
7. KIETA 6 0 57,804 8. WEWAK 0 0 45,441 9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 17,501 21. MISIMA 10 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 250	1. 2. 3. 4.	n PORT.M LAE RABAUL MT. HAGEN	2,362 0 0 0	0 0 250 0	448,565 191,742 125,544 132,948				
8. WEWAK       0       0       45,441         9. POPON.       8       0       32,536         10. HOSKINS       0       0       32,333         11. GURNEY       1,988       0       36,931         12. TABUBIL       0       0       25,761         13. DARU       0       0       21,991         14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5.	n PORT.M LAE RABAUL MT. HAGEN GOROKA	2,362 0 0 0 0	0 0 250 0	448,565 191,742 125,544 132,948 71,932				
9. POPON. 8 0 32,536 10. HOSKINS 0 0 32,333 11. GURNEY 1,988 0 36,931 12. TABUBIL 0 0 25,761 13. DARU 0 0 21,991 14. KAVIENG 0 0 23,553 15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 17,501 21. MISIMA 10 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 250	1. 2. 3. 4. 5. 6.	n PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	2,362 0 0 0 0	0 0 250 0 0	448,565 191,742 125,544 132,948 71,932 56,375				
10. HOSKINS       0       0       32,333         11. GURNEY       1,988       0       36,931         12. TABUBIL       0       0       25,761         13. DARU       0       0       21,991         14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	2,362 0 0 0 0 0 0	0 0 250 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804				
11. GURNEY       1,988       0       36,931         12. TABUBIL       0       0       25,761         13. DARU       0       0       21,991         14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	2,362 0 0 0 0 0 0 6	0 0 250 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441				
12. TABUBIL 0 0 25,761  13. DARU 0 0 21,991  14. KAVIENG 0 0 23,553  15. TARI 0 0 34,013  16. VANIMO 0 0 20,858  17. CHIMBU 0 0 20,775  18. MANUS 0 0 20,322  19. KIUNGA 0 0 12,455  20. MENDI 0 0 17,501  21. MISIMA 10 0 10,878  22. LOUSUIA 0 0 4,374  23. BUKA 0 0 250	1. 2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	2,362 0 0 0 0 0 0 6	0 0 250 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441				
12. TABUBIL 0 0 25,761  13. DARU 0 0 21,991  14. KAVIENG 0 0 23,553  15. TARI 0 0 34,013  16. VANIMO 0 0 20,858  17. CHIMBU 0 0 20,775  18. MANUS 0 0 20,322  19. KIUNGA 0 0 12,455  20. MENDI 0 0 17,501  21. MISIMA 10 0 10,878  22. LOUSUIA 0 0 4,374  23. BUKA 0 0 250	1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	2,362 0 0 0 0 0 0 6 0	0 0 250 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536				
13. DARU       0       0       21,991         14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	2,362 0 0 0 0 0 0 6 0 8	0 0 250 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333				
14. KAVIENG       0       0       23,553         15. TARI       0       0       34,013         16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	2,362 0 0 0 0 0 6 0 8 0	0 0 250 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931				
15. TARI 0 0 34,013 16. VANIMO 0 0 20,858 17. CHIMBU 0 0 20,775 18. MANUS 0 0 20,322 19. KIUNGA 0 0 12,455 20. MENDI 0 0 17,501 21. MISIMA 10 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	2,362 0 0 0 0 0 6 0 8 0 1,988	0 0 250 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761				
16. VANIMO       0       0       20,858         17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	2,362 0 0 0 0 0 6 0 8 0 1,988 0	0 0 250 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991				10 10 10 10 10 10 10 10 10 10 10 10 10 1
17. CHIMBU       0       0       20,775         18. MANUS       0       0       20,322         19. KIUNGA       0       0       12,455         20. MENDI       0       0       17,501         21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	2,362 0 0 0 0 0 6 0 8 0 1,988 0	0 0 250 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553			の 100 mm (100 mm) (	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
18. MANUS     0     0     20,322       19. KIUNGA     0     0     12,455       20. MENDI     0     0     17,501       21. MISIMA     10     0     10,878       22. LOUSUIA     0     0     4,374       23. BUKA     0     0     250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0	0 0 250 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
19. KIUNGA 0 0 12,455 20. MENDI 0 0 17,501 21. MISIMA 10 0 10,878 22. LOUSUIA 0 0 4,374 23. BUKA 0 0 250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	2,362 0 0 0 0 0 0 6 0 8 0 1,988 0 0	0 0 250 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858				
20. MENDI     0     0     17,501       21. MISIMA     10     0     10,878       22. LOUSUIA     0     0     4,374       23. BUKA     0     0     250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775				<ul><li>(1) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4</li></ul>
20. MENDI     0     0     17,501       21. MISIMA     10     0     10,878       22. LOUSUIA     0     0     4,374       23. BUKA     0     0     250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	2,362 0 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322				1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、
21. MISIMA       10       0       10,878         22. LOUSUIA       0       0       4,374         23. BUKA       0       0       250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	2,362 0 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322				《《《《《《《《《《《《《《《《《《》》》。 《《《《《》》 《《《》《《》《《》《《》《《》《《》《《》《《》《《》《《》
22. LOUSUIA 0 0 4,374 23. BUKA 0 0 250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322 12,455				《《《《《《《《《《《《《《《《《《《《《《《《《《《《》》》》。《《《《《》》》。《《《》》。《《《》》。《《《》》。《《《》》。《《《》》。《《《》》。《《《》》。《《《》》。《《《》》。《《《》 《《《》》。《《》。《《
23. BUKA 0 0 250	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322 12,455 17,501				《《《《《《《《《《《《《《《》》》。 《《《《《》》 《《《》 《《》 《《》
	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322 12,455 17,501 10,878				
230 1,444,000 + 1 - 1.1	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322 12,455 17,501 10,878 4,374			1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、	《《《《《《《《《《《《《》》》,《《《《《》》》,《《《》《《》》,《《》《《》
	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA BUKA	2,362 0 0 0 0 0 6 0 8 0 1,988 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	448,565 191,742 125,544 132,948 71,932 56,375 57,804 45,441 32,536 32,333 36,931 25,761 21,991 23,553 34,013 20,858 20,775 20,322 12,455 17,501 10,878 4,374 250				《《《《《《《《《《《《》》》,《《《《《》》,《《《》》,《《》《《》。《《》《《》《》。《《》。《

OD Matrix of Air Passengers for Key Airports (2005)

(Milahana)	CD HAMIA	01 / 111 1 (13)	acingera ioi	Key Anpe	nts (2005)		
(Without)	1	2	2		_	•	~
Destinati	on 1	2	3	4	5	6	7
Origin		.24.21					
1. PORT.M	0   1	126,528	51,157		50,803	20,362	35,787
2. LAE	125,536	0	32,495	30.054	15,256	11,460	3,814
<ol><li>RABAUL</li></ol>	55,716	30,964	0	0	0	1,900	32,425
4. MT. HAGEI	N 88,661	29,383	30	0	14,766	13,038	0
5. GOROKA	54,249	15,640	0	14;329	0	8,267	0
6. MADANG	21,595	11,707	·	11,003	8,663	0	13
7. KIETA	36,022	2,887	31,121	0	40	150	0
8. WEWAK	11,105	9,027	482	10,342	1,650	6,619	0
9. POPON.	32,109	8,292	0			0,019	0
			· ·	0	.0		
10. HOSKINS	9,996	10,260	19,541	0	. 0	0	1,620
11. GURNEY	34,994	1,941	0	0	0	0	0
12. TABUBIL	7,171	361	12	11,842	64	506	0
13. DARU	23,920	0	0	0	0	0	0
14. KAVIENG	4,543		21,156	. 0	22	1,441	303
15. TARI	18,475	O,	0	14,003	39	155	0
16. VANIMO	8,085	0	. 0	5,759	212	48	0
17. CHIMBU	22,111	0	0	8	5,141	2,014	0
18. MANUS	7,228	4,043	10,212	0	0	3,802	265
19. KIUNGA	3,627	122	0	2,193	. 0	75	0
20. MENDI	11,090	4	35	2,271	77	9	0
21. MISIMA	8,218	0	0	0	0	0.	0
22. LOUSUIA	3,106	0	0	0	0	0.7	0
23. BUKA	2	Ď	248	ő	0	0	o o
24. TOTAL	587,558	•	167,817	188,289	96,733	69,849	74,226
21. 101110	207,220	200,001	10,101,	100,202	70,750	03,013	, .,,,,,
	•		4				
Danthart		n	10	11	12	12	14
Destinati	on 8	9 .	10	11	12	13	14
Origin							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Origin 1. PORT.M	11,371	33,396	10,856	36,880	7,578	24,121	5,716
Origin 1. PORT.M 2. LAE	11,371 8,840	33,396 6,670	10,856 11,703	36,880 1,761	7,578 436	24,121 0	5,716 643
Origin 1. PORT.M 2. LAE 3. RABAUL	11,371 8,840 171	33,396 6,670 8	10,856 11,703 17,288	36,880 1,761 0	7,578 436 0	24,121 0 0	5,716 643 21,408
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGE	11,371 8,840 171 N 9,355	33,396 6,670 8	10,856 11,703 17,288 0	36,880 1,761 0	7,578 436 0 11,940	24,121 0 0 0	5,716 643 21,408 0
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA	11,371 8,840 171 N 9,355 1,379	33,396 6,670 8 84 44	10,856 11,703 17,288 0	36,880 1,761 0 0	7,578 436 0 11,940	24,121 0 0 0	5,716 643 21,408 0
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA 6. MADANG	11,371 8,840 171 N 9,355 1,379 6,730	33,396 6,670 8 84 44 0	10,856 11,703 17,288 0 0	36,880 1,761 0 0 0	7,578 436 0 11,940 19 640	24,121 0 0 0 0	5,716 643 21,408 0 0
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA 6. MADANG 7. KIETA	11,371 8,840 171 N 9,355 1,379 6,730 384	33,396 6,670 8 84 44 0	10,856 11,703 17,288 0 0 18	36,880 1,761 0 0 0	7,578 436 0 11,940 19 640 0	24,121 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA 6. MADANG 7. KIETA 8. WEWAK	11,371 8,840 171 N 9,355 1,379 6,730 384	33,396 6,670 8 84 44 0	10,856 11,703 17,288 0 0 18 1,470	36,880 1,761 0 0 0 0	7,578 436 0 11,940 19 640 0 800	24,121 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA 6. MADANG 7. KIETA	11,371 8,840 171 N 9,355 1,379 6,730 384 0	33,396 6,670 8 84 44 0	10,856 11,703 17,288 0 0 18	36,880 1,761 0 0 0 0 0 0	7,578 436 0 11,940 19 640 0	24,121 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA 6. MADANG 7. KIETA 8. WEWAK	11,371 8,840 171 N 9,355 1,379 6,730 384	33,396 6,670 8 84 44 0 0	10,856 11,703 17,288 0 0 18 1,470	36,880 1,761 0 0 0 0	7,578 436 0 11,940 19 640 0 800	24,121 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGES 5. GOROKA 6. MADANG 7. KIETA 8. WEWAK 9. POPON 10. HOSKINS	11,371 8,840 171 N 9,355 1,379 6,730 384 0	33,396 6,670 8 84 44 0 0	10,856 11,703 17,288 0 0 18 1,470 0	36,880 1,761 0 0 0 0 0 0	7,578 436 0 11,940 19 640 0 800	24,121 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471
Origin 1. PORT.M 2. LAE 3. RABAUL 4. MT. HAGEI 5. GOROKA 6. MADANG 7. KIETA 8. WEWAK 9. POPON. 10. HOSKINS 11. GURNEY	11,371 8,840 171 N 9,355 1,379 6,730 384 0	33,396 6,670 8 84 44 0 0 0 207 1,998	10,856 11,703 17,288 0 0 18 1,470 0	36,880 1,761 0 0 0 0 0 0 1,958 30	7,578 436 0 11,940 19 640 0 800 0	24,121 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL	11,371 8,840 171 N 9,355 1,379 6,730 384 0	33,396 6,670 8 84 44 0 0 0 207 1,998	10,856 11,703 17,288 0 0 18 1,470 0 0	36,880 1,761 0 0 0 0 0 0 1,958 30	7,578 436 0 11,940 19 640 0 800 0	24,121 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0	33,396 6,670 8 84 44 0 0 0 207 1,998	10,856 11,703 17,288 0 0 18 1,470 0 0 21	36,880 1,761 0 0 0 0 0 1,958 30 0	7,578 436 0 11,940 19 640 0 800 0 0	24,121 0 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0	33,396 6,670 8 84 44 0 0 0 207 1,998 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 0	36,880 1,761 0 0 0 0 0 0 1,958 30 0 0	7,578 436 0 11,940 19 640 0 800 0 0 0 0 1,289	24,121 0 0 0 0 0 0 0 0 0 0 0 884 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 814 0 468	33,396 6,670 8 84 44 0 0 0 207 1,998 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777	36,880 1,761 0 0 0 0 0 0 1,958 30 0 0 57	7,578 436 0 11,940 19 640 0 800 0 1,289 0 6,330	24,121 0 0 0 0 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGES  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777 0 0	36,880 1,761 0 0 0 0 0 1,958 30 0 0 57 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372	24,121 0 0 0 0 0 0 0 0 0 0 884 0 0 207	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGES  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 0 777	36,880 1,761 0 0 0 0 0 1,958 30 0 0 57 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372 0	24,121 0 0 0 0 0 0 0 0 0 0 884 0 207 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU  18. MANUS	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 814 0 468 78 14,360 0	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777 0 0 0 19	36,880 1,761 0 0 0 0 0 1,958 30 0 0 57 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372 0 0	24,121 0 0 0 0 0 0 0 0 0 0 0 884 0 207 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0 0 0 2,160
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU  18. MANUS  19. KIUNGA	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360 0 1,006	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777 0 0 19	36,880 1,761 0 0 0 0 0 1,958 30 0 0 57 0 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372 0 0 3,055	24,121 0 0 0 0 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0 0 0 2,160
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU  18. MANUS  19. KIUNGA  20. MENDI	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360 0 1,006	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777 0 0 19	36,880 1,761 0 0 0 0 0 1,958 30 0 0 0 57 0 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372 0 3,055 55	24,121 0 0 0 0 0 0 0 0 0 0 884 0 0 207 0 0 4,995	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0 0 0 2,160 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU  18. MANUS  19. KIUNGA  20. MENDI  21. MISIMA	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360 0 1,006 92	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	36,880 1,761 0 0 0 0 0 1,958 30 0 0 0 57 0 0 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372 0 3,055 55	24,121 0 0 0 0 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0 0 0 0 0 0 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU  18. MANUS  19. KIUNGA  20. MENDI  21. MISIMA  22. LOUSUIA	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360 0 1,006 92 0	33,396 6,670 8 84 44 0 0 0 0 207 1,998 0 0 0 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 0 777 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	36,880 1,761 0 0 0 0 0 0 1,958 30 0 0 0 57 0 0 0 0 8,142 2,535	7,578 436 0 11,940 19 640 0 800 0 1,289 0 6,330 372 0 3,055 55 0 0	24,121 0 0 0 0 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0 0 0 2,160 0
Origin  1. PORT.M  2. LAE  3. RABAUL  4. MT. HAGEI  5. GOROKA  6. MADANG  7. KIETA  8. WEWAK  9. POPON.  10. HOSKINS  11. GURNEY  12. TABUBIL  13. DARU  14. KAVIENG  15. TARI  16. VANIMO  17. CHIMBU  18. MANUS  19. KIUNGA  20. MENDI  21. MISIMA	11,371 8,840 171 N 9,355 1,379 6,730 384 0 0 0 468 78 14,360 0 1,006 92	33,396 6,670 8 84 44 0 0 0 207 1,998 0 0 0 0 0	10,856 11,703 17,288 0 0 18 1,470 0 0 21 0 777 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	36,880 1,761 0 0 0 0 0 1,958 30 0 0 0 57 0 0 0	7,578 436 0 11,940 19 640 0 800 0 0 1,289 0 6,330 372 0 3,055 55	24,121 0 0 0 0 0 0 0 0 0 0 0 0 0	5,716 643 21,408 0 0 1,227 904 471 0 497 0 0 0 0 0 0 0 0 0

# OD Matrix of Air Passengers for Key Airports (2005)

(Wit	hout)		7 - 47 - 500				. 13	
Origi	Destination	15	, 16	17	. 18	19	; , <b>20</b>	21
1.	PORT.M	22,043	8,648	24,131	8,510	3,397	10,274	6,621
2.	LAE	89	0	0	4,420	99	81	0
3,	RABAUL	0	Õ	0	7,686	0	0	0
4.	MT. HAGEN	11,809	5,731	27		1,834	1,629	0
5.	GOROKA	0	275	2,519		12	0	0
6.	MADANG	455	0	2,504		72	0	0
7.	KIETA	0	0	22	1,159	0	0	61
8.	WEWAK	0	13,379	34	988	150	( <b>O</b> )	0
9.	POPON.	0	0	37	0	0	0	0
10.	HOSKINS	0	- 0	0	0	0	0.34	
11.	GURNEY	į <b>0</b>	0	. 0,	0	0	# - <b>0</b> #,+€,	
, 12.	TABUBIL	5,986	862		0	3,911		0
13.	DARU	203	0	0	•		0.5	
14.	KAVIENG	0		<u>0</u>	2,060	0	0	_
15.	TARI	0	. 0	0	0	10	12,301	0
16.	VANIMO	. 0	0	0	0	81	0	. 0
17.	СНІМВИ	. 0	0	0	0	0	0 /	0
18.	MANUS	0	0,	0	0.	0	0 0	0
19.	KIUNGA	198	21	. 0	. 0	0	9	0
20.	MENDI	10,815	0	0	16		0	0
21.	MISIMA	0	0	0	0	0 4 1 0	0.	0
22. 23.	LOUSUIA BUKA	: 0 . 0	0	: .0	0	0	0	0
23. 24.	TOTAL	51,598	28,917	29,275	28,734		24,398	
Origi	Destination 1	22	23	24		\$		
1.	PORT,M	2,893	0	587,559			1 1	
2.	LAE	0	0	253,357	e el	f .		- I
3,	RABAUL	0	250	167,816			4.1.3	1
4.	MT. HAGEN	0	0	188,289	8	e di se	garan kan ka	100
5.	GOROKA	0	0	96,732	· .			er e
6.	MADANG	0	0	69,848		1.1	Maria Cara	100
. 7.	KIETA	7	0	74,226	ı			\$ 1. July 1
8.	WEWAK	0	0	55,048				
.9.	POPON.	10	0	42,407			e de la Prima	
10.	HOSKINS	0	0	42,151			a serial de ja M	: 1411 :
11. 12.	GURNEY	2,716	0	51,364			en e	e e e e e e e e e e e e e e e e e e e
13.	TABUBIL DARU	0	0	32,515 30,226		.*	en e	
14.	KAVIENG	0	0	33,027	• •			
15.	TARI	0	0	51,599	• *			r i Propins
16.	VANIMO	ő	0	28,917				
17.	CHIMBU	ŏ	0	29,275				en en efter de Giller en
18.	MANUS	0	0	28,734				
19.	KIUNGA	ŏ	. 0	14,387				
20.	MENDI	ŏ	0	24,398				en de la companya de La companya de la co
21.	MISIMA	15	.0	16,375			en 1.1948	
22.	LOUSUIA	0	0	5,640		e e e e e e e e e e e e e e e e e e e	en e	
23.	BUKA	0	0	250	4.8		200 July 1	
24.	TOTAL	5,641	250	1,924,140	ante de la constant	1 0	100	The Asi

# OD Matrix of Air Passengers for Key Airports (2010)

		PIMIMIA	or Air Fa	ssengers for	Key Anpo	)118 (2010)	,	
(With			_					
	Destination	l.	2	3	4	5	6	7
Origin				9.00				1 1,2,22
1.	PORT.M	0		66,320	118,791	66,467	24,333	45,022
2.	LAE	162,283	0	44,115	43,107	20,893	14,401	5,033
3.	RABAUL	a de la companya de	s42,098	0	. 0	. 0	2,404	43,029
4.	MT. HAGEN	122,040		44	0,	21,402	17,600	. 0
5.	GOROKA	71,239	21,479	0	20,797	0	10,576	0
6.	MADANG	25,891	14,747	1,682	14,865	11,077	0	16
7.	KIETA	45,354	3,809	41,239	0.,	54	183	0
8.	WEWAK	12,736	10,901	585	13,458	2,025	7,293	0
9.	POPON.	41,489	11,216	0	0.	0	0	0
10.	HOSKINS	12,617		25,941	0	0	0	2,088
11.	GURNEY	47,072		0	0	. 0	Ö	0
12.	TABUBIL	8,532		15	15,857	81	581	0
13.	DARU	33,217		0	0	0	0	0
14.	KAVIENG	6,075		29,610	0	31	1,887	414
15.	TARI	26443		0	21638	58	220	0
16.	VANIMO	11,229		0	8,757	310	66	0
17.	СНІМВИ	30,554		ő	13	7,482	2,728	0
18.	MANUS	9,864		14,569	0	7,102	5,088	370
19.	KIUNGA	3,932		0	2,720	0	78	0
20.	MENDI	14,284		48	3,227	104	11	ő
20. 21.	MISIMA	11,582		0	0	0	0	0
21. 22.	LOUSUIA	3,862		0	0	0	0	0
		3,802 2		and the second s	0	0	0	
23.	BUKA		0	248	and the second of		07.443	05.00
24.	TOTAL	772,690	335,617	224,415	263,229	129,983	87,443	95,971
		•						
				40			40	
	Destination	8	9	10	11	12	13	14
Огigir	1							
1.	PORT.M	13,022	43,211	13,699	59,740	8,975	33,541	7,642
1. 2.	1 PORT.M LAE	13,022 10,667	43,211 9,041	13,699 15,484	59,740 2,483	8,975 544	33,541 0	7,642 899
1.	PORT.M	13,022 10,667 207	43,211 9,041 11	13,699 15,484	59,740 2,483 0	8,975 544 0	33,541 0 0	7,642
1. 2.	1 PORT.M LAE	13,022 10,667 207 12,182	43,211 9,041 11 121	13,699 15,484	59,740 2,483 0	8,975 544 0 15,959	33,541 0 0 0	7,642 899 30,021
1. 2. 3.	1 PORT.M LAE RABAUL	13,022 10,667 207	43,211 9,041 11 121	13,699 15,484 22,993 0	59,740 2,483 0	8,975 544 0 15,959 24	33,541 0 0 0 0	7,642 899 30,021 0
1. 2. 3. 4.	PORT.M LAE RABAUL MT. HAGEN	13,022 10,667 207 12,182	43,211 9,041 11 121 61	13,699 15,484 22,993	59,740 2,483 0 0 0	8,975 544 0 15,959	33,541 0 0 0 0	7,642 899 30,021 0 0
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	13,022 10,667 207 12,182 1,696	43,211 9,041 11 121 61 0	13,699 15,484 22,993 0	59,740 2,483 0 0	8,975 544 0 15,959 24	33,541 0 0 0 0	7,642 899 30,021 0
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	13,022 10,667 207 12,182 1,696 7,429	43,211 9,041 11 121 61 0	13,699 15,484 22,993 0 0	59,740 2,483 0 0 0	8,975 544 0 15,959 24 734	33,541 0 0 0 0	7,642 899 30,021 0 0
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	13,022 10,667 207 12,182 1,696 7,429 448	43,211 9,041 11 121 61 0 0	13,699 15,484 22,993 0 0 23 1,894	59,740 2,483 0 0 0 0	8,975 544 0 15,959 24 734	33,541 0 0 0 0 0 0	7,642 899 30,021 0 1,611 1,238
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON	13,022 10,667 207 12,182 1,696 7,429 448 0	43,211 9,041 11 121 61 0 0	13,699 15,484 22,993 0 0 23 1,894	59,740 2,483 0 0 0 0 0	8,975 544 0 15,959 24 734 0 875	33,541 0 0 0 0 0 0 0	7,642 899 30,021 0 0 1,611 1,238 595
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	13,022 10,667 207 12,182 1,696 7,429 448 0	43,211 9,041 11 121 61 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0	59,740 2,483 0 0 0 0 0 0 0 2,764	8,975 544 0 15,959 24 734 0 875	33,541 0 0 0 0 0 0 0 0	7,642 899 30,021 0 0 1,611 1,238 595
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON HOSKINS GURNEY	13,022 10,667 207 12,182 1,696 7,429 448 0 0	43,211 9,041 11 121 61 0 0 0 274 2,817	13,699 15,484 22,993 0 0 23 1,894 0	59,740 2,483 0 0 0 0 0 0 0 2,764 42	8,975 544 0 15,959 24 734 0 875 0	33,541 0 0 0 0 0 0 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON HOSKINS GURNEY TABUBIL	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0	43,211 9,041 11 121 61 0 0 274 2,817	13,699 15,484 22,993 0 0 23 1,894 0 0	59,740 2,483 0 0 0 0 0 0 2,764 42 0	8,975 544 0 15,959 24 734 0 875 0	33,541 0 0 0 0 0 0 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 0 893	43,211 9,041 11 121 61 0 0 274 2,817	13,699 15,484 22,993 0 0 23 1,894 0 0 0	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0	8,975 544 0 15,959 24 734 0 875 0	33,541 0 0 0 0 0 0 0 0 0 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 0 893 0 591	43,211 9,041 11 121 61 0 0 274 2,817 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0	8,975 544 0 15,959 24 734 0 875 0 0 0	33,541 0 0 0 0 0 0 0 0 0 0 1,196 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 0 893 0 591	43,211 9,041 11 121 61 0 0 0 274 2,817 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 0 29 0 1,063	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844	33,541 0 0 0 0 0 0 0 0 0 0 1,196 0 0 326	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 893 0 591 107 18,825	43,211 9,041 11 121 61 0 0 0 274 2,817 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063	59,740 2,483 0 0 0 0 0 2,764 42 0 0 0 83 0	8,975 544 0 15,959 24 734 0 875 0 0 0 1,735 0 8,844 501	33,541 0 0 0 0 0 0 0 0 0 0 1,196 0 0 326	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 893 0 591 107 18,825	43,211 9,041 11 121 61 0 0 0 274 2,817 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0	59,740 2,483 0 0 0 0 0 2,764 42 0 0 0 83 0	8,975 544 0 15,959 24 734 0 875 0 0 0 1,735 0 8,844 501	33,541 0 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 893 0 591 107 18,825 0 1,298	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 0 29 0 1,063 0	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0 0 83 0 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0	33,541 0 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 893 0 591 107 18,825 0 1,298	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0 0 26	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0 0 0 0 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0 0 3,145	33,541 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0 0 3,149
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 893 0 591 107 18,825 0 1,298 91	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0 0 26	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0 0 0 0 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0 0 3,145 69	33,541 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0 0 6,229 27	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0 0 3,149
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	13,022 10,667 207 12,182 1,696 7,429 448 0 0 0 893 0 591 107 18,825 0 1,298 91	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0 0 26	59,740 2,483 0 0 0 0 0 2,764 42 0 0 0 83 0 0 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0 3,145 69 0	33,541 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0 0 6,229 27 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	13,022 10,667 207 12,182 1,696 7,429 448 0 0 893 0 591 107 18,825 0 1,298 91 0	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0 0 83 0 0 0 0 12,279 3,457	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0 3,145 69 0	33,541 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0 0 6,229 27 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0 0 0 0 0 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA BUKA	13,022 10,667 207 12,182 1,696 7,429 448 0 0 893 0 591 107 18,825 0 1,298 91 0	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0 0 0 0 0 0 0 0 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	59,740 2,483 0 0 0 0 0 2,764 42 0 0 0 0 83 0 0 0 0 0 0 12,279 3,457 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0 3,145 69 0	33,541 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0 0 6,229 27 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0 0 0 0 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	13,022 10,667 207 12,182 1,696 7,429 448 0 0 893 0 591 107 18,825 0 1,298 91 0	43,211 9,041 11 121 61 0 0 274 2,817 0 0 0 0 0 0 0 0 0 0 0 0 0	13,699 15,484 22,993 0 0 23 1,894 0 0 29 0 1,063 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	59,740 2,483 0 0 0 0 0 0 2,764 42 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8,975 544 0 15,959 24 734 0 875 0 0 1,735 0 8,844 501 0 3,145 69 0	33,541 0 0 0 0 0 0 0 0 0 1,196 0 0 326 0 0 6,229 27 0 0	7,642 899 30,021 0 0 1,611 1,238 595 0 680 0 0 0 0 0 0 0 0 0 0 0 0 0

### OD Matrix of Air Passengers for Key Airports (2010)

,	hout)	•		•				e Angle y
	Destination	n 15	16	17	18	19	20	21
Origi	n .							en and a second
1.	PORT.M	31,625	11,977	33,493		3,719	13,171	9,281
2.	LAE	133	0	0	6,311	114	109	0
3.	RABAUL	0	0	. 0	11,008	0	0	0
4.	MT. HAGEN	18,321	8,707	42	0	2,300	2,310	0
5,	GOROKA	0	403	3,694	. 0	15	0	0
6.	MADANG	647	0	3,416	5,235	75	0	0
7.	KIETA	0	0	31	1,622	0	0	87
. 8.	WEWAK	0	17,512	45	1,279	149		0
9.	POPON.	0	0	54	0	0	0	. 0
10.	HOSKINS	0	0	0	0.	0	0,	0
11.	GURNEY	0	0	.0	0	. 0	0	14513
12.	TABUBIL	8,417	1,163	0	0	4,089	129	0
13.	DARU	320	0	0	0	6,047	0	0
14.	KAVIENG	0	0	0	3,008	0	0.	0
15.	TARI	0	0	0	0	13	17,983	0
16.	VANIMO	0	0	0	,0	101	0.	0
17.	CHIMBU	0	0	0	0	0	0	0
18.	MANUS	0	0	0	0	0	0	
19.	KIUNGA	260	27	0	0	0	10	0
20.	MENDI	15,908	0	0	23	8	÷0 .	0
21.	MISIMA	0	0	0	0	0	0	0
22.	LOUSUIA	0	0	0,	0		, , Q. ,	0
23. 24.	BUKA	75,633	0. 39,788	0 40,775	0 40,121	16,631	33,713	0 23,882
24.	TOTAL	13,033	39,700	40,773	40,121	10,051	33,713	23,002
				•				•
	Destination							
^	Desimanor	า 22	. 23	24			100	
Origi		n 22	23	24	:		Jan 194	
Origii 1.		n 22 3,590	23	24 772,690				
	n		0		e Political Marie			
1.	n PORT.M	3,590	0	772,690 335,617 224,414				
1. 2. 3. 4.	n PORT.M LAE RABAUL MT. HAGEN	3,590 0 0 0	0	772,690 335,617 224,414 163,229				
1. 2. 3. 4. 5.	n PORT.M LAE RABAUL MT. HAGEN GOROKA	3,590 0 0	0 0 250	772,690 335,617 224,414 163,229 129,983				
1. 2. 3. 4. 5. 6.	n PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	3,590 0 0 0 0 0	0 0 250 0	772,690 335,617 224,414 163,229 129,983 87,448				
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	3,590 0 0 0 0 0 0	0 0 250 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970				
1. 2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	3,590 0 0 0 0 0 0 9	0 0 250 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455				
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	3,590 0 0 0 0 0 0 9 0	0 0 250 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537				
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	3,590 0 0 0 0 0 0 9 0 13	0 0 250 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211				
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	3,590 0 0 0 0 0 9 0 13 0 3,687	0 0 250 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847				
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	3,590 0 0 0 0 0 9 0 13 0 3,687	0 0 250 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405				
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	3,590 0 0 0 0 0 9 0 13 0 3,687 0	0 0 250 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320				
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	3,590 0 0 0 0 0 9 0 13 0 3,687 0	0 0 250 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835				
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	3,590 0 0 0 0 0 0 9 0 13 0 3,687 0 0	0 0 250 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634				
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	3,590 0 0 0 0 0 0 9 0 13 0 3,687 0 0	0 0 250 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788			(A)	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11, 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	3,590 0 0 0 0 0 0 9 0 13 0 3,687 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776			(1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	3,590 0 0 0 0 0 0 9 0 13 0 3,687 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121			(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	3,590 0 0 0 0 0 9 0 13 0 3,687 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121 16,631			(A)	,一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	3,590 0 0 0 0 0 9 0 13 0 3,687 0 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121 16,631 33,714			(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	3,590 0 0 0 0 0 9 0 13 0 3,687 0 0 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121 16,631 33,714 23,881			(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	3,590 0 0 0 0 0 9 0 13 0 3,687 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121 16,631 33,714 23,881 7,320			<ul><li>(2) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4</li></ul>	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA BUKA	3,590 0 0 0 0 0 0 9 0 13 0 3,687 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121 16,631 33,714 23,881 7,320 250			(A)	《《《··································
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	3,590 0 0 0 0 0 9 0 13 0 3,687 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	772,690 335,617 224,414 163,229 129,983 87,448 95,970 67,455 55,537 55,211 70,847 41,405 41,320 45,835 75,634 39,788 40,776 40,121 16,631 33,714 23,881 7,320				

Attachment 8-6 Air Cargo in PNG (1)

Airports	1983	1984	1985	1986	1987	8861	1989	Component Ratio (%)	Annual Growth Rate (%)
International		والمساورة							
Chartered	1,679	2,510	2,467	2,920	2,817	3,359	3,557	1.7	13.3
Scheduled	20	. <del>774</del>	m		<b>,</b>	1	; :	*	•
Sub total	1,699	2,511	2,470	2,920	2,817	3,359	3,558	11.7	13.1
			·		***				
Domestic	t						4		:
Por Moresby	4,884	10,028	11,334	12,038	12,150	9,760	9,189	30.2	bare front head
Nadzab (Lae)	5,689	4,727	3,974	5,173	4,642	4,680	4,227	13.9	4.8
Rabaul	756	1,169	1,028	1,243	1,250	1,404	1,455	8.4	11.5
Mt. Hagen	1,165	1,058	903	1,395	1,472	1,999	1,856	6.1	8.0
Goroka	1,369	1,537	1,706	1,195	1,154	1,515	1,404	4,6	0.4
Madang	1,445	1,487	1,548	1,511	1,478	1,260	1,122	3.7	4.2
Kieta	801	822	726	99/	836	926	808	2.7	0.2
Wewak	372	741	801	009	633	1,003	978	3.2	17.5
Popondetta	835	<i>LL</i> 9	552	476	451	499	413	1,4	pood pood pood \$
Hoskins	321	360	402	288	344	425	432	4	5.1

Note: Component ratios were calculated for the year of 1989.

Air Cargo in PNG (2)

Airports         1983         1984         1985         1986         11           Curney         227         245         264         318         1.240         1,455         1,000           Tabubil         138         1,240         1,455         1,000	1007		Сотро	
227     245     264     318       138     1,240     1,455     1,000       298     251     214     228       124     127     131     142       75     93     63     85       509     854     1,266     734       159     178     200     178       1,117     1,283     1,973     377       12     26     17     19       19     17     16     15       19     17     16     15       19     17     16     15       53     97     203     91		1988	1989 Ratio (%)	o Growth Rate (%)
138       1,240       1,455       1,000         298       251       214       228         124       127       131       142         75       93       63       85         509       854       1,266       734         159       178       200       178         72       66       61       89         1,117       1,283       1,973       377         232       231       231       208         19       17       19         19       17       16       15         19       17       16       15         53       97       203       91	8 319	363	418 1.4	10.7
298     251     214     228       124     127     131     142       75     93     63     85       509     854     1,266     734       159     178     200     178       72     66     61     89       72     66     61     89       1,117     1,283     1,973     377       12     26     17     19       19     17     16     15       19     17     16     15       53     97     203     91	0 931	1,374	1,634 5.4	51.0
124     127     131     142       75     93     63     85       509     854     1,266     734       159     178     200     178       72     66     61     89       1,117     1,283     1,973     377       232     231     231     208       12     26     17     19       19     17     16     15       53     97     203     91	.8 215	221	284 0.9	5.5-
75     93     63     85       509     854     1,266     734       159     178     200     178       72     66     61     89       1,117     1,283     1,973     377       232     231     231     208       12     26     17     19       19     17     16     15       53     97     203     91	.2 143	158	224 0.7	7
509     854     1,266     7       159     178     200     1       72     66     61     1       1,117     1,283     1,973     3       232     231     231     2       12     26     17     16       19     17     16       53     97     203	5	280	124 0.4	4.8.7
159 178 200 1 72 66 61 1,117 1,283 1,973 3 232 231 231 2 12 26 17 16 19 17 16	4 565	618	814 2.7	7 8.1
72 66 61 1,117 1,283 1,973 3 232 231 231 2 12 26 17 16 53 97 203	8 220	419	198 0.7	7 3.7
1,117 1,283 1,973 3 232 231 231 2 12 26 17 16 19 17 16 53 97 203	62 6	110	126 0.4	8.0
232 231 231 2 12 26 17 16 19 17 16 53 97 203	7 368	909	682 2.2	2.7.9
12 26 17 19 17 16 53 97 203	204	877	293 1.0	0 -4.0
a 17 16 53 53 97 203	61 6	119	153	5 52.8
53	13	38	32 0.1	1.6
	11 84	0	0.0	
Sub total 20,672 27,314 29,068 28,169 27	9 27,680	28,953	26,867 88.3	3 4.5
Total 22,371 29,825 31,538 31,089 30	30,497	32,312	30,425 100.0	0 5.3

Attachment 8-7 OD Matrix of Air Passengers for Key Airports (1995)

	1 111110111111111	t 8-7-OD	1.1041111 01 1	in I doubling	,0.0 .0	J p	, ,	
(With)						<u></u>		_+
1 1 2	Destination	1	2	3 ·	4	5	6	7
Origin		•		1.				
	PORT.M	0	76,181	35,324	44,179	29,947	14,953	22,126
2.	LAE	75,310	0	19,701	13,576	7,914	7,350	2,069
3.	RABAUL	38,137	18,680	0	0	0	1,390	20,069
4.	MT. HAGEN	45,008	13,239	16	0	6,558	6,963	0
5.	GOROKA	31,680	8,068	0	6,346	0	5,141	0
6.	MADANG	15,722	7,473	972	5,866	5,394	0	8
7.	KIETA	22,248	1,570	19,407	0	21	100	0
	WEWAK	8,932	6,345	389	6,025	1,129	5,792	0
9.	POPON.	19,669	4,479	0	0	0	0	0
10.	HOSKINS	6,112	5,527	12,071	0	0	0	896
11.	GURNEY	19,096	938	0	0	Ó	0	0
12.	TABUBIL	5,366	236	9	6,496	41	409	0
13.	DARU	12,170		0	0	0	0	0
14.	KAVIENG	2,302	988	10,876	Ŏ	10	771	138
15.	TARI	8018	0	0	4874	15	70	0
	VANIMO	4,034	. 0	0	2,222	92	25	0
17.	CHIMBU	11,143	Ŏ.	.0.	3	2,266	1,069	0
18.	MANUS	3,607	1,790	5,171	0	0	1,997	119
19.	KIUNGA	3,086	91	0	1,347	ŏ	70	0
20.	MENDI	6,818	2	22	1,064	41	6	0
21.	MISIMA	3,748	0	0	0	0	0	11 V 0
22.	LOUSUIA	2,081	Ö	0	0	0	0	0
23.	BUKA	2,081	0	248	0	.0	0	0
	TOTAL	344,288	145,606	104,206	91,997	53,428	46,106	45,425
Origin	Destination	8	9	10	11	12	131	14
Origin 1								
1.	PORT.M	9,197	20,389	6,708	19,968	5,732	12,230	2,905
1. 2.	PORT.M LAE	9,197 6,224	20,389 3,579	6,708 6,347	19,968 841		12,230	2,905 289
1. 2. 3.	PORT.M LAE RABAUL	9,197 6,224 137	20,389 3,579 5	6,708 6,347 10,697	19,968 841 0	5,732 288 0	12,230	2,905
1. 2. 3. 4.	PORT.M LAE RABAUL MT. HAGEN	9,197 6,224 137 5,444	20,389 3,579 5 38	6,708 6,347 10,697 0	19,968 841 0 0	5,732 288 0 6,572	12,230 0 0 0	2,905 289 10,944
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	9,197 6,224 137 5,444 940	20,389 3,579 5 38 23	6,708 6,347 10,697 0	19,968 841 0 0	5,732 288 0 6,572 12	12,230 0 0 0 0	2,905 289 10,944 0
1. 2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	9,197 6,224 137 5,444 940 5,869	20,389 3,579 5 38 23 0	6,708 6,347 10,697 0 0	19,968 841 0 0	5,732 288 0 6,572	12,230 0 0 0	2,905 289 10,944 0 0
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	9,197 6,224 137 5,444 940 5,869 281	20,389 3,579 5 38 23 0	6,708 6,347 10,697 0 0 12 820	19,968 841 0 0 0 0	5,732 288 0 6,572 12 518 0	12,230 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	9,197 6,224 137 5,444 940 5,869 281	20,389 3,579 5 38 23 0 0	6,708 6,347 10,697 0 0 12 820	19,968 841 0 0 0 0 0	5,732 288 0 6,572 12 518 0 719	12,230 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	9,197 6,224 137 5,444 940 5,869 281 0	20,389 3,579 5 38 23 0 0 0	6,708 6,347 10,697 0 0 12 820 0	19,968 841 0 0 0 0 0 0 0 0	5,732 288 0 6,572 12 518 0 719	12,230 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	9,197 6,224 137 5,444 940 5,869 281 0	20,389 3,579 5 38 23 0 0 0	6,708 6,347 10,697 0 12 820 0 0	19,968 841 0 0 0 0 0 0 0 952 15	5,732 288 0 6,572 12 518 0 719 0	12,230 0 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	9,197 6,224 137 5,444 940 5,869 281 0 0	20,389 3,579 5 38 23 0 0 0 0 113 975	6,708 6,347 10,697 0 12 820 0 0	19,968 841 0 0 0 0 0 0 952 15	5,732 288 0 6,572 12 518 0 719 0	12,230 0 0 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	9,197 6,224 137 5,444 940 5,869 281 0 0 0	20,389 3,579 5 38 23 0 0 0 113 975	6,708 6,347 10,697 0 0 12 820 0 0 11	19,968 841 0 0 0 0 0 0 952 15 0	5,732 288 0 6,572 12 518 0 719 0 0	12,230 0 0 0 0 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	9,197 6,224 137 5,444 940 5,869 281 0 0 0 728	20,389 3,579 5 38 23 0 0 0 0 113 975 0	6,708 6,347 10,697 0 0 12 820 0 0 11	19,968 841 0 0 0 0 0 0 952 15 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0	12,230 0 0 0 0 0 0 0 0 0 0 0 0 484 0	2,905 289 10,944 0 0 652 414 274 0 226 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	9,197 6,224 137 5,444 940 5,869 281 0 0 0 728 0 273	20,389 3,579 5 38 23 0 0 0 0 113 975 0	6,708 6,347 10,697 0 0 12 820 0 0 0 11 0 0 356	19,968 841 0 0 0 0 0 0 952 15 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715	12,230 0 0 0 0 0 0 0 0 0 0 0 484 0	2,905 289 10,944 0 0 652 414 274 0 226 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	9,197 6,224 137 5,444 940 5,869 281 0 0 0 728 0 273 38	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0	6,708 6,347 10,697 0 0 12 820 0 0 11 0 356	19,968 841 0 0 0 0 0 0 952 15 0 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940	12,230 0 0 0 0 0 0 0 0 0 0 484 0 0	2,905 289 10,944 0 0 652 414 274 0 226 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0	6,708 6,347 10,697 0 0 12 820 0 0 11 0 0 356 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202	12,230 0 0 0 0 0 0 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 11 0 0 356 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0	12,230 0 0 0 0 0 0 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253 0 576	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 11 0 0 356 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0 0	12,230 0 0 0 0 0 0 0 0 0 0 0 484 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253 0 576 95	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 11 0 0 356 0 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0 0 2,910	12,230 0 0 0 0 0 0 0 0 0 484 0 0 0 0 0 0 0 0 0 0 0 0 0	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0 0 0 828 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	9,197 6,224 137 5,444 940 5,869 281 0 0 0 728 0 273 38 8,253 0 576 95	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 11 0 356 0 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0 0 2,910 37	12,230 0 0 0 0 0 0 0 0 0 484 0 0 0 0 0 0 3,077	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0 0 0 828 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253 0 576 95 0	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 0 11 0 356 0 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0 0 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0 0 2,910 37 0	12,230 0 0 0 0 0 0 0 0 0 484 0 0 70 0 0 3,077 9	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0 0 828 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253 0 576 95 0	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 0 11 0 0 356 0 0 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0 0 0 0 3,085 1,339	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0 0 2,910 37 0	12,230 0 0 0 0 0 0 0 0 0 484 0 0 70 0 0 0 3,077 9	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0 0 0 828 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	9,197 6,224 137 5,444 940 5,869 281 0 0 728 0 273 38 8,253 0 576 95 0	20,389 3,579 5 38 23 0 0 0 0 113 975 0 0 0 0 0	6,708 6,347 10,697 0 0 12 820 0 0 0 11 0 356 0 0	19,968 841 0 0 0 0 0 0 952 15 0 0 0 24 0 0 0 0	5,732 288 0 6,572 12 518 0 719 0 0 0 715 0 2,940 202 0 0 2,910 37 0 0	12,230 0 0 0 0 0 0 0 0 0 484 0 0 70 0 0 3,077 9	2,905 289 10,944 0 0 652 414 274 0 226 0 0 0 0 828 0 0

### OD Matrix of Air Passengers for Key Airports (1995)

6,840

(With)	Destination	15	16	17	18	19	20
Origi	A CONTRACTOR OF THE CONTRACTOR						
1.	PORT.M	9,517	4,350	12,031	4,288	2,828	6,421
2,	LAE	34	0	0	1,969	72	54
3.	RABAUL	0	0	0	3,896	. 0	0
4.	MT. HAGEN	4,068	2,215	11	0	1.096	770
5.	GOROKA	0	120	1,089	0	9	0
6.	MADANG	202	0	1,304	2,048	65	0
7.	KIETA	0	0	10	526	0	0
8.	WEWAK	0	7,712	20	568	150	0
9.	POPON.	0:	0	17	0	0	. 0:
10.	HOSKINS	0	0	0	0	0	0
11.	GURNEY	0	0	0	0	0	0
12.	TABUBIL	2,739	467	0	0	3,601	70
13.	DARU	69	0	ō	0 -	2,916	0
14.	KAVIENG	0	0	0	795	0	
15.	TARI	0	0	Ö	0	5	5,073
16.	VANIMO	0	Ŏ	0	0	48	
17.	CHIMBU	i i o	0	Ŏ	Ŏ	0	
18.	MANUS	0	0.	0	. 0	ő	Ö
19.	KIUNGA	. 99	13	ő	0	0	7
20.	MENDI	4,375	0	ő	. 8	5	0
	MISIMA	4,373	0	0	0	0	· .
21.		0	0	0	0	0	0
22.	LOUSUIA	0.	0	. 0	0	0	0
23. 24.	BUKA TOTAL	21,102	14,877	14,481	14,097	10,794	12,385
Origir	Destination 1	22	23	24			and the second
1.	PORT.M	1,950	0	344,289			
2.	LAE	0	0	145,606			
3.	RABAUL	ō	250	104,206			140
4.	MT. HAGEN	0	0	91,997			15 - 38
5.	GOROKA	0	0	53,427	-		
6.	MADANG	Ŏ	Ö	46,106			
7.	KIETA	9 :	Ö	45,425	•	•	
8.	WEWAK	0	0	38,055			
9.	POPON.	4	ŏ	25,122			
10.	HOSKINS	· o	. 0	24,959			and the second
11.	GURNEY	1,454	ŏ	26,224		1 3	
12.	TABUBIL	0	ő	20,645			
13.	DARU	ő	0	15,870			
14.	KAVIENG	Ö	0	16,533			
15.	TARI	0	0	21,102			3 4 2 7
16.	VANIMO	0	0	14,877	+ 4		100
10. 17.	CHIMBU	0	0	14,482			
			0				
18.	MANUS	0	0	14,097 10,794			
19.	KIUNGA	. 0				e Grand	Access
20.	MENDI	-	0	12,385			
21.	MISIMA	6	0 /	6,839			
22.	LOUSUIA	0	0	3,420	:		- 1 - No. (4)
23. 24	BUKA	0 3 420	0 250	250 1 096 710			

1,096,710

3,420

24.

TOTAL

### OD Matrix of Air Passengers for Key Airports (2000)

(With)		entition to		_				
41.1	Destination	1.	2	3	4	5	6	7
Origin			:					
1	PORT.M	0	96,161	39,970	61,048	38,165	16,765	27,732
	LAE	95,290	0	25,089	21,000	11,336	9,316	2,922
3.	RABAUL	43,424	23,878	0	0 -	0	1,585	25,490
4	MT. HAGEN	62,437	20,509	22	0	10,219	9,729	0
5.	GOROKA	40,650	11,606	0	9,916	0	6,617	0
6.	MADANG	17,724	9,500	1,108	8,206	6,931	0	- 11
7	KIETA	27,915	2,214	24,526	. 0	31	125	0
8.	WEWAK	9,518	7,642	419	8,013	1,376	6,152	0.
9.	POPON.	24,742	6,325	0	0 .	0	0	0
10.	HOSKINS	7,629	7,754	15,172	0	0	0	1,249
11.	GURNEY	25,630	1,408	0	0 ,	.0	: 0	. 0
12.	TABUBIL	5,936	295	. 10	8,917	51	452	0
13.	DARU	17007	. 0	0	0	. 0	0	0
14,	KAVIENG	3,207	1,539	15,202	. 0 .	15	1,080	215.
15.	TARI	12,215	. 0	0	8,751	25	108	. 0
16.	VANIMO	5614	. 0	0 ,	3726	144	36	0
17.	СНІМВИ	15,675	0	0	5	3,581	1,514	0
18.	MANUS	5,053	2,802	7,267	. 0	0	2,817	186
19.	KIUNGA	3,227	107	. 0	1,756	0	73	0,
20.	MENDI	8,487	3	27	1,609	. 57	7	0
21.	MISIMA	5,548	0	0	Ó	0	0	0
22.	LOUSUIA	2,466	0	0	0	0	0	0
23.	BUKA	, . 2	0	248	. 0	0.	0	0
24.	TOTAL	439,397	191,742	129,060	132,948	71,933	56,375	57,805
	1 1 1							
							_:_	
	Destination	8	9	10	11	12	13	14
Origin	e i i i i i i i i i i i i i i i i i i i							· · · · · · · · · · · · · · · · · · ·
1.	PORT,M	9,772	25,730	8,313	26,936	6,310	17,127	4,042
1. 2.	PORT.M LAE	9,772 7,492	25,730 5,082	8,313 8,861	26,936 - 1,272	6,310 358	17,127	4,042 450
1. 2. 3.	PORT.M LAE RABAUL	9,772 7,492 148	25,730 5,082 6	8,313 8,861 13,432	26,936 1,272 0	6,310 358 0	17,127 0 0	4,042 450 15,374
1. 2. 3. 4.	PORT.M LAE RABAUL MT. HAGEN	9,772 7,492 148 7,248	25,730 5,082 6 59	8,313 8,861 13,432 0	26,936 1,272 0	6,310 358 0 9,016	17,127 0 0 0	4,042 450 15,374 0
1. 2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	9,772 7,492 148 7,248 1,150	25,730 5,082 6 59 33	8,313 8,861 13,432 0	26,936 1,272 0 0	6,310 358 0 9,016	17,127 0 0 0 0	4,042 450 15,374 0
1. 2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	9,772 7,492 148 7,248 1,150 6,250	25,730 5,082 6 59 33 0	8,313 8,861 13,432 0 0	26,936 1,272 0 0 0	6,310 358 0 9,016 15 573	17,127 0 0 0 0	4,042 450 15,374 0 0 918
1. 2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA	9,772 7,492 148 7,248 1,150 6,250 334	25,730 5,082 6 59 33 0	8,313 8,861 13,432 0 0 15	26,936 1,272 0 0 0 0	6,310 358 0 9,016 15 573	17,127 0 0 0 0 0	4,042 450 15,374 0 0 918 643
1. 2, 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	9,772 7,492 148 7,248 1,150 6,250 334	25,730 5,082 6 59 33 0 0	8,313 8,861 13,432 0 0 15 1,137	26,936 1,272 0 0 0 0 0	6,310 358 0 9,016 15 573 0 751	17,127 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367
1. 2, 3. 4. 5. 6. 7, 8, 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	9,772 7,492 148 7,248 1,150 6,250 334 0	25,730 5,082 6 59 33 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0	26,936 1,272 0 0 0 0 0 0	6,310 358 0 9,016 15 573 0 751	17,127 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	9,772 7,492 148 7,248 1,150 6,250 334 0 0	25,730 5,082 6 59 33 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0	26,936 1,272 0 0 0 0 0 0 0 1,434 22	6,310 358 0 9,016 15 573 0 751 0	17,127 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367 0 349
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	9,772 7,492 148 7,248 1,150 6,250 334 0 0	25,730 5,082 6 59 33 0 0 0 158 1,467	8,313 8,861 13,432 0 0 15 1,137 0 0 0	26,936 1,272 0 0 0 0 0 0 1,434 22	6,310 358 0 9,016 15 573 0 751 0	17,127 0 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367 0 349
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0	25,730 5,082 6 59 33 0 0 0 158 1,467	8,313 8,861 13,432 0 0 15 1,137 0 0 0	26,936 1,272 0 0 0 0 0 0 1,434 22 0	6,310 358 0 9,016 15 573 0 751 0	17,127 0 0 0 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367 0 349 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0	25,730 5,082 6 59 33 0 0 0 158 1,467 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0	6,310 358 0 9,016 15 573 0 751 0 0	17,127 0 0 0 0 0 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367 0 349 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365	25,730 5,082 6 59 33 0 0 0 0 158 1,467 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0	6,310 358 0 9,016 15 573 0 751 0 0 0 986	17,127 0 0 0 0 0 0 0 0 0 0 672 0	4,042 450 15,374 0 0 918 643 367 0 349 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56	25,730 5,082 6 59 33 0 0 0 0 158 1,467 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 546	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0 0	6,310 358 0 9,016 15 573 0 751 0 0 986 0 4,449	17,127 0 0 0 0 0 0 0 0 0 672 0 0	4,042 450 15,374 0 0 918 643 367 0 349 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365	25,730 5,082 6 59 33 0 0 0 0 158 1,467 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 546	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0	6,310 358 0 9,016 15 573 0 751 0 0 0 986 0 4,449 277	17,127 0 0 0 0 0 0 0 0 0 0 672 0 0 129	4,042 450 15,374 0 0 918 643 367 0 349 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56 10,998 0	25,730 5,082 6 59 33 0 0 0 0 158 1,467 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0 0 0 0	6,310 358 0 9,016 15 573 0 751 0 0 0 986 0 4,449 277	17,127 0 0 0 0 0 0 0 0 0 0 672 0 0 129 0	4,042 450 15,374 0 0 918 643 367 0 349 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56 10,998 0 774	25,730 5,082 6 59 33 0 0 0 158 1,467 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0 0	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0 0 39 0 0	6,310 358 0 9,016 15 573 0 751 0 0 0 986 0 4,449 277 0	17,127 0 0 0 0 0 0 0 0 0 0 0 0 0 0 129 0	4,042 450 15,374 0 0 918 643 367 0 349 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56 10,998 0 774	25,730 5,082 6 59 33 0 0 0 158 1,467 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0	26,936 1,272 0 0 0 0 0 0 1,434 22 0 0 0 39 0 0	6,310 358 0 9,016 15 573 0 751 0 0 0 986 0 4,449 277 0 0 2,979	17,127 0 0 0 0 0 0 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367 0 349 0 0 0 0 0 1,410
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56 10,998 0 774 94	25,730 5,082 6 59 33 0 0 0 158 1,467 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0 0	26,936 1,272 0 0 0 0 0 1,434 22 0 0 0 39 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,310 358 0 9,016 15 573 0 751 0 0 986 0 4,449 277 0 0 2,979 45	17,127 0 0 0 0 0 0 0 0 0 0 0 0 0	4,042 450 15,374 0 0 918 643 367 0 0 0 0 0 0 0 1,410
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56 10,998 0 774	25,730 5,082 6 59 33 0 0 0 158 1,467 0 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0 0	26,936 1,272 0 0 0 0 0 1,434 22 0 0 0 39 0 0 0 0 5,320	6,310 358 0 9,016 15 573 0 751 0 0 0 986 0 4,449 277 0 0 2,979	17,127 0 0 0 0 0 0 0 0 0 672 0 0 129 0 0 4,050 13	4,042 450 15,374 0 0 918 643 367 0 0 0 0 0 0 0 1,410
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	9,772 7,492 148 7,248 1,150 6,250 334 0 0 761 0 365 56 10,998 0 774 94	25,730 5,082 6 59 33 0 0 0 0 158 1,467 0 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0 0	26,936 1,272 0 0 0 0 0 1,434 22 0 0 0 39 0 0 0 5,320 1,908	6,310 358 0 9,016 15 573 0 751 0 0 986 0 4,449 277 0 0 2,979 45 0	17,127 0 0 0 0 0 0 0 0 0 672 0 0 129 0 0 4,050 13 0	4,042 450 15,374 0 0 918 643 367 0 0 0 0 0 0 0 0 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA BUKA	9,772 7,492 148 7,248 1,150 6,250 334 0 0 0 761 0 365 56 10,998 0 774 94 0	25,730 5,082 6 59 33 0 0 0 158 1,467 0 0 0 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0 0 0	26,936 1,272 0 0 0 0 0 1,434 22 0 0 0 39 0 0 0 5,320 1,908	6,310 358 0 9,016 15 573 0 751 0 0 986 0 4,449 277 0 0 2,979 45 0	17,127 0 0 0 0 0 0 0 0 0 672 0 0 129 0 0 4,050 13 0 0	4,042 450 15,374 0 0 918 643 367 0 0 0 0 0 0 0 1,410 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	9,772 7,492 148 7,248 1,150 6,250 334 0 0 761 0 365 56 10,998 0 774 94	25,730 5,082 6 59 33 0 0 0 158 1,467 0 0 0 0 0 0	8,313 8,861 13,432 0 0 15 1,137 0 0 0 16 0 0 546 0 0	26,936 1,272 0 0 0 0 0 1,434 22 0 0 0 39 0 0 0 5,320 1,908	6,310 358 0 9,016 15 573 0 751 0 0 986 0 4,449 277 0 0 2,979 45 0	17,127 0 0 0 0 0 0 0 0 0 672 0 0 129 0 0 4,050 13 0	4,042 450 15,374 0 0 918 643 367 0 0 0 0 0 0 0 0 0 0 0 0

### OD Matrix of Air Passengers for Key Airports (2000)

21

4,477

0

0 6360 Ð

> 0 0 0

> 0

10,878

	0	D Matrix	of Air Pas	sengers for	Key Airpo	ons (2000	<i>)</i>
(With)	Destination	15	16	17	18	19	20
Origin					en e		
1.	PORT.M	14,579	6,030	17,069	5,965	2,991	7,915
2.	LAE	58	0	0	3,068	86	62
3.	RABAUL	0	. 0	0	5,471	0	0
4.	MT. HAGEN	7,367	3,714	18	0	1,451	1,158
5.	GOROKA	0	188	1,747	0	11	0
6.	MADANG	315	0	1,872	2,884	68	0
7.	KIETA	0	0	16	817	0	0
8.	WEWAK	0	10,267	27	760	150	0
9.	POPON.	0	0 -	26	0	0	0
10.	HOSKINS	. 0	0	0	0	0	0
11.	GURNEY	0	. 0	. 0	0	0	0
12.	TABUBIL	4,187	642	0	0	3,751	86
13.	DARU	127	0	Ŏ	Ó	3,871	0
14.	KAVIENG	0	· · o	0	1,345	0	Ŏ
15.	TARI	0	0	. 0	0	7	8,272
16.	VANIMO	0	o o	0	Ŏ	63	0,2,2
10. 17.	CHIMBU	0	0	. 0	. 0	0	0
	MANUS	0	0		0	0	0.
18.				0		No. of the Control of	
19.	KIUNGA	145	17	0	0	0	8
20.	MENDI	7,234	0	0	12	6	0
21.	MISIMA	0	0	0	0	0	0
22.	LOUSUIA	. 0	0	0	0	.0	0
23.	BUKA	0	0	0	0	0	0
24.	TOTAL	34,012	20,858	20,775	20,322	12,455	17,500
	•					•	
	Destination	22	23	24			45917574
Origin			25	; <b></b> *	-		
1.	PORT,M	2,299	0	439,397			
2.	LAE	0	ő	191,742	1983	1 1	
3.	RABAUL	0	250	129,059			
4.	MT. HAGEN	0	0	132,948			
5.	GOROKA	0	0	71,932			1:
<i>5.</i> 6.	MADANG	0	0			3 °	
		6	0	56,375 57,804		and a	
7.	KIETA		0				11
8.	WEWAK	0		45,441	• •	-	.:
9.	POPON.	8	0	32,536			*. *
10.	HOSKINS	0	0	32,333	5	-	
11.	GURNEY	2,051	0	36,931			
12,	TABUBIL	0	0	25,761			
13.	DARU	0	0	21,991			
14.	KAVIENG	0	0	23,553	-	1	
15.	TARI	Ô	0	34,013		tali, kao a	
16.	VANIMO	0	0	20,858			
17.	CHIMBU	0	0	20,775	, ,	1.	
18.	MANUS	0	0	20,322		<i>.</i>	
19.	KIUNGA	0	0	12,455			£ +
20.	MENDI	0	0	17,501			
21.	MISIMA	10	· o	10,878		:	
22.	LOUSUIA	0	ů i	4,374		1, -, -, -, -, -, -, -, -, -, -, -, -, -,	
22.	RIIKA	ñ	ñ	250	+		

1,439,230

250

0

250

0

4,374

23.

24.

BUKA

TOTAL

### OD Matrix of Air Passengers for Key Airports (2005)

(With)							•	
	Destination	1	2	3.	4	5	. 6	7
Origin								
1.	PORT.M	0	123,239	51,268	84,560	49,674	19,659	34,462
2.	LAE	122,234	0	34,092	30,709	15,623	11,628	3,855
3.	RABAUL	55,854	32,505	0	0	0	1,987	33,734
4	MT. HAGEN	86,712	30,040	32	0	15,142	13,250	0
5.	GOROKA	53,145	16,050	0	14,716	0	8,433	. 0
6.	MADANG	20,865	11,891	1,390	11,186	8,827	0	13
7	KIETA	34,726	2,922	32,402	0	41	151	0
8.	WEWAK	10,676	9,234	503	10,476	1,675	6,655	0
9.	POPON.	31,719	8,587	0	0	0	0	0
10.	HOSKINS	9,510	10,248	20,070	0	0	0	1,602
	GURNEY	34,540	2,005	0	0	0	0	0
12.	TABUBIL	6,905	365	12	12,003	65	509	. 0
13.	DARU	23748	0	0	0	0	0	0
14.	KAVIENG	4,301	2,181	21,513	0	22	1,419	297
15.	TARI	17,991		0	14,230	40	157	0
16.	VANIMO	7859	0	0	5861	216	49	. 0
17.	CHIMBU	21,867	Ō	0	9	5,330	2,070	. 0
18.	MANUS	6,948	4,065	10,525	Ó	0	3,798	264
19.	KIUNGA	3,475	123	0	2,213	0	75	0
20.	MENDI	10,823	4	37	2,324	79	9	o o
21.	MISIMA	7,999	0	0	0	ó	o ·	0
22.	LOUSUIA	3,021	0	0	Ö	0	o .	o o
23.	BUKA	2	0	248	. ŏ	0	Ŏ	o o
	TOTAL	574,919	253,357	172,092	188,289	96,733	69,849	74,226
							0.510	,~
٠				,	•			
<b>21,</b>				,	·	,		
<b>21.</b>							13	14
	Destination	8	9	10	11	12	13	14
Origin	Destination	8	9	. 10	11	12		1 -
Origin 1.	Destination PORT.M	8 10,942	9 33,043	10 10,357	11 36,425	12 7,302	23,956	5,421
Origin 1. 2.	Destination PORT.M LAE	8 10,942 8,949	9 33,043 6,916	10 10,357 11,716	11 36,425 1,819	7,302 442	23,956 0	5,421 639
Origin 1. 2. 3.	Destination PORT.M LAE RABAUL	8 10,942 8,949 178	9 33,043 6,916 9	10 10,357 11,716 17,808	11 36,425 1,819 0	7,302 442 0	23,956 0 0	5,421 639 21,808
Origin 1. 2. 3. 4.	Destination PORT.M LAE RABAUL MT. HAGEN	8 10,942 8,949 178 9,487	9 33,043 6,916 9 87	10 10,357 11,716 17,808 0	11 36,425 1,819 0 0	7,302 442 0 12,114	23,956 0 0 0	5,421 639 21,808 0
Origin 1. 2. 3. 4. 5.	Destination PORT.M LAE RABAUL MT. HAGEN GOROKA	8 10,942 8,949 178 9,487 1,404	9 33,043 6,916 9 87 46	10 10,357 11,716 17,808 0	11 36,425 1,819 0 0	7,302 442 0 12,114	23,956 0 0 0 0	5,421 639 21,808 0
Origin 1. 2. 3. 4. 5.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG	8 10,942 8,949 178 9,487 1,404 6,777	9 33,043 6,916 9 87 46 0	10 10,357 11,716 17,808 0 0	36,425 1,819 0 0 0	7,302 442 0 12,114 19 645	23,956 0 0 0 0	5,421 639 21,808 0 0
Origin 1. 2. 3. 4. 5. 6. 7.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA	8 10,942 8,949 178 9,487 1,404 6,777 385	9 33,043 6,916 9 87 46 0	10 10,357 11,716 17,808 0 0 18 1,458	36,425 1,819 0 0 0 0	7,302 442 0 12,114 19 645 0	23,956 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890
Origin 1. 2. 3. 4. 5. 6. 7.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK	8 10,942 8,949 178 9,487 1,404 6,777 385	9 33,043 6,916 9 87 46 0 0	10 10,357 11,716 17,808 0 0 18 1,458	36,425 1,819 0 0 0 0 0	7,302 442 0 12,114 19 645 0 803	23,956 0 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890 463
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK  POPON.	8 10,942 8,949 178 9,487 1,404 6,777 385 0	9 33,043 6,916 9 87 46 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0	36,425 1,819 0 0 0 0 0 0 0	7,302 442 0 12,114 19 645 0 803	23,956 0 0 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890 463
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK  POPON.  HOSKINS	8 10,942 8,949 178 9,487 1,404 6,777 385 0	9 33,043 6,916 9 87 46 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0	36,425 1,819 0 0 0 0 0 0 0 2,052 30	7,302 442 0 12,114 19 645 0 803 0	23,956 0 0 0 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890 463 0 482
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK  POPON.  HOSKINS  GURNEY	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0	9 33,043 6,916 9 87 46 0 0 210 2,095	10 10,357 11,716 17,808 0 0 18 1,458 0 0	36,425 1,819 0 0 0 0 0 0 2,052 30	7,302 442 0 12,114 19 645 0 803 0	23,956 0 0 0 0 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890 463 0 482
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK  POPON.  HOSKINS  GURNEY  TABUBIL	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 0	9 33,043 6,916 9 87 46 0 0 210 2,095	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0	36,425 1,819 0 0 0 0 0 0 2,052 30 0	7,302 442 0 12,114 19 645 0 803 0 0	23,956 0 0 0 0 0 0 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890 463 0 482 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK  POPON.  HOSKINS  GURNEY  TABUBIL  DARU	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 0 817	9 33,043 6,916 9 87 46 0 0 210 2,095	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0	36,425 1,819 0 0 0 0 0 2,052 30 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329	23,956 0 0 0 0 0 0 0 0 0 0 0 0	5,421 639 21,808 0 0 1,211 890 463 0 482 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	Destination  PORT.M  LAE  RABAUL  MT. HAGEN  GOROKA  MADANG  KIETA  WEWAK  POPON.  HOSKINS  GURNEY  TABUBIL  DARU  KAVIENG	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 0 817 0 460	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 0 0 0 0 755	36,425 1,819 0 0 0 0 0 2,052 30 0 0 0 58	7,302 442 0 12,114 19 645 0 803 0 0 0 0 1,329	23,956 0 0 0 0 0 0 0 0 0 911 0	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 0 817 0 460 79	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755	36,425 1,819 0 0 0 0 0 2,052 30 0 0 58	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376	23,956 0 0 0 0 0 0 0 0 911 0 0 214	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 0 817 0 460 79 14,476	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0	36,425 1,819 0 0 0 0 0 0 2,052 30 0 0 0 58 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375	23,956 0 0 0 0 0 0 0 0 0 911 0 214 0	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 817 0 460 79 14,476	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0	36,425 1,819 0 0 0 0 0 0 2,052 30 0 0 0 58 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375	23,956 0 0 0 0 0 0 0 0 0 911 0 0 214 0	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 817 0 460 79 14,476 0 1,002	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0	36,425 1,819 0 0 0 0 0 0 2,052 30 0 0 0 58 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375 0	23,956 0 0 0 0 0 0 0 0 0 911 0 0 214 0 0	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0 0 0 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 817 0 460 79 14,476 0 1,002	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0 18	36,425 1,819 0 0 0 0 0 0 2,052 30 0 0 0 58 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375 0 0 3,054	23,956 0 0 0 0 0 0 0 0 0 911 0 0 214 0 0 0 5	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0 0 0 0 0 2,114
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 817 0 460 79 14,476 0 1,002 92 0	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0 18 1,458	36,425 1,819 0 0 0 0 0 2,052 30 0 0 0 58 0 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375 0 0 3,054 56	23,956 0 0 0 0 0 0 0 0 911 0 0 214 0 0 5,125 20	5,421 639 21,808 0 0 1,211 890 463 0 482 0 0 0 0 0 0 2,114
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 817 0 460 79 14,476 0 1,002 92 0 0	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0 18 1,458	36,425 1,819 0 0 0 0 0 2,052 30 0 0 0 58 0 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375 0 3,054 56	23,956 0 0 0 0 0 0 0 0 0 911 0 0 214 0 0 5,125 20 0	5,421 639 21,808 0 0 1,211 890 463 0 0 0 0 0 0 0 0 0 0 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 0 817 0 460 79 14,476 0 1,002 92 0 0	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	36,425 1,819 0 0 0 0 0 2,052 30 0 0 0 58 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375 0 0 3,054 56 0	23,956 0 0 0 0 0 0 0 0 0 911 0 0 214 0 0 5,125 20 0	5,421 639 21,808 0 0 1,211 890 463 0 0 0 0 0 0 0 0 0 0 0 0 0
Origin 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	Destination  PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	8 10,942 8,949 178 9,487 1,404 6,777 385 0 0 817 0 460 79 14,476 0 1,002 92 0 0	9 33,043 6,916 9 87 46 0 0 210 2,095 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10,357 11,716 17,808 0 0 18 1,458 0 0 0 22 0 0 755 0 0 18 1,458	36,425 1,819 0 0 0 0 0 2,052 30 0 0 0 58 0 0 0	7,302 442 0 12,114 19 645 0 803 0 0 0 1,329 0 6,376 375 0 3,054 56	23,956 0 0 0 0 0 0 0 0 0 911 0 0 214 0 0 5,125 20 0	5,421 639 21,808 0 0 1,211 890 463 0 0 0 0 0 0 0 0 0 0 0 0

### OD Matrix of Air Passengers for Key Airports (2005)

	. 0.	D MIGUIA	Ji Ziji i do	ocuscio ioi	rey Aup	uris (2005)	,	
(With)			• /	10	**	••	.00	٥,
Out at	25 0011111111111111111111111111111111111	- 15	16	17	18	19	20	21
Origir		21 527	0 /15	22 042	0.217	3,256	10,029	6.412
1.	PORT.M	21,533	8,415 0	23,942	9,217	100	83	6,412
2.	LAE	90 0	0	0.0	4,462	0	0.	0
3.	RABAUL				7,959		4.4	0
4.	MT. HAGEN	12,038	5,839	28	0	1,852 13	1,668	
5.	GOROKA	0	281	2,624			0.	0
6.	MADANG	461	0	2,583	3,910	72	Ü	0
7.	KIETA	0	12.400	23	1,160	140	0	61
8.	WEWAK	0	13,490	.35		149	0	0
9.	POPON.	. 0	: .0	39	0	0	0	0
10.	HOSKINS	. 0	0	0	0	0	0	9903
11.	GURNEY	-		0	0			A Company of the Comp
12.	TABUBIL	6,044	870	0	0	3,908	105	0
13.	DARU	210	0	0	0	4,939		0
14.	KAVIENG	0	0	0	2,021	0	10.504	0.
15.	TARI	0	0	0	0	10	12,504	0
16.	VANIMO	,0	0	0	0	81	0	0
17.	CHIMBU	0	0	0	0	0	0.	0
18.	MANUS	0	0	0	0	0	0	0.
19.	KIUNGA	199	22	0	0:	0 7	9	0
20.	MENDI	11,023	0	0	17		0	0.
21.	MISIMA	0	0	· . 0	0	0	. 0	0.
22.	LOUSUIA	0	0	0	0	0	0	0
23. 24.	BUKA TOTAL	0 51,598	0 28,917	0 29,275	0 28,734	0 14,387	0 24,398	16,376
			-44	,				
<b>.</b>	Destination	22	23	24	:			•
Origir	}			4 1 1				
1.		A 000	^	WW 4 0 1 0				
	PORT.M	2,808	. 0	574,919				
2.	PORT.M LAE	0	. 0	253,357				
2. 3.	PORT.M LAE RABAUL	0	0 250	253,357 172,091				
2. 3. 4.	PORT.M LAE RABAUL MT. HAGEN	0 0 0	0 250 0	253,357 172,091 188,289				
2. 3. 4. 5.	PORT.M LAE RABAUL MT. HAGEN GOROKA	0 0 0 0	0 250 0 0	253,357 172,091 188,289 96,732				
2. 3. 4. 5. 6.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG	0 0 0 0	0 250 0 0 0	253,357 172,091 188,289 96,732 69,848				
2. 3. 4. 5. 6. 7.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	0 0 0 0 0 7	0 250 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226				
2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK	0 0 0 0 0 7 0	0 250 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048				
2. 3. 4. 5. 6. 7. 8.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	0 0 0 0 0 7 0	0 250 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407				
2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	0 0 0 0 0 7 0 11	0 250 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151				
2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	0 0 0 0 7 0 11 0 2,799	0 250 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	0 0 0 0 7 0 11 0 2,799	0 250 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	0 0 0 0 7 0 11 0 2,799 0	0 250 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226	en e			
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	0 0 0 0 7 0 11 0 2,799 0	0 250 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	0 0 0 0 7 0 11 0 2,799 0 0	0 250 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599	en e			
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	0 0 0 0 7 0 11 0 2,799 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	0 0 0 0 7 0 11 0 2,799 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	0 0 0 0 7 0 11 0 2,799 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	0 0 0 0 7 0 11 0 2,799 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734 14,387				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	0 0 0 0 7 0 11 0 2,799 0 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734 14,387 24,398				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	0 0 0 0 0 7 0 11 0 2,799 0 0 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734 14,387 24,398 16,375				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	0 0 0 0 0 7 0 11 0 2,799 0 0 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734 14,387 24,398 16,375 5,641				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA BUKA	0 0 0 0 0 7 0 11 0 2,799 0 0 0 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734 14,387 24,398 16,375 5,641 250				
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	0 0 0 0 0 7 0 11 0 2,799 0 0 0 0 0 0	0 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	253,357 172,091 188,289 96,732 69,848 74,226 55,048 42,407 42,151 51,364 32,515 30,226 33,027 51,599 28,917 29,275 28,734 14,387 24,398 16,375 5,641				

# OD Matrix of Air Passengers for Key Airports (2010)

(With)					izoj iznipol	10 (2010)		
	Destination	1	2	3	4	5	6	7.
Origin				and a first				
	PORT.M	0	159,073	66,071	116,072	64,910	23,443	43,375
2.	LAB	157,913	0	46,076	44,057	21,397	14,614	5,098
3.	RABAUL	72,157	43,996	0	0	0	2,501	44,634
4.	MT, HAGEN	119,289	43,152	46	0	21,937	17,880	. 0
5.	GOROKA	69,714	22,044	0	21,351	0	10,785	. 0
6.	MADANG	24,967	14,980	1,750	15,108	11,281	. 0	16
7.	KIETA	43,745	3,864	42,806	0	55	184	0
8.	WEWAK	12,215	11,031	607	13,626	2,055	7,327	0
9.	POPON.	40,949	11,621	0	0	0	.0	0
10.	HOSKINS	12,011	13,583	25,562	0	0	0	2,071
	GURNEY	46,430	2,819	0	0	. 0	0	0
12.	TABUBIL	8,197	457	15	16,064	82	584	0
13.	DARU	32,993	0	0	. 0	0	0	0
	KAVIENG	5,764	3,056	30,048	0	31	1,863	408
15.	TARI	25743	0	0	21985	59	222	0
16.	VANIMO	10,912	0	0	8,913	316	66	0
17.	CHIMBU	30,205	0	0	13	7,754	2,803	0
18.	MANUS	9,489	5,799	14,964	0:	0	5,087	369
19.	KIUNGA	7,353	140	.0	2,741	0	78	0
20.	MENDI	13,915	5	50	3,299	107	11	0
21.	MISIMA	11,262	0	0.	0	0	0	0
22.	LOUSUIA	3.750	0	. 0	0	0	0	0
23.	BUKA	2	0	248	0	0	0	0
24.	TOTAL	755,375	335,617	229,244	263,229	129,983	87,448	95,971
	and the second s							
				•			-	
	Destination	 8	9	10	. 11	12	13	14
Origin	Destination	<b>8</b>	9	10	. 11	12	13	14
Origin 1.			100					
1.	PORT,M	12,498	42,721	13,071	49,092	12 8,627 551	13 33,328 0	14 7,261 895
1. 2.	PORT,M LAE		100	13,071 15,531		8,627	33,328	7,261
1. 2.	PORT,M	12,498 10,799	42,721 9,381	13,071	49,092 2,565	8,627 551	33,328 0	7,261 895
1. 2. 3.	PORT,M LAE RABAUL	12,498 10,799 215	42,721 9,381 12	13,071 15,531 23,608	49,092 2,565 0	8,627 551 0	33,328 0 0	7,261 895 30,518
1. 2. 3. 4.	PORT,M LAE RABAUL MT, HAGEN	12,498 10,799 215 12,347	42,721 9,381 12 126	13,071 15,531 23,608	49,092 2,565 0 0	8,627 551 0 16,181	33,328 0 0 0	7,261 895 30,518 0
1. 2. 3. 4. 5.	PORT,M LAE RABAUL MT. HAGEN GOROKA	12,498 10,799 215 12,347 1,726	42,721 9,381 12 126 63	13,071 15,531 23,608 0	49,092 2,565 0 0	8,627 551 0 16,181 24	33,328 0 0 0 0	7,261 895 30,518 0
1. 2. 3. 4. 5.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG	12,498 10,799 215 12,347 1,726 7,476	42,721 9,381 12 126 63 0	13,071 15,531 23,608 0 0	49,092 2,565 0 0 0	8,627 551 0 16,181 24 739	33,328 0 0 0 0	7,261 895 30,518 0 0
1. 2. 3. 4. 5. 6. 7.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA	12,498 10,799 215 12,347 1,726 7,476 450	42,721 9,381 12 126 63 0	13,071 15,531 23,608 0 0 22 1,886	49,092 2,565 0 0 0 0	8,627 551 0 16,181 24 739 0 877	33,328 0 0 0 0 0	7,261 895 30,518 0 0 1,594 1,223 586 0
1. 2. 3. 4. 5. 6. 7. 8.	PORT,M LAE RABAUL MT, HAGEN GOROKA MADANG KIETA WEWAK	12,498 10,799 215 12,347 1,726 7,476 450 0	42,721 9,381 12 126 63 0 0	13,071 15,531 23,608 0 0 22 1,886	49,092 2,565 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877	33,328 0 0 0 0 0 0	7,261 895 30,518 0 0 1,594 1,223 586
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT.M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON.	12,498 10,799 215 12,347 1,726 7,476 450 0	42,721 9,381 12 126 63 0 0	13,071 15,531 23,608 0 0 22 1,886 0	49,092 2,565 0 0 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877	33,328 0 0 0 0 0 0 0 0	7,261 895 30,518 0 0 1,594 1,223 586 0
1. 2. 3. 4. 5. 6. 7. 8. 9.	PORT,M LAE RABAUL MT, HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS	12,498 10,799 215 12,347 1,726 7,476 450 0 0	42,721 9,381 12 126 63 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0	49,092 2,565 0 0 0 0 0 0 2,896 42	8,627 551 0 16,181 24 739 0 877 0	33,328 0 0 0 0 0 0 0 0 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY	12,498 10,799 215 12,347 1,726 7,476 450 0 0	42,721 9,381 12 126 63 0 0 278 2,955	13,071 15,531 23,608 0 0 22 1,886 0 0 0	49,092 2,565 0 0 0 0 0 0 2,896 42 0	8,627 551 0 16,181 24 739 0 877 0 0	33,328 0 0 0 0 0 0 0 0 0 0 1,234	7,261 895 30,518 0 0 1,594 1,223 586 0 664
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0	42,721 9,381 12 126 63 0 0 0 278 2,955	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30	49,092 2,565 0 0 0 0 0 0 2,896 42 0	8,627 551 0 16,181 24 739 0 877 0 0	33,328 0 0 0 0 0 0 0 0 0 0 1,234	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 0 895	42,721 9,381 12 126 63 0 0 0 278 2,955 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0	8,627 551 0 16,181 24 739 0 877 0 0 0	33,328 0 0 0 0 0 0 0 0 0 0 1,234	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 895 0 582	42,721 9,381 12 126 63 0 0 0 278 2,955 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0	8,627 551 0 16,181 24 739 0 877 0 0 0 1,790 0	33,328 0 0 0 0 0 0 0 0 0 1,234 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	PORT,M LAE RABAUL MT, HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 895 0 582 108	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0 1,038	49,092 2,565 0 0 0 0 0 0 2,896 42 0 0 0	8,627 551 0 16,181 24 739 0 877 0 0 0 1,790 0 8,902	33,328 0 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 895 0 582 108 18,974	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0 0 1,038	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877 0 0 0 1,790 0 8,902 505 0	33,328 0 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 895 0 582 108 18,974	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0 0 1,038 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 83 0	8,627 551 0 16,181 24 739 0 877 0 0 0 1,790 0 8,902 505 0 0 3,139	33,328 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0 0 6,392	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 0 895 0 582 108 18,974 0	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0 0 1,038 0 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 83 0 0	8,627 551 0 16,181 24 739 0 877 0 0 0 1,790 0 8,902 505 0 0 3,139 69	33,328 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0 6,392 28	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA	12,498 10,799 215 12,347 1,726 7,476 450 0 0 0 895 0 582 108 18,974 0 1,294	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 30 0 1,038 0 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877 0 0 0 1,790 0 8,902 505 0 0 3,139 69 0	33,328 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0 6,392 28 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0 0 0 3,093
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI	12,498 10,799 215 12,347 1,726 7,476 450 0 0 895 0 582 108 18,974 0 1,294 91 0	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 1,038 0 0 0 26	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 83 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877 0 0 1,790 0 8,902 505 0 0 3,139 69 0	33,328 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0 6,392 28	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0 0 0 0 3,093
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA	12,498 10,799 215 12,347 1,726 7,476 450 0 0 895 0 582 108 18,974 0 1,294 91 0 0 0	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0 0 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 30 0 0 1,038 0 0 0 26 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 0 83 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877 0 0 1,790 0 8,902 505 0 0 3,139 69 0 0	33,328 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0 6,392 28 0 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0 0 0 0 0 0 0 0 0 0 0
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	PORT,M LAE RABAUL MT. HAGEN GOROKA MADANG KIETA WEWAK POPON. HOSKINS GURNEY TABUBIL DARU KAVIENG TARI VANIMO CHIMBU MANUS KIUNGA MENDI MISIMA LOUSUIA	12,498 10,799 215 12,347 1,726 7,476 450 0 0 895 0 582 108 18,974 0 1,294 91 0	42,721 9,381 12 126 63 0 0 0 278 2,955 0 0 0 0 0 0	13,071 15,531 23,608 0 0 22 1,886 0 0 0 1,038 0 0 0 26 0	49,092 2,565 0 0 0 0 0 2,896 42 0 0 0 83 0 0 0 0 0	8,627 551 0 16,181 24 739 0 877 0 0 1,790 0 8,902 505 0 0 3,139 69 0	33,328 0 0 0 0 0 0 0 0 0 1,234 0 0 337 0 0 6,392 28 0 0	7,261 895 30,518 0 0 1,594 1,223 586 0 664 0 0 0 0 0 3,093 0

OD	Matrix	of Air	Passengers	for Key	Airports	(2010)

	· (	JD Matrix c	of An Pas	sengers for	Key Airpor	ts (2010	)	
(With)	Destination	15	16	17	18	19	20	21
Origin		20.002	11.630	22.004	11.026	2 551	10.002	0.070
1, -	PORT,M	30,883	11,649	33,224	11,236 6,379	3,551 115	12,833	8,979
2.	LAE	135	0	0				0
3.	RABAUL	10.474	0.070	0	11,353	0	. •	0
4	MT. HAGEN	18,674	8,872	43	0	2,319	2,363	0
5.	GOROKA	0	412	3,848		15	0	0
6.	MADANG	655	0	3,525	5,260	76	0	0
7.	KIETA	0	0	32	1,628	0	0	88
: 8.	WEWAK	0	17,656	46	1,280	149	0	0
9.	POPON.	0	0	57		0	0	0
10.	HOSKINS	0	0	0	0	0	0	0
11.	GURNEY	0	0	0	0	0	0	14815
12.	TABUBIL	8,494	1,173	0	and the second second	4,079	131	0
13.	DARU	332	0	0	0	6,204	0	0
14.	KAVIENG	0.	0	0	2,962	0	0	0
15.	TARI	0	0	0	0	13	18,264	0
16.	VANIMO	0	0	0	0	102	0	0
17.	CHIMBU	0	0	0	0	0	0.	0
18.	MANUS	0	0	0	0	0	0	0
19.	KIUNGA	261	27	0	0	0	10	0
20.	MENDI	16,198	0	0	23	8	0	0
21.	MISIMA	0	0	0	0	0		0
22.	LOUSUIA	0	0	0	0	. 0	0	0
23. 24.	BUKA TOTAL	75,633	0 39,788	40,775	0 40,121	0 16,631	0 33,713	23,882
Origin		22	23	24				
1.	PORT.M	3,478	<b>0</b> ,	755,375		•	F 1	:
2.	LAE	0 -	. 0 .	335,617				
3.	RABAUL	0	250	229,243	:		1,12,5	4 F A
4	MT. HAGEN	0	0	263,229	1.5	. 5		t Patient
5.	GOROKA	0	0.				1	
6.	MADANG	0	0	87,448	4.3		No Asi	374
7.	KIETA	9	0.1	95,970				fr.
	WEWAK	<b>0</b> :	0	67,455			96.81	
9.	POPON.	14	0	55,537				선생 그
10.	HOSKINS	: 0	0	55,211		•		
11.	GURNEY	3,798	0	70,847			1.2	
12.	TABUBIL	0	0	41,405				Att 1
13.	DARU	0	0	41,320			7,3-	Este (S)
14.	KAVIENG	0	0	45,835				
15.	TARI	0	0	75,634	. :		The second secon	1 1 ×1
16.	VANIMO	0	. 0,	39,788			(3) (4.8)	
17.	CHIMBU	0	0	40,776			e e e e e e e e e e e e	14
18.	MANUS	• 0	0	40,121		. :	- 11.21.	
19.	KIUNGA	0 :	. 0	16,631			en gerinderen	12.
20.	MENDI	. 0 ,	0	33,714			1 77.3	errich (ER)
21.	MISIMA	21	0	23,881			i etatik	
22.	LOUSUIA	0	. 0,	7,320		* 1.		第455章
23.	BUKA	0	0.	250				
24,	TOTAL	7,320	250	2,552,590	100	4.	* A	

#### Attachment 9-1

#### Runway Length

1. Analysis on Runway Length

The Runway length is calculated by analyzing the relation of aerodrome data and aircraft data, while the relation between take-off weight and air-routes for each type of aircraft are based on the manufacturers' manual tables.

1) Aerodrome data

Aerodrome Elevation : 13.85 m MSL

Aerodrome Reference Temperature : 31.0°C

Temperature in Standard Atmosphere at : \*14.91°C

Aerodrome Elevation

2) Aircraft Characteristics : Refer to Table A9.1-1

2. Required Runway Length Corrected by Elevation, Temperature and Runway Slope

Basic Take-off Runway Length: A

- (1) By aerodrome Elevation : A+(Ax0.07  $\frac{13.85}{300}$ ) = 1.003232•A
- (2) By Aerodrome Elevation Temperature :  $1.003232 \cdot A[1.003232 \cdot Ax(31.0-14.91)x0.01] = 1.1646 \cdot A$
- (3) By Slope of Runway:

 $1.1646 \cdot A + (1.1646 \cdot Ax0.42x0.1) = 1.214 (RWY : 2200 m)$ 

 $1.1646 \cdot A + (1.1646 \cdot A \times 0.30 \times 0.1) = 1.199 \cdot A (RWY : 3000 m)$ 

Corrected Runway Length : 1.21•A and 1.20•A

3. Required Runway Length is Corrected by the Relation of Aircraft and Air-Routes

An assumed maximum stage length is estimated to be 3.611 km, which is the of between Tokua and Sydney in year 2000, and an assumed maximum stage length of 5,112 km is estimated to be that of between Tokua and Singapore in year 2010. (798 km via POM)

Fuel reserve is assumed as 10% of stage fuel, 200 NM diversion, and 0.5 hour approach and landing.

Table A9.1-1 Aircraft Characteristics

					-				
Characteristic	Unit	B747-200B (JT9D-70)	B747-SP (JT9D-7F)	A-300B2 (CF6-50C)	A310-300 (JT9D-7R4E)	A310-200 (JT9D-7R4C)	B767-200 (CF6-80A2)	B737-200 (JT8D-15)	MD87 (JT8D-217C)
Maximum Ramp Weight	Pounds (Kilograms)	823,000	666,000 (302,400)	315,040 (142,900)	332,680 (150,900)	292,990 (132,900)	312,000 (141,520)	116,000 (52,660)	150,500 (68,266)
Maximum Take-off Weight	Pounds (Kilograms)	820,000 (372,300)	660,000 (299,600)	313,056 (142.000)	330,690 (150,000)	291,005 (132,000)	310,000 (14,610)	115.500 (52,440)	149,500 (67,812)
Maximum Landing Weight	Pounds (Kilograms)	564,000 (256,000)	450,000 (204,300)	299,820 (136,000)	<i>27</i> 1,166 (123,000)	261,243 (118,500)	270,000 (122,420)	103,000(b) (46,760)	130,000 (58,967)
Zero-Fuel Weight	Pounds (Kilograms)	526,500 (239,000)	410,000 (186,100)	277,780 (126.000)	249,120 (113,000)	239,200 (108,500)	248,000 (112,490)	95,000 (43,130)	112,000 (50,802)
Operating Empty Weight (Spec.)	Pounds (Kilograms)	376,600 (171,000)	315,200 (143,100)	190,200 (86,275)	169,124 (76,714)	169,470 (76,869)	173,710 (78,790)	60,170 (27,320)	74,880 (33,965)
Maximum Structural Payload	Pounds (Kilograms)	149,900 (68,000)	94,800 (43,000)	87.580 (39.725)	7,996 (36,286)	(31,631)	74,290 (33,690)	34,830 (15,810)	37,120 (16,837)
Maximum Seating Capacity	Passengers	385	281	269	243	237	216	130	139
Maximum Cargo Volume-Below Deck	Cubic Feet (Cubic Meters)	5,250 (149)	3,500 (99.1)	4,944 (140.0)	2,795 (79.2)	3,813 (1,080)	3,070 (87.0)	875 (24.8)	695 (7.91)
Maximum Cargo Volume-Main Deck	Cubic Feet (Cubic Meters)	1,000 (28.3)	400	<b>1</b>		1			l Distriction
Usable Fuel Capacity	U.S. Gallons (Liters)	51,090 (193,400)	47,210 (178,700)	11,623 (44,000)	16,139 (61,090)	14,530 (55,000)	16,700 (63,216)	5,151 (19,500)	6,981 (26,423)

Note: (b) Max. Flap setting is 40°

Table A9.1-2 Runway Length Requirement by Aircraft

				Take-off I	Take-off Runway Length		Landing Runway Length	way Length
	Model	Engine	Take-off	Basic RWY	Adjusted RWY	Landing	Wet RWY	Dry RWY
			Weight			Max. Weight		
		***			(Flaps)		(Flaps)	(Flaps)
Singapore	B747-200B	JJ9D-70	697,400	2,240	2,690	564,000	2,660 (25°)	2,350 (25°)
	A310-300	JJ9D-7R4E	(a) 330,600	2,400	2,880	271,200	1,740 (40°)	1,510(40°)
Honolulu	B747-200B	JT9D-70	736,000	2,510	3,010	564,000	2,660 (25°)	2,350 (25°)
	B747-SP	JT9D7F	620,300	1,950	2,340	450,000	1,950 (30°)	1,680 (30°)
Sydney	A310-300	JT9D-7R4E	328,900	2,240	2,700	271,200	1,740 (40°)	1,510 (40°)
	B767-200	CF6-80A2	(a) 310,000	1,750	2,110	270,000	1,720 (25°)	1,530 (25°)
	MD-87	JT8D-217C	(a) 149,500	2,250	2,720	130,000	1,770 (28°)	1,520 (28°)
Caims	A300-B2	CF6-50C	(a) 313,000	1,590	1,930 (15°)	299,800	2,060 (25°)	1,790 (25°)
	B737-200	JT8D-15	(a) 115,500	2,000	2,420 (POS5)	103,000	1,800 (15°)	1,570 (15°)
	MD-87	JT8D-217C	136,200	1,730	2,090	130,000	1,770 (28°)	1,520 (28°)
	A310-200	JT9D-7R4C	290,600	1,620	1,960	261,200	1,660 (40°)	1,440 (40°)
Via Port Moresby	B747-200B	JT9D-70	573,500	1,530	1,860	547,400	2,100 (30°)	1,830 (30°)
	B747-SP	JT9D-7F	457,000	1,830	2,220	430,900	1,870 (30°)	1,630 (30°)
	A310-300	JT9D-7R4E	278,000	1,490	1,810	262,100	1,700 (40°)	1,480 (40°)
	A310-200	JT9D-7R4C	268,100	1,370	1,660	252,200	1,640 (40°)	1,430 (40°)
	A300-B2	CF6-50C	306,700	1,500	1,820 (15°)	290,800	1,980 (25°)	1,720 (25°)
	B767-200	CF6-80A2	276,900	1,410	1,710	261,000	1,710 (25°)	1,480 (25°)
	MD-87	JT8D-217C	124,000	1,440	1,750	117,200	1,650 (28°)	1,440 (28°)
	B737-2000	(Advanced) JT8D-15	107,000	1,530	1,860 (POS15)	100,200	1,760 (15°)	1,540 (15°)
	B737-200	JT8D-9	107,000	2,050	2,490 (POSS)	100,200	1,930 (25°)	1,670 (25°)

Notes : Weight in Pounds, Runway Length in Metre.

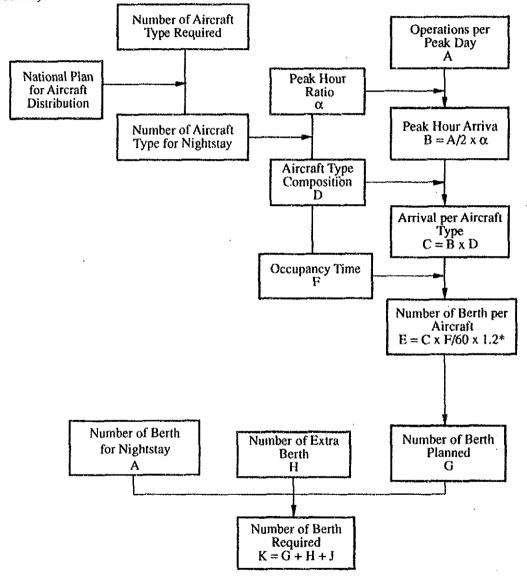
(a) Payload limited by Maximum Take-off Weight.

#### Attachment 9-2

#### Estimate of Loading Aprons and Apron Berth

#### 1. Facility Design Criteria

The diagram below is the criteria adaptable to the apron projection for Tokua Airport, which has been developed by the methodology of JCAB (Japan Civil Aviation Bureau).



Note: 1.2\*: To secure 20% extra berth for biased operations at a peak-hour, or for unavoidable factors such as prolonged parking time due to a ship change or mechanical trouble.

H: To provide one (1) additional berth per 10 aircraft for the maximum sized aircraft, to cope with such unforeseeable situations as long delay, diversion, malfunction of aircraft, etc.

#### 2. Peak Month Ratio (PMR)

The air passengers at the existing Rabaul Airport are rather concentrated in December and January, according to the latest data. It could be because of the seasonal traffic demands which seem to be caused by the movements of foreign tourists, PNG emigrants and religious followers. The actual ratio of the number of peak-month passengers in these months to the annual passengers at the airport was found to be 26.7% in January 1990.

**Basic Month Factor** 

1/12 = 0.08333, hence

Peak Month Ratio

 $0.08333 \times 1.267 = 0.1056$  for the year 1990

While, it is estimated that the ratio mentioned above (26.7%) will reduce to 20.0% in 2000 and 15.0% in 2010.

#### 3. Peak Day Ratio (PDR)

Basic Day Factor: 1/30.44 = 0.033

\* 30.44 is average number of days in a month for 4 years: [365 days x 3 (years) + 366 days] + [12 (months) x 4 (years)]

The premium rate of peak day passengers is assumed to be 10% of the average daily passengers in the peak-month. The radios of peak-month and peak-day passengers to the annual passengers are assumed as shown in Table below.

Ratios of Peak-Month and Peak-Day

Year	Peak-Month Ratio (PMR)	Peak-Day Ratio (PDR)*
1990	0.1056 (0.8333 x 1.267)	0.00386 (1/259)
2000	0.0999 (0.8333 x 1.20)	0.00370 (1/270)
2010	0.0958 (0.8333 x 1.15)	0.00357 (1/280)

<sup>\*</sup> PDR to the annual passengers is obtained by the following formula: PDR = PMR x 1.10 + 30.44 (average days in a month)

#### 4. Peak-Hour Ratio (PHR)

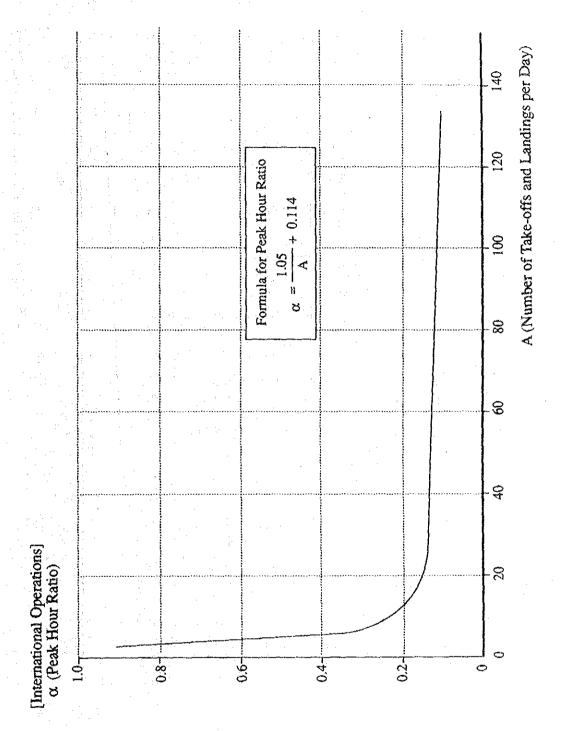
A formula to calculate PHR has not yet been concretely found at Rabaul Airport because of insufficient data. But, according to the time tables of only the major

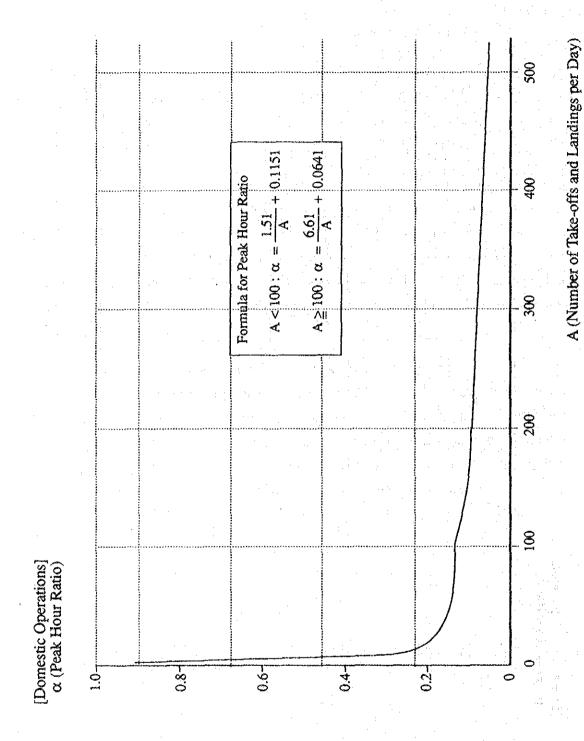
airlines, Air Niugini and Talair, 4 flights per hour period of  $12:00 \sim 13:00$  out of 13 flights per day were found, which reflects PHR be about 30% (4 + 13).

However, there are some other flights operated by minor alrlines which are taken as general aviations, for which an apron is to be provided separately from the major one. Thus, PHR for major operations is considered to be not affected by the operations of general aviations, though it would affect ATC operations.

The tendency is that there are 4 flights per hour period of  $12:00 \sim 13:00$  in an average week day, Monday through Sunday. It has been peculiarly experienced in the world aviation field that the correlation, between peak-hour operation and the total operations in the day that the peak-hour operations have occured, has coefficiently become smaller in line with aircraft type becoming larger. Thus, PHR is estimated to prevail  $20\% \sim 25\%$  in this study. PHR will be accordingly set up as 27% for the year 1995, 25% for 2000 and 20% for 2010.

The attached 2 graphic sheets are presented to introduce how to figure out the Peak-Hour Concentrated Ratios for international and domestic operations by using graphs. These were derived from the formula set in Japan to apply generally to a facility requirement of an airport development. However, these cannot be applied to the case in PNG at present. It is recommended to develop these kinds of graph derived from a peak-hour ratio, when a correlation between peak-hour operation and day operation is found in future.





### 5. Estimate of Apron Berth for 2000

For the basis of data the requirement of apron berths for the estimated annual passengers of 278,000 in the year 2000 has been calculated as follows:

#### 5.1 Basic Parameter

The basic parameter applied herein in summarized as follows:

a) Peak Day Factor

1/270 (0.003704)

b) Peak Hour Factor

0.25

c) Load Factor (L.F.)

Domestic 6

60%

International

50%

#### 5.2 Operations (Arrival and Departure) per Aircraft

Passenger Composition with A/C Type Q (Seat)	Annual Passenger P Total x Q	Annual Operation  8 P/seat/L.F	Peak Day Factor β Day/month	Peak Day Operation A δ x β	Peak Hour Factor α Hour/day	Peak Hour Operation R A x α
[International])	2 34 1					
A310 5.4%	15,000	143	1/270	1 (0.53)	0.25	0.3
(210) B737 1.8% (90)	5,000	t11	1/270	1 (0.41)	0.25	0.3
			·		······································	**************************************
[Domestic]	1.				•	
B737 46.4%	129,000	2,389	1/270	8 (8.85)	0.25	2.0
(90)	20 700	1 75N	1/270	6 (6.51)	0.25	1.5
DHC 13.9% (36)	38,700	1,759	1/2/0	0 (0.51)	0.23	1.5
G.A 32.5%	90,300	11,287	1/270	42 (41.80)	0.25	10.5
(13)						
Total	278,000	15,689		58 (58.10)	0.25	14.6

# 5.3 Required Number of Apron Berths (Peak Hour) for International and Domestic Carriers

Aircraft Type International & Domestic	Peak Hour Arrival B = R/2	Occupancy Time (min.) F	No. of Berth per Aircraft E = BxF/60x1.2	Planned No. of Berth	Extra Berth H	Required No. of Berth K
A310	0.15	70	0.21	1	0	l
B737	1.15	45	1.03	1	0	1
DHC8	0.75	45	0.67	1.5	0	1
G.A.	5.25.	30	3.15		0	3
Total:	<del>نىلىدىد</del> د <del>ەسان قىسىدىدۇ كەن ۋىلىكىدىن يەن ئېرىپىدە ب</del> ېدى <u>نى</u>	. :		6	0	6

#### 6. Estimate of Apron Berth for 2010

On the basis of data, the required apron berths for the estimated annual passengers of 497,000 in the year 2010 has been calculated as follows:

#### 6.1 Basic Parameter

The basic parameter applied herein is summarized as follows:

a) Peak Day Factor : 1/280 (0.003571)

b) Peak Hour Factor: 0.20

c) Load Factor (L.F.) : Domestic 60%

International 50%