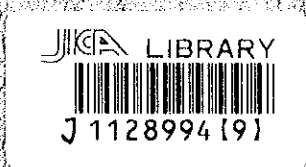


No. 1

MINISTRY OF CULTURE, TOURISM AND AVIATION  
THE SOLOMON ISLANDS

**BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT FOR HENDERSON  
INTERNATIONAL AIRPORT DEVELOPMENT  
IN  
THE SOLOMON ISLANDS**

DECEMBER 1995



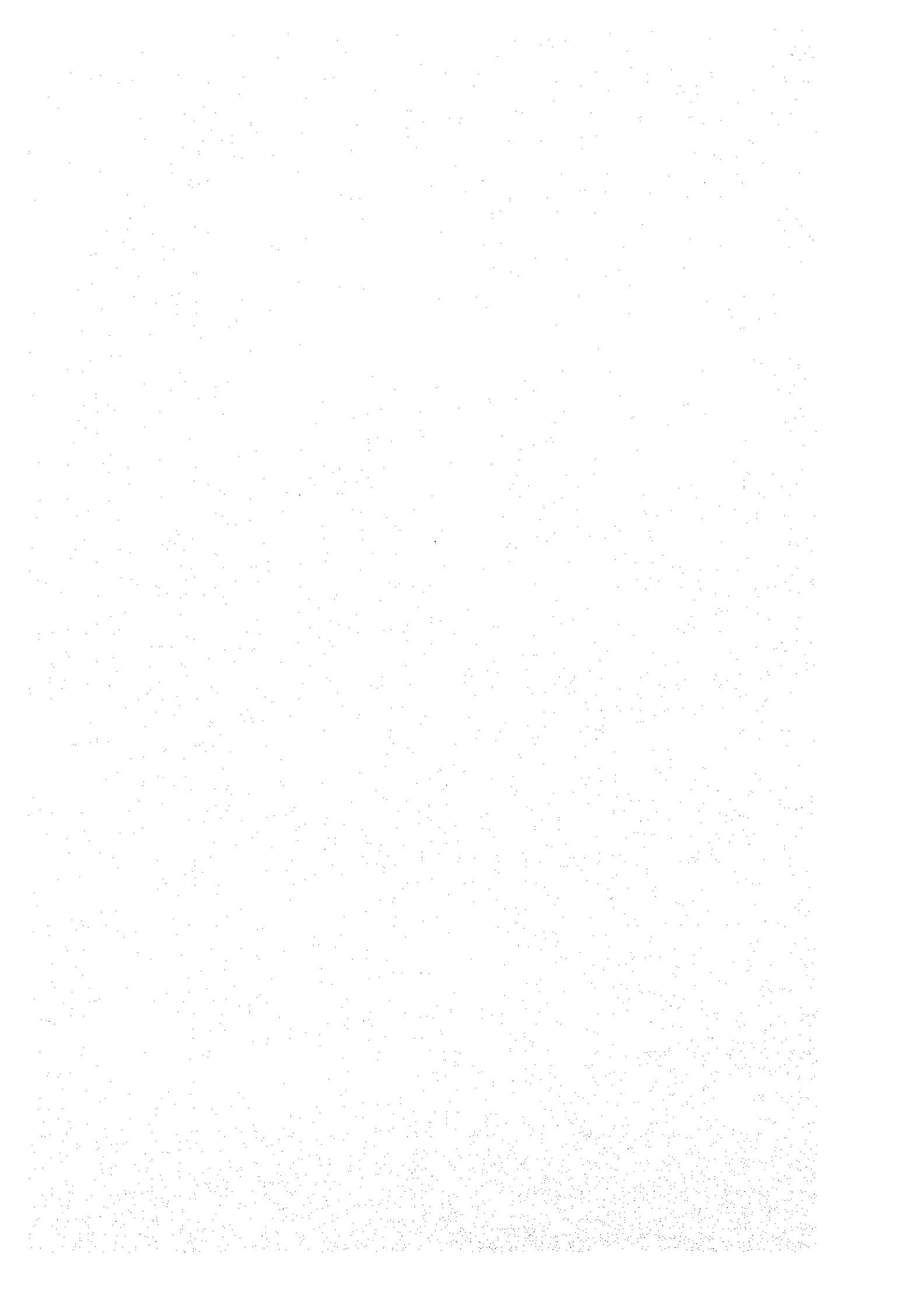
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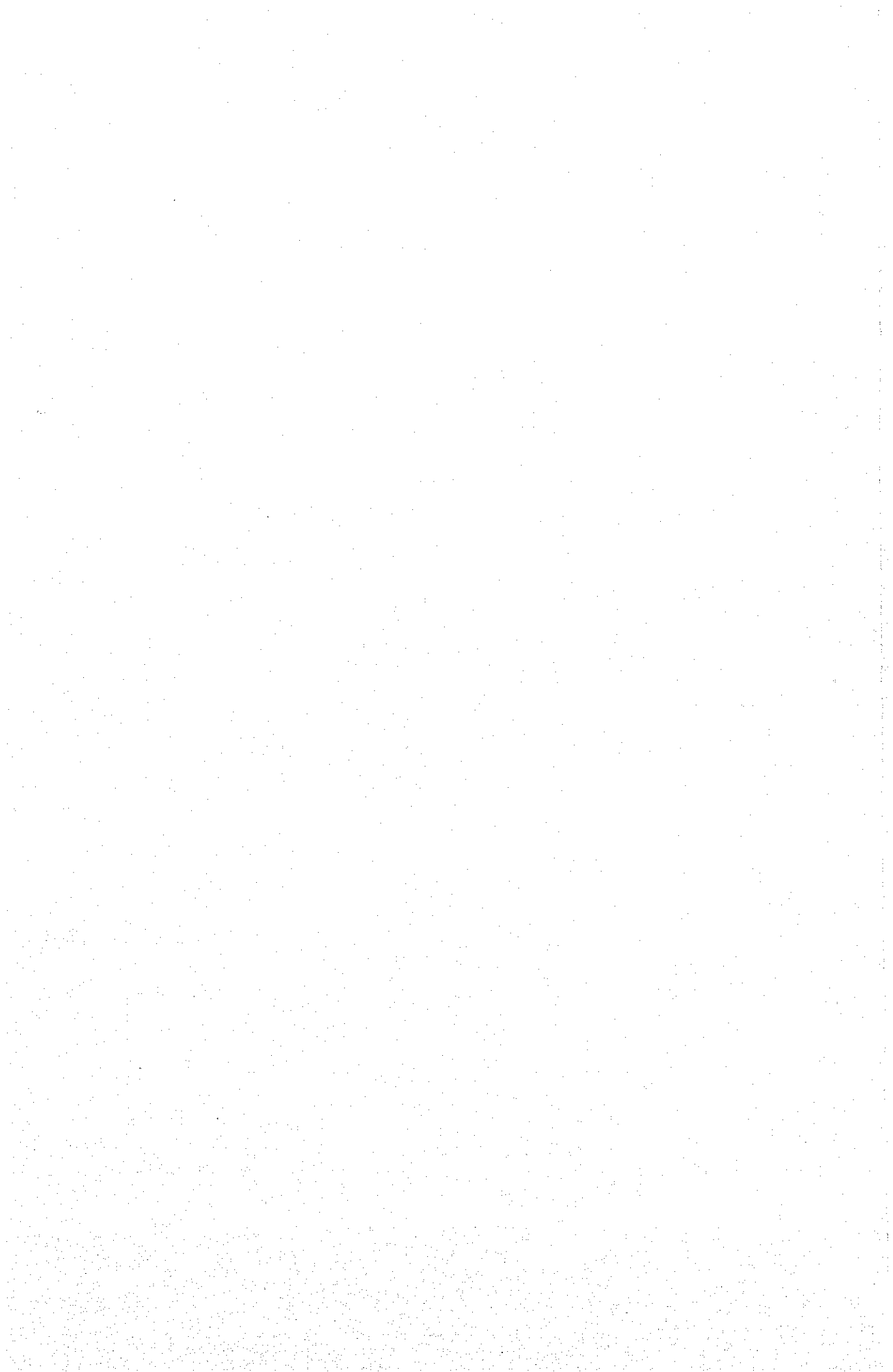
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BASIC DESIGN STUDY REPORT ON THE PROJECT  
FOR HENDERSON INTERNATIONAL AIRPORT DEVELOPMENT IN THE SOLOMON ISLANDS

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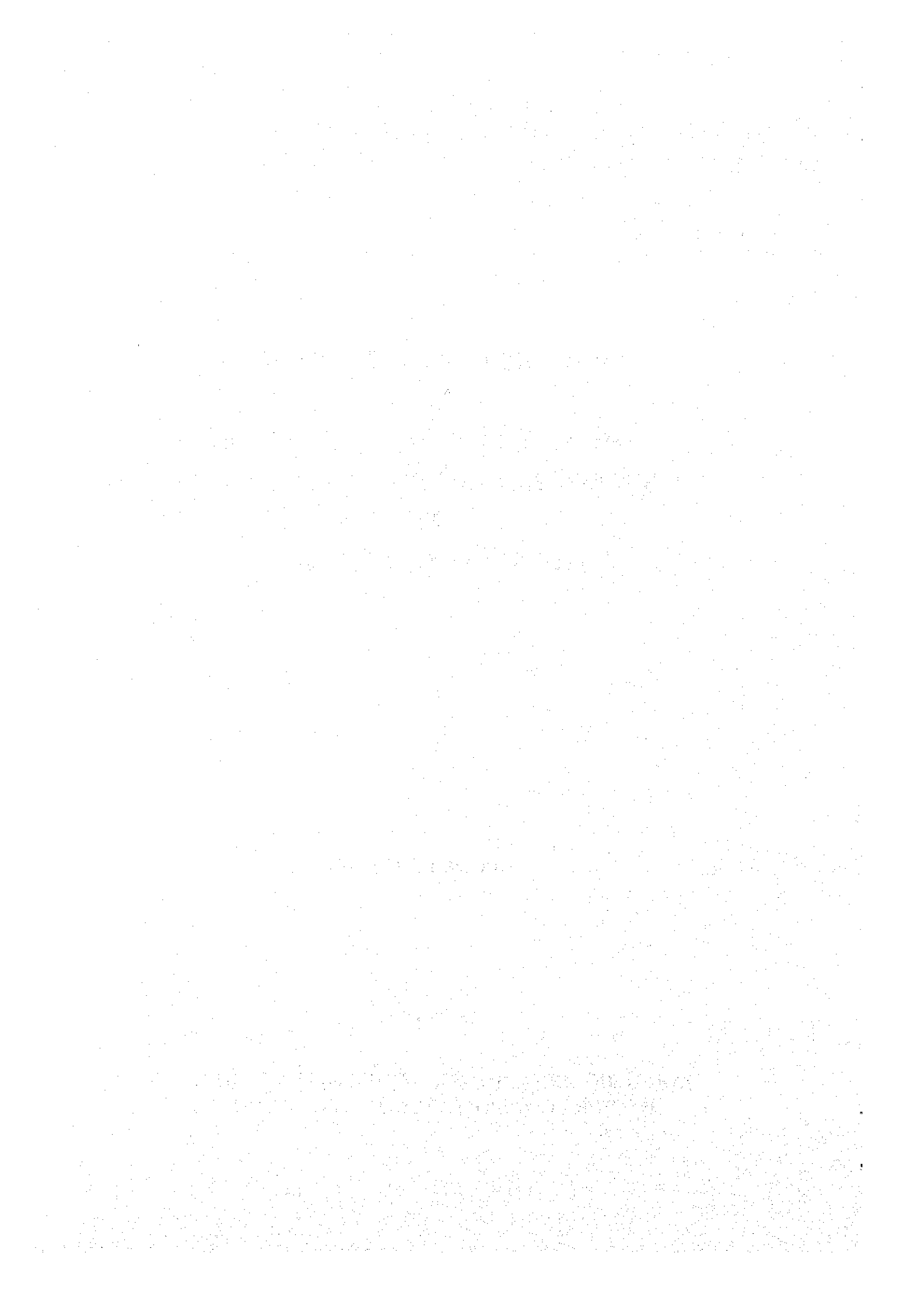
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**MINISTRY OF CULTURE, TOURISM AND AVIATION  
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**DECEMBER 1995**

**JAPAN INTERNATIONAL COOPERATION AGENCY  
PACIFIC CONSULTANTS INTERNATIONAL**



## PREFACE

In response to a request from the Government of the Solomon Islands the Government of Japan decided to conduct a basic design study on the Project for Henderson International Airport Development and entrusted the study to the Japan International Cooperation Agency (JICA).

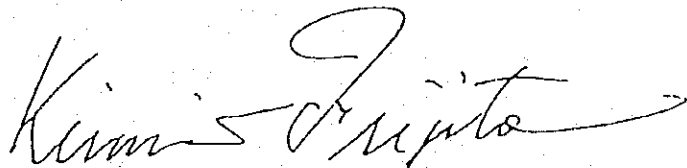
JICA sent to the Solomon Islands a study team from 9 April to 6 May, 1995.

The team held discussions with the officials concerned of the Government of the Solomon Islands, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to the Solomon Islands in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Solomon Islands for their close cooperation extended to the teams.

December, 1995



Kimio Fujita

President

Japan International Cooperation Agency





December, 1995

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Henderson International Airport Development in the Solomon Islands.

This study was conducted by Pacific Consultants International, under a contract to JICA, during the period from March 30, 1995 to December 21, 1995. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of the Solomon Islands and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

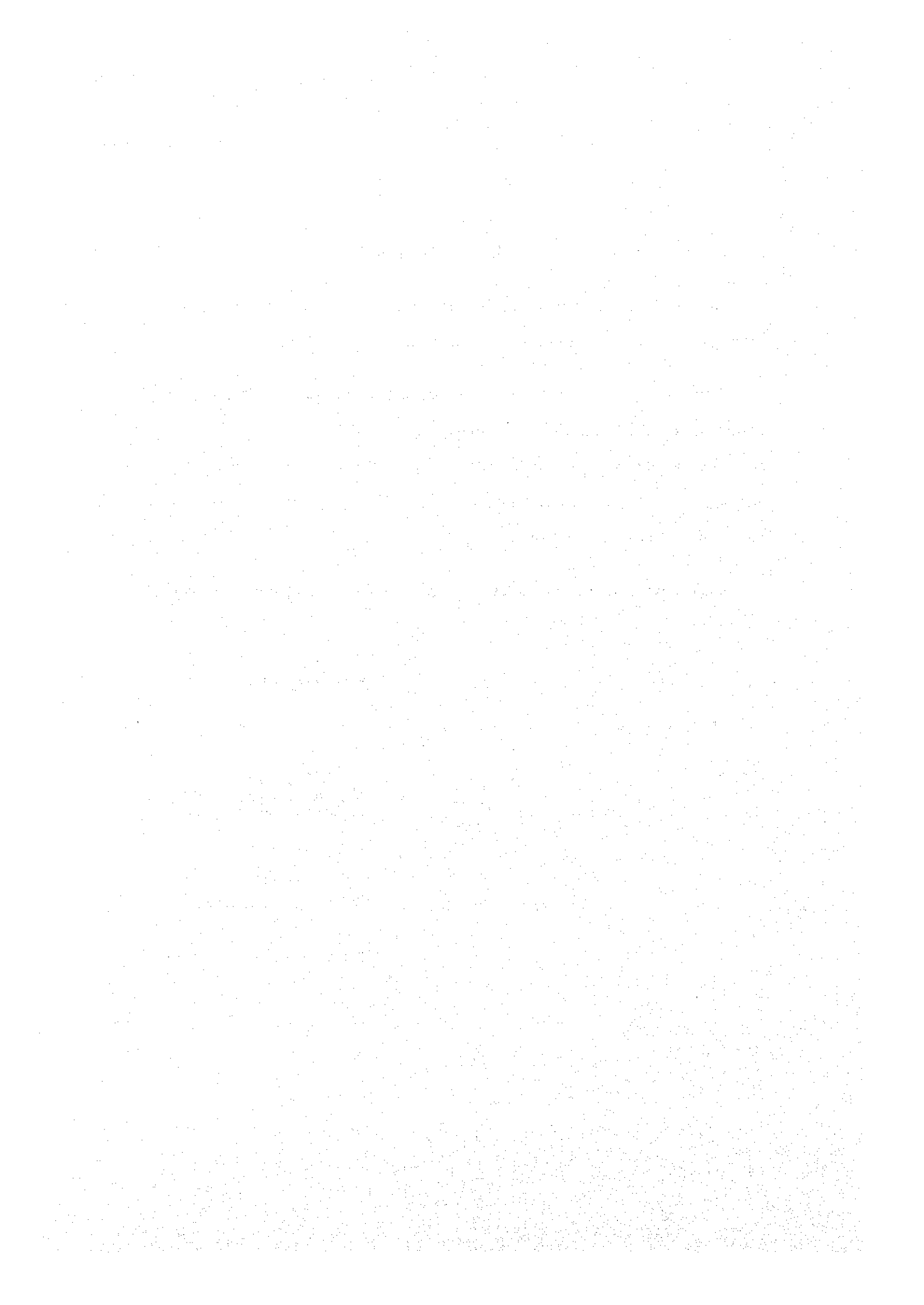
Finally, we hope that this report will contribute to further promotion of the project.

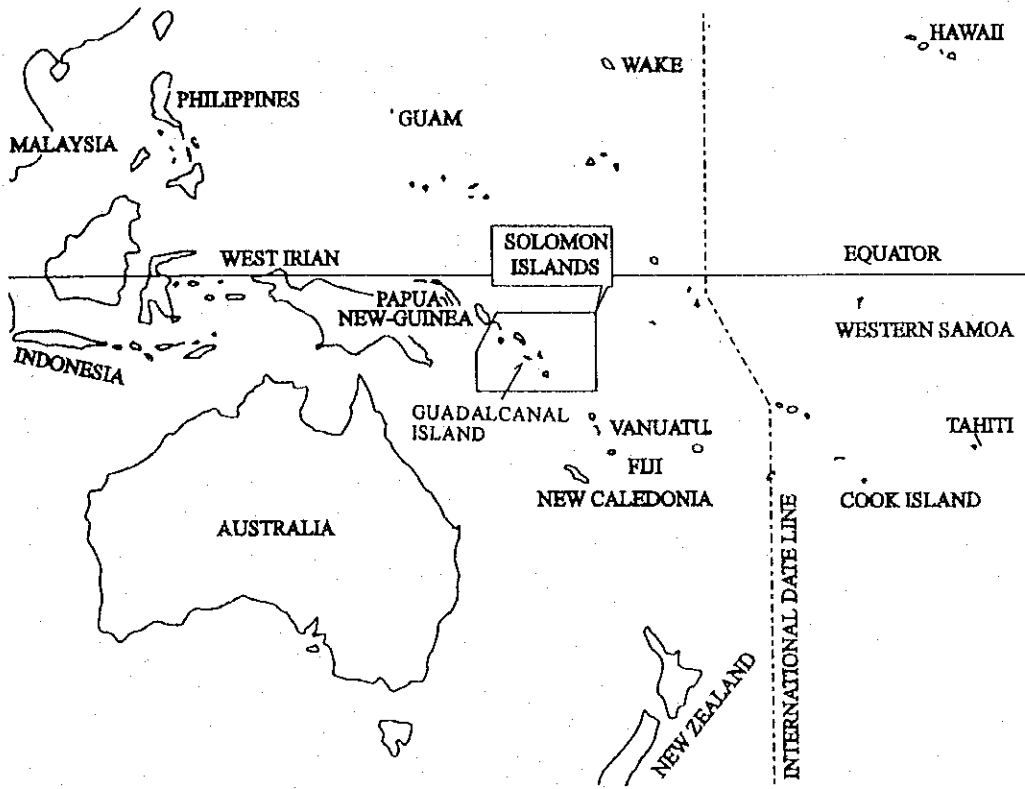
Very truly yours,



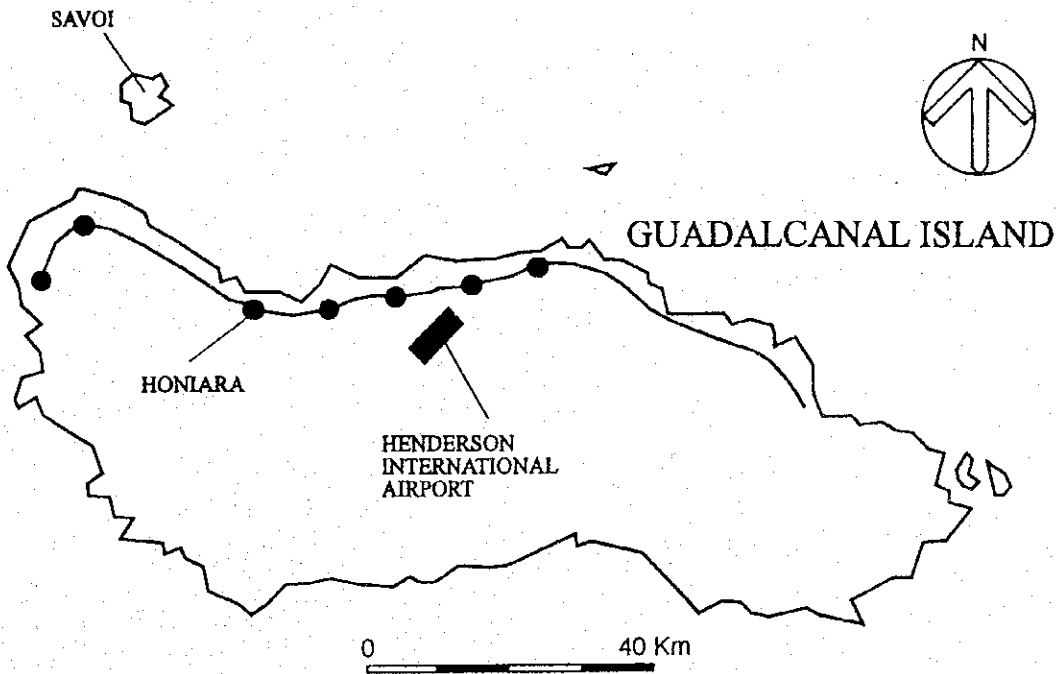
Makoto Tanaka

Project manager,  
Basic design study team on  
the Project for Henderson  
International Airport Development,  
Pacific Consultants International

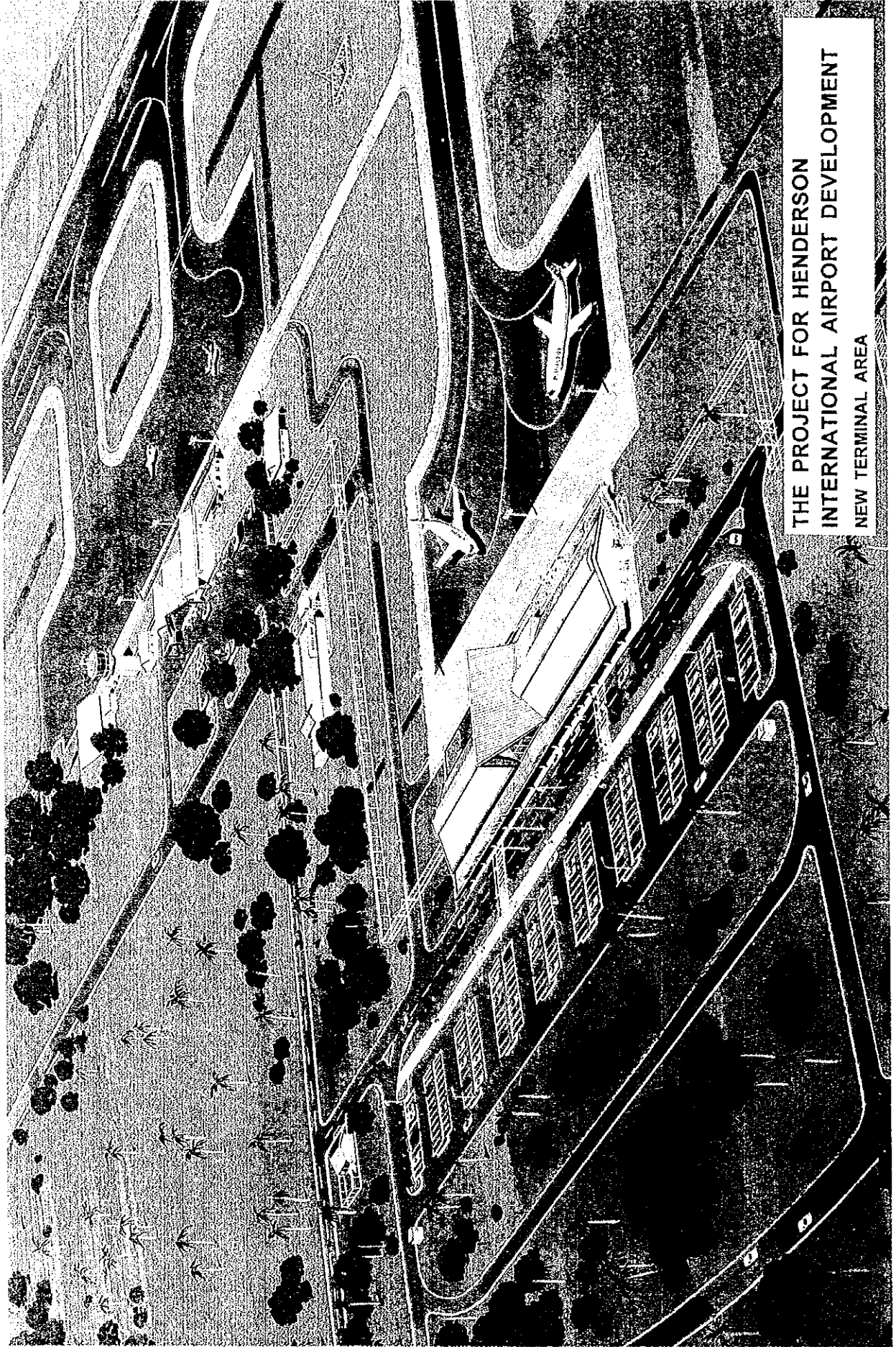




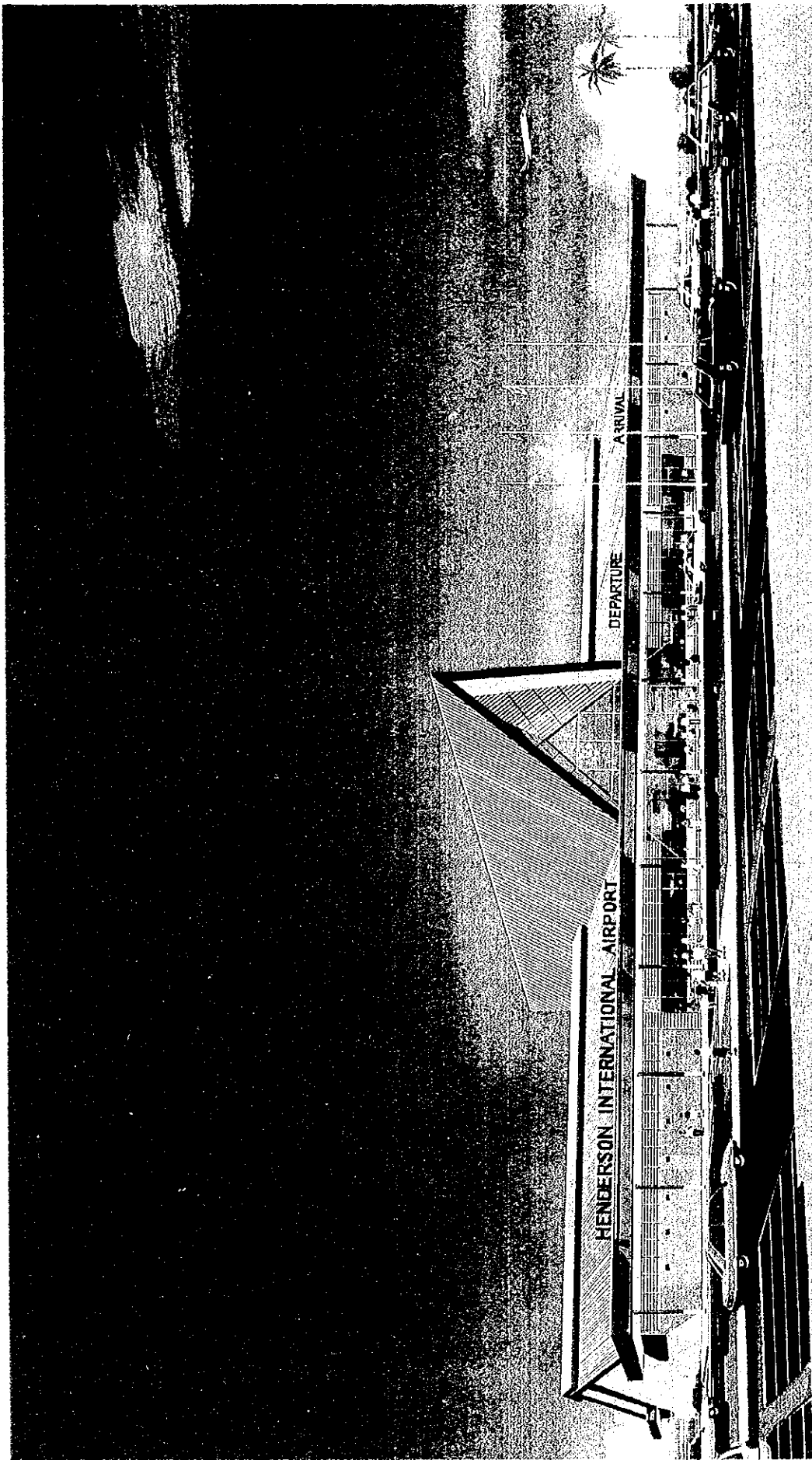
Project Location Map (1)



Project Location Map (2)



THE PROJECT FOR HENDERSON  
INTERNATIONAL AIRPORT DEVELOPMENT  
NEW TERMINAL AREA



THE PROJECT FOR HENDERSON  
INTERNATIONAL AIRPORT DEVELOPMENT  
NEW INTERNATIONAL PASSENGER TERMINAL BUILDING



## Abbreviations

A/P	Apron
B737	Boeing 737
B767	Boeing 767
BHN	Basic Human Needs
CAD	Civil Aviation Division
CIP	Commercially Important Passenger
CIQ	Customs, Immigration and Quarantine
CIQS	Customs, Immigration, Quarantine and Security
EU	European Union
F/S	Feasibility Study
F28	Fokker F28
GDP	Gross Domestic Products
GSE	Ground Service Equipment
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
JICA	Japan International Cooperation Agency
L/F	Load Factor
NOTAM	Notice to Airmen
PAPI	Precision Approach Path Indicator
R/W	Runway
SIEA	Solomon Islands Electricity Authority
SIWA	Solomon Islands Water Authority
STA	Station
T/W	Taxiway
TELEKOM	Solomon Telekom Company Limited
VCL	Vertical Curve Length
VIP	Very Important Person

## **SUMMARY**



## SUMMARY

The Solomon Islands, located in the middle of Melanesia, form an archipelago which consists of approximately one thousand islands spread over 1,700 km east to west. Guadalcanal Island is the largest island being 160 km long and 48 km wide. Honiara, the capital of the nation, is situated on the north coast of the island. Henderson International Airport, which is 10 km east of Honiara city, is the sole international airport of the Solomon Islands and also the center of domestic air services connecting major islands. There are international air routes to neighboring countries such as Australia, Papua New Guinea and Fiji. However, the facilities at Henderson International Airport are not developed enough to cope with the present traffic demand. The existing terminal building does not have enough capacity for handling current passenger traffic because no large-scale improvements have been made since a partial expansion in 1980's. Since congestion is frequently experienced today when handling passengers of only one B737, it will obviously be difficult to cope with increasing demand in the future.

In the light of such a situation, the Government of the Solomon Islands requested the Government of Japan for assistance for the development of the terminal area in 1988. The Government of Japan decided to implement a development study since the establishment of a master plan for any long-term development is indispensable for the implementation of an airport development. "The study on the Development Project of Henderson International Airport" was completed in 1991, which included a long-term development plan for the year 2010 and a feasibility study for a short-term development plan for the year 2000. This study recommended the short-term development plan which consists of the construction of new terminal facilities including a passenger terminal building, a passenger apron and a taxiway, remodeling of the existing terminal building, and installation of air navigation systems such as ILS and an approach lighting system. Based on the result of this study, the Government of the Solomon Islands requested the Government of Japan in February 1992 for grant aid for the construction of the new terminal facilities.

In response to this request, the Government of Japan decided to conduct a basic design study on the Project for Henderson International Airport Development, and Japan International Cooperation Agency (JICA) dispatched a basic design study team to the Solomon Islands from 9 April to 6 May 1995. Through the discussions with the Ministry of Culture, Tourism and Aviation of the Solomon Islands, the team confirmed the main points such as the items in the request and the measures to be taken by the Solomon Islands side. A site investigation of the new terminal area was also carried out. After the team returned to Japan, a basic design was executed and the results of the basic design study were compiled into the Draft Basic Design. The Design was explained and confirmed through the discussions with the officials concerned in the Solomon Islands from 20 to 30 August 1995.

Through the study, it was confirmed that the major items requested by the Solomon Islands side were the construction of an international terminal building and other related facilities such as an apron, a taxiway, terminal roads, car parking, and the relocation of the fire station. Remodeling of the existing passenger terminal building was excluded from the requested items. Contents of the basic design study are summarized as shown in the following table.

1 International Passenger Terminal Building	Steel structure, One-story with a partial upper story, Total floor area: 3,942 sq.m
2 Passenger Terminal Apron and Taxiway	[Apron] Flexible (asphalt) pavement, Area: 7,150 sq.m Parking space:(i) One B727 and one B737, or (ii) One B767 [Taxiway] Flexible (asphalt) pavement, Length: 282.5 m, Width: 23 m
3 Taxiway and Apron Lighting	Taxiway lights: 33, Apron flood lights: 3
4 Access Road, Terminal Road, and Car Parking	[Access road] Length: 430 m [Terminal road] Length: 1,870 m [Car parking] Parking lot: 210 [Pavement] Asphalt macadam pavement
5 Drainage and Fencing	[Drainage] Open channel, Trapezoidal Channel, Pipe culvert, etc. [Fence] Length: 1,100 m
6 Fire Station, Power House and Power Supply System	[Fire station] Steel structure, One-story, Floor area: 428.3 sq.m [Power house] Steel structure, One-story, Floor area: 132.0 sq.m [Power supply system] Emergency generator: 150 KVA
7 Others	Water supply, Sewerage system and Telephone line for the new terminal building

The period necessary for project implementation is 4.5 months for detailed design and 15 months for construction works. The project cost to be borne by the Solomon Islands side is 406 thousand Solomon Dollars.

After completion of this project, international passengers will be handled in the new passenger terminal building. Since the capacity of the facilities will be increased in comparison with the present situation, the current problem of congestion experienced in the existing terminal facilities will be resolved. The major improvements to the facilities are detailed as follows:

## I) International Passenger Terminal Building

The floor area per peak hour passenger, which indicates the service level of a terminal building, will increase from 2 sq.m in the existing terminal building to 11 sq.m in the new terminal building. The desirable range of this index is, in general, from 10 to 30 sq.m per passenger. Therefore, the service level of the terminal building will be improved by the enlargement of the building, and no congestion will be experienced since the value of the index is within the above range.

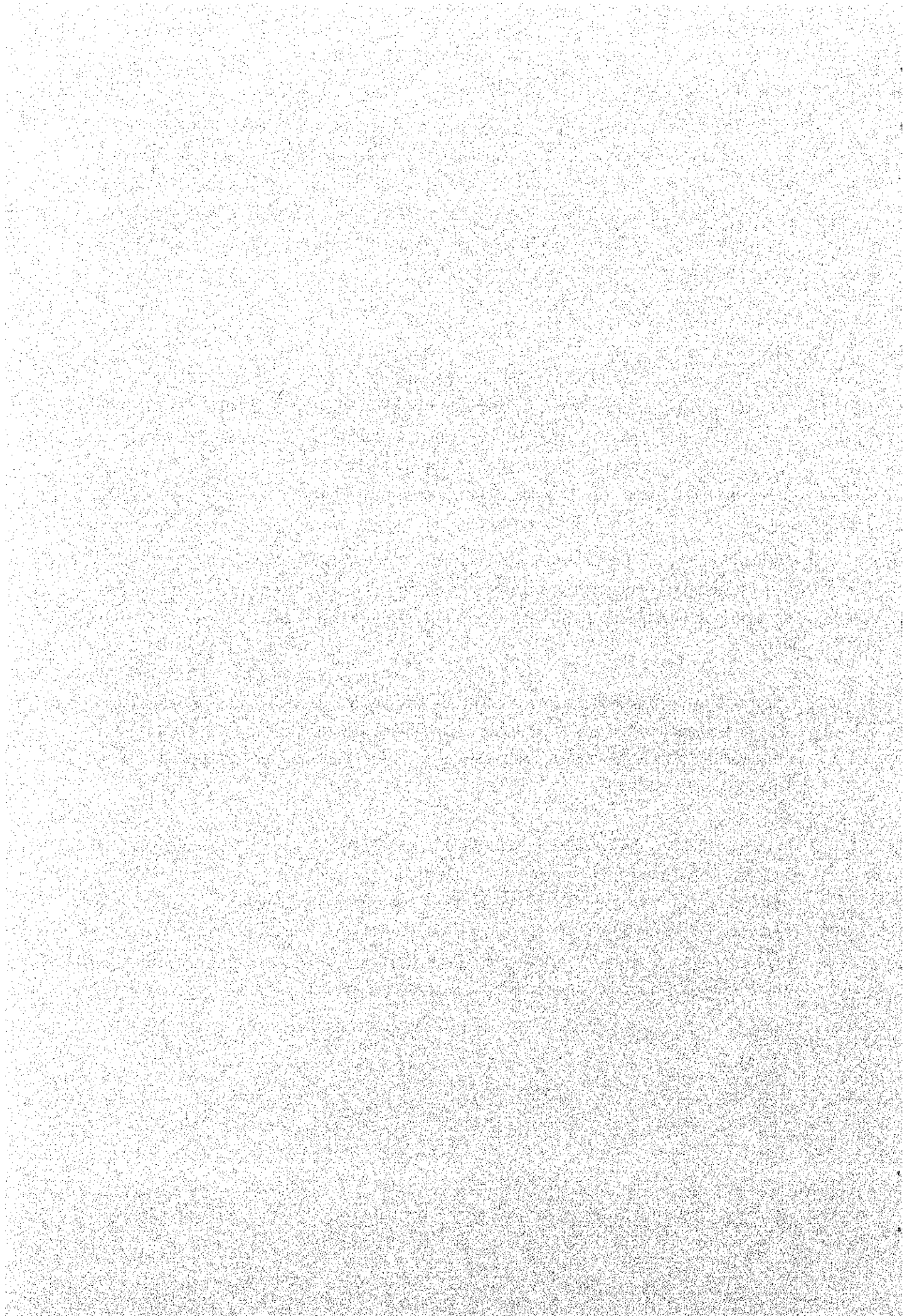
## ii) Apron

The apron area will be increased from the existing 16,000 sq.m to a total of 24,000 sq.m for the existing and new aprons. The new apron will be able to accommodate one B737 and one B727, and the existing apron will be exclusively used by eight to ten aircraft for domestic services. Alternatively the new apron will be able to accommodate one B767. This means that the shortage of parking space during peak time will be resolved.

Furthermore, the number of business passengers and tourists is expected to grow due to the increase in capacity of international traffic after the completion of the airport development. An increase in foreign tourists carried by charter flights will bring increased income to the tourism industry.

This project will contribute not only to the increased convenience of airport users, but will also activate the national economy and improve basic human needs through the development of the infrastructure. Since these benefits are expected, it is justified that this project is suitable for Japan's Grant Aid Program.

In order to maintain the function of the facilities developed by this project, proper operation and maintenance is required. The organization of the Solomon Islands side is considered to be sufficient in terms of manpower and budget. Moreover, organizational reform to establish a Civil Aviation Corporation instead of the existing CAD is under study. This reform would consolidate various functions of airport management, including finance management, into a new authority, and would contribute to a more smooth and effective implementation of this project.

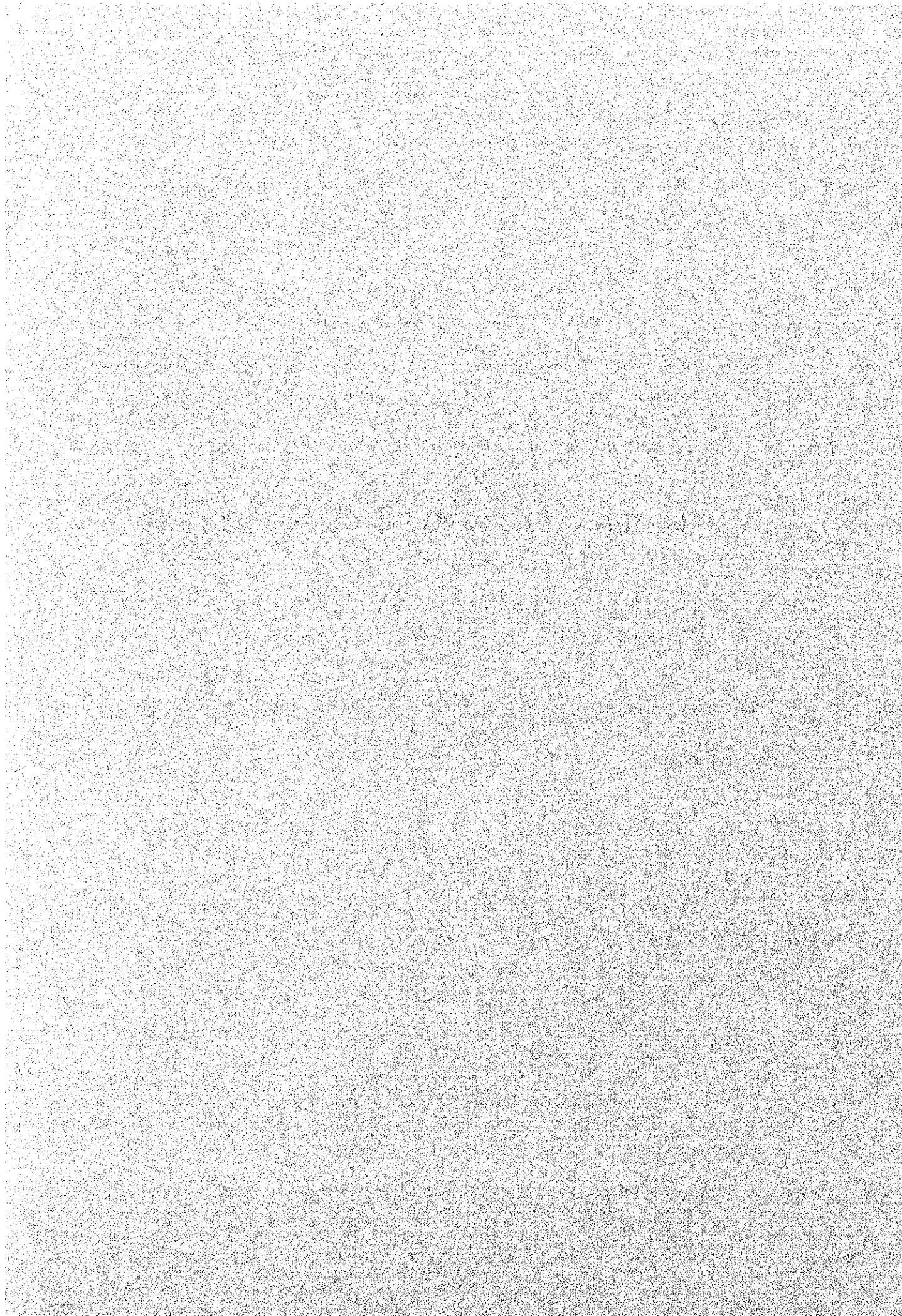


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## **CHAPTER 1 BACKGROUND OF THE PROJECT**





## CHAPTER 1 BACKGROUND OF THE PROJECT

The Solomon Islands are situated in the middle of Melanesia nearly 1,800 km northeast of Australia. They form an archipelago which consists of approximately one thousand islands. The area of the country is 29,785 sq.km and its population was 33,500 in 1992. The tropical climate of the Solomon Islands is relatively mild with an average temperature of 26°C and annual rainfall of approximately 3,000 to 3,500 mm. The rainy season is usually from around October to May, and cyclones strike the Solomon Islands during this season.

Guadalcanal Island is the largest island being 160 km east to west and 48 km north to south with an area of 5,336 sq.km. There is a mountain range lying along the south coast, while the north side of the island is relatively flat. The capital Honiara and Henderson International Airport are situated along this north coast. The major industry of the Solomon Islands is agriculture, and products include copra and palm-oil. Forestry and fishery are also important industries of the country.

Since this island country spreads out over 1,700 km east to west in the South Pacific, air transport plays an important role for international and domestic travel. There are international air services to neighboring countries such as Australia, Papua New Guinea and Fiji, which are operated mainly by B737 class aircraft. Henderson International Airport is, therefore, the gateway of the country, and the hub airport of the domestic air services connecting thirty-two domestic airports within the country.

Since the tourism industry contributes to the development of the national economy of many countries in this region such as Fiji and New Caledonia, promotion of the tourism industry is considered to be important in the Solomon Islands. Therefore, the Solomon Islands government regards the development of the international airport as one of its important policies.

Against the importance of the airport development as mentioned above, the budget is not sufficient for development and operation of the facilities. As a result, the facilities of Henderson International Airport are becoming old, and the capacity is not sufficient to cope with the present traffic demand. The existing terminal building especially does not have enough capacity to handle current passenger traffic from one B737 because large-scale improvements have not been made since a partial expansion in 1980's. The passenger terminal apron also does not have enough capacity to accommodate all aircraft including B737's for international routes and small aircraft for domestic routes during peak time. Furthermore, the location of the existing terminal building and apron is so close to the runway that it may be an obstruction when the runway strip is expanded or a parallel taxiway constructed. According to the results of the demand forecast, the number of international passengers will increase to 63,200 in the year 2003 in comparison with 43,000 in 1994.

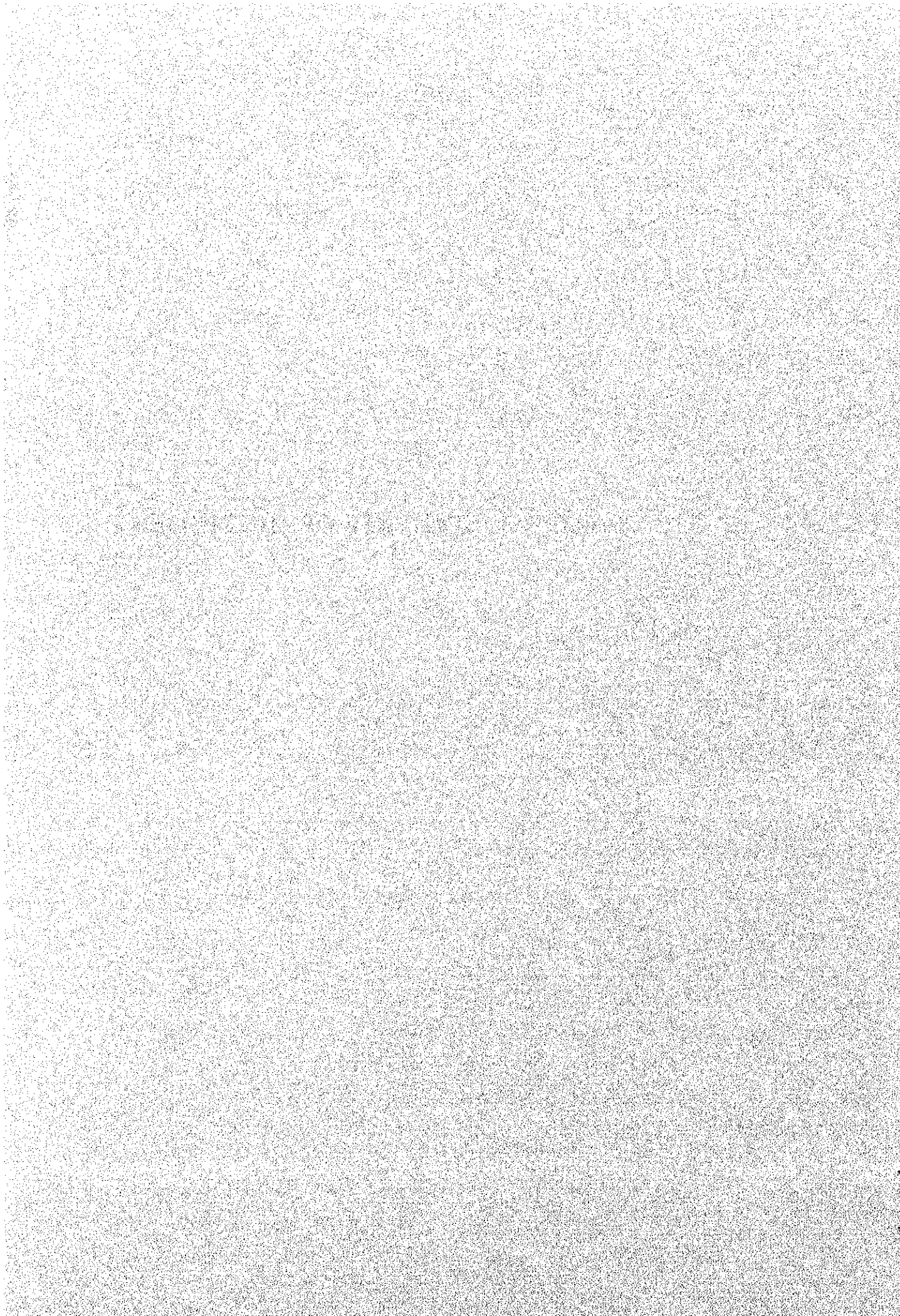
Unless the development of the airport facilities is made without delay, current congestion will become worse, and the function of the international airport will be further reduced.

In order to improve such a situation, terminal area development in line with the long-term airport master plan is required, instead any partial expansion of the existing facilities. A previous development of Henderson International Airport including a runway extension, construction of a control tower and development of the air navigation system, was carried out using funds from Kuwait, West Germany and United Kingdom in 1980's. The terminal area, however, has not been improved for many years except for a partial expansion in 1980's. Consequently the present problems have developed as mentioned before.

In the light of such a situation, the Government of Solomon Islands requested the Government of Japan for assistance for the development of the terminal area in 1988. The Government of Japan decided to implement a development study since the establishment of a master plan for any long-term development is indispensable for the implementation of an airport development. "The study on the Development Project of Henderson International Airport" was completed in 1991, which included a long-term development plan for the year 2010 and a feasibility study for a short-term development plan for the year 2000. This study recommended the short-term development plan which consists of the construction of new terminal facilities including a passenger terminal building, a passenger apron and a taxiway, remodeling of the existing terminal building, and installation of air navigation systems such as ILS and an approach lighting system.

Based on the result of this study, the Government of Solomon Islands requested Government of Japan in February 1992 for grant aid for the construction of the new terminal facilities. Runway upgrading is planned to be implemented from a Kuwait Fund, and the development of the air navigation system is planned by aid from Australia.

## **CHAPTER 2 CONTENTS OF THE PROJECT**



## **CHAPTER 2 CONTENTS OF THE PROJECT**

### **2-1 Objectives of The Project**

In the POLICIES, STRATEGIES AND PROGRAMME OF ACTION, 1995-1998, which is the framework of the National Development Plan of the Solomon Islands, importance is placed on the tourist sector in order to achieve the national objectives. Thus, the development of Henderson International Airport has become a major matter for the Ministry of Culture, Tourism and Aviation.

Based on this policy, the Project will expedite the development of the international passenger terminal building at Henderson International Airport, which is becoming old and presently lacks capacity. Thus, the aim of the Project is to construct the international passenger terminal building, apron, roads, car parking and associated facilities.

### **2-2 Basic Concept of The Project**

#### **2-2-1 Aim of The Project**

In response to a request by the Government of the Solomon Islands, the Government of Japan conducted a field survey for the Basic Design Study, from April to May 1995. As a result, it was confirmed that the passenger terminal area including the international passenger terminal building, was in need of immediate improvement. The following request items were confirmed:

(1) **New International Passenger Terminal Building**

The terminal building should be able to cope with the estimated demands of the target year and be capable of expansion in the future.

(2) **Passenger Terminal Apron and Taxiway**

An apron will be constructed to cope with the new passenger terminal building. The apron should be built so that future increases in aircraft stands and the handling of large aircrafts should be possible. A taxiway will also be built between the new apron and runway.

(3) **Taxiway and Apron Lighting**

Necessary lighting for the taxiway and apron will be installed.

(4) **Access Road, Terminal Road and Car Parking**

An access road connecting the new terminal area and the new Henderson Road will be constructed. Furthermore, a detour for the present Henderson Road, terminal roads

connecting the various facilities in the new terminal area, and car parking for airport visitors and staff will be constructed.

(5) Drainage and Fencing

Necessary facilities for surface water drainage will be constructed in the Project site. A security fence on the boundary between the airside (apron side) and the curbside (road/parking side) will be constructed in the new terminal area.

(6) Fire Station, Power House and Power Supply

Due to the construction of the new taxiway, a new fire station will be constructed. A power house will be constructed and power supply lines will be installed to provide power to the new terminal area.

(7) Others

Water supply system, sewerage and telephone systems will be provided in the new terminal area.

## **2-2-2 Review of Demand Forecast**

(1) Target Year for The Project

In the 1991 JICA Feasibility Study, the target year for the Short-Term Development Plan was set for the year 2000. However, in the construction of airports, the size is decided upon consideration of demands five years after construction. As the completion of the Project is around 1998, the target year is set at 2003.

(2) Review of Demand Forecast

The average annual increase of international passengers using Henderson International Airport over the past 10 years has been 2%, (from 29,000 in 1980 to 43,000 in 1994) showing a slow increase (Fig. 2-2-1). On the other hand, the number of domestic passengers is around 40,000 a year, leveling off or slightly decreasing since 1980. Based on the actual results until 1986, the JICA F/S estimates that the number of international passengers in 1995 will be 58,300 and 88,800 in 2000, however the actual demand in 1994 was 43,000 as mentioned in (1), which is less than the estimated increase.

The estimating method used in the JICA F/S was as follows:

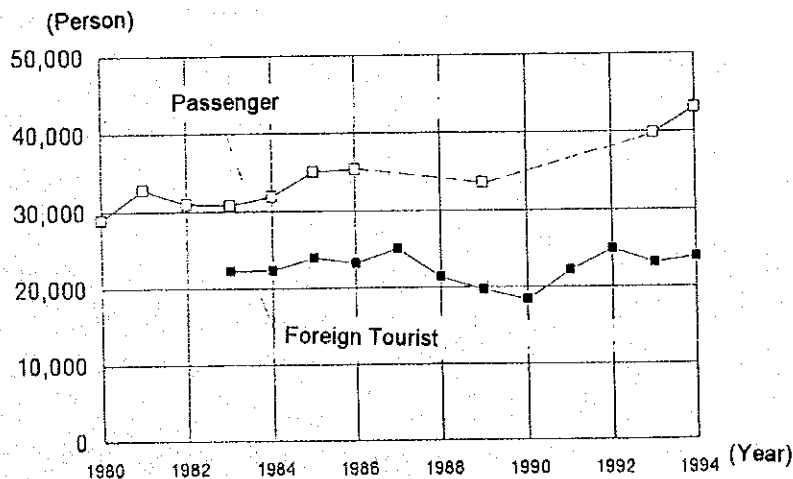
- 1) Based on the general fact that the traffic demand between the Solomon Islands and a certain country may be explained by the GDP of both countries and also the time taken, the Gravity Model was used as the estimating method.

- 2) Based on cross-sectional analysis, the elasticity of the traffic demand in terms of GDP was obtained, and the model method in 1) was modified to conform to the actual results.

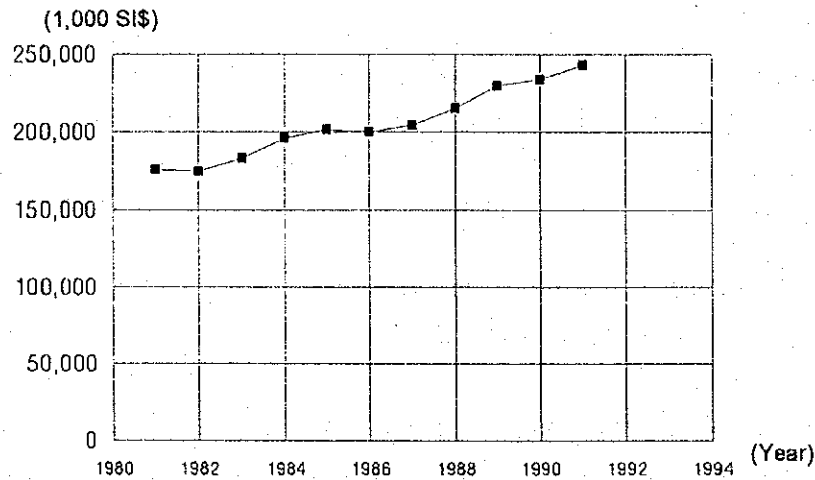
However, the elasticity of air passengers to GDP mentioned in 2) was obtained on the actual data of advanced nations. Thus, in the case of developing countries, the reasons for travel are not uniform and the increase in the number of passengers may not necessarily increase according to the increase in GDP.

Fig. 2-2-1 and 2-2-2 show the number of passengers using Henderson International Airport from 1980 and the transitions in GDP in the Solomon Islands. As is evident, the GDP shows a continuous increase, not only for the Solomon Islands but also for advanced countries such as Australia and the U.S. However, the number of air passengers shows a different move to the increasing GDP, increasing and decreasing alternately. Thus, a different forecast method to the GDP index will be used to estimate the number of passengers.

The Solomon Islands Tourist Department estimates that the number of foreign visitors to the Solomon Islands up to the year 2000 will be as shown in Table 2-2-1.



**Fig. 2-2-1 Changes in the Number of Air Passengers and Foreign Visitors to the Solomon Islands**



**Fig. 2-2-2 Changes in the GDP of the Solomon Islands**

**Table 2-2-1 Estimate of The Number of Foreign Visitors**

Year	Low Case		Medium Case		High Case	
	Forecast	Annual Growth Rate	Forecast	Annual Growth Rate	Forecast	Annual Growth Rate
1994	11,919	(2.5%)	11,919	(5.0%)	11,919	(8.0%)
1995	12,217	(4.6%)	12,515	(7.4%)	112,872	(11.5%)
2000	15,283		17,866		22,175	

According to the Tourist Department, the estimate is based on the fact that there has been a 7.3% increase in the number of visitors to the Solomon Islands, over the 3 year period from 1991 to 1994 ( from 11,105 in 1991 to 11,919 in 1994). The other factors are as follows:

- a) A stable political and economic environment is forecasted until the year 2000.
- b) Increase in funding provision through active market increase.
- c) It has been confirmed that the Government will place emphasis on the development of the tourist sector.



- d) 120 rooms are being added to two major hotels and accommodation projects of 50 room are being planned in the Honiara and Western province,
- e) Anuha Island Resort will open in 1996, with 100 rooms.
- f) Doma Resort (50 rooms) will open in 1997/1998 and the Mamara tourist development project will begin in 1999.

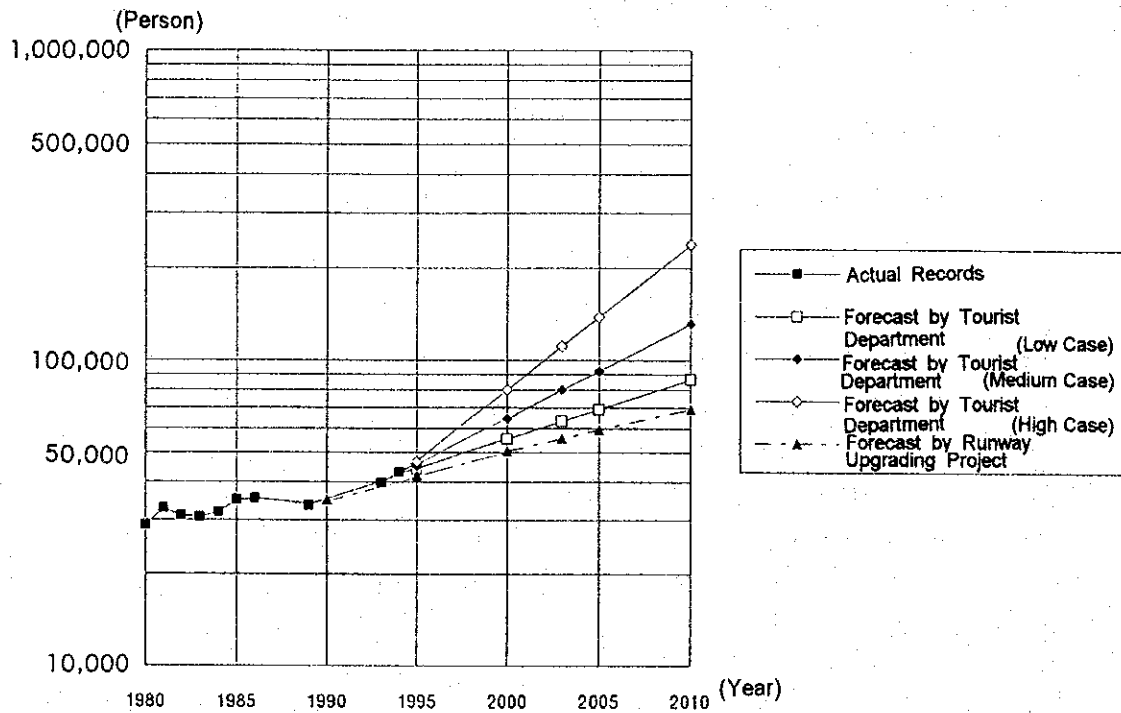
As can be seen in Fig. 2-2-1, half of the air passengers in the Solomon Islands are foreigners, thus an increase or decrease in the number of foreign travelers will affect the number of air passengers. Using the growth rate made by the Tourist Department, the number of air passengers in the future will be as the low case of 63,200 and 111,000 as the high case in 2003 as shown in Table 2-2-2, Fig. 2-2-3. Although the forecast is until 2000, the absolute demand value is small compared to the forecast value for international passengers of neighboring countries. Thus, an increase of 7.4% may be assumed for 10-15 years from 1995, and the increase rate was assumed to be the same from 2000 onwards.

Regarding the runway upgrading project by the EU, a forecast was made in 1992 after reviewing the JICA Study demand forecast. Their estimate value is much smaller than the low case estimate made in Table 2-2-2 and Fig. 2-2-3. Past cases show that the increase in the number of foreign tourists was not as much as estimated by the Tourist Office. The major reasons are the delay in construction of major hotels to accommodate tourists, and the continued existence of malaria.

Due to these reasons, of the three estimated values that were obtained based on the estimates of the Tourist Office, this Project will take the low case value as the demand value for the future number of air passengers.

**Table 2-2-2 Forecast for The Number of Air Passengers**

Year	JICA F/S Forecast	Revised Forecast			(Reference) Runway Upgrading Project (EU, 1992)
		Low Case	Medium Case	High Case	
1995	58,300	44,200	45,200	46,500	42,200
2000	88,800	55,300	64,600	80,200	50,400
2003	—	63,200	80,000	111,000	55,600
2005	131,700	69,200	92,200	138,000	59,400
2010	192,200	86,600	131,600	238,000	69,500



**Fig.2-2-3 Past Records and Forecast for Air Passengers.**

### (3) Selection of Future Aircraft

#### 1) Trend of Airline Companies

The largest aircraft in service presently at Henderson International Airport is a B737. According to major airlines using the airport, the future trend in fleet plan, charter flights and cargo flights are as follows:

##### a) Passenger Planes

###### i) Solomon Airlines

Solomon Airlines presently fly a B737-300, with flights from Honiara to Brisbane, Port Villa, Nandi and Auckland. However, the aircraft is on loan from Qantas Airways. According to Solomon Airlines, they wish to add another B737 type aircraft rather than introduce a large aircraft, such as a B767, to cope with the increase in passengers.

###### ii) Qantas Airways

Presently, Qantas Airways does not have any flights to the Solomon Islands. However, on a code share basis, Qantas Airways possesses half of the seats on the Solomon Airlines flight between Sydney and Brisbane (B737-300). Qantas plans to continue this system and has no future plans to fly its own aircraft to the

Solomon Islands. Thus, it is improbable that B767 type aircraft owned by Qantas will fly into Honiara.

iii) Non-scheduled Flights/ Charter Flights

In the past, B767s have twice landed at Henderson International Airport during a 1990 to 1991 period, once at Christmas and another at New Year's from Australia (however with load limits). Furthermore, in 1992 a B767 was used to carry the Australian Prime Minister. In addition, there are non-scheduled B737 flights once or twice a year.

b) Cargo Flights

The following applications for cargo flights have been made to the Civil Aviation Division, which is responsible for the management of Henderson International Airport:

Pacific Air Express	B737-300
Ting Hong Oceanic Enterprise	B727-100
Pacific Air Freighters	DC4

Apart from the above, there are companies wishing to ship fresh fish to Japan using DC8s.

However, the Civil Aviation Division has not granted permits due to the reason that the present runway does not have the strength to withstand the weight of the aircraft. The Civil Aviation Division will have engineers from New Zealand check the strength of the runway and will provide permits after the sufficient strength is continued.

2) Selection of Maximum Aircraft

The present strength of the runway (PCN 29) is inadequate for B727 and B767. However, according to the Civil Aviation Division, the runway upgrading project will be under way from 1996, through the Kuwait Fund, and B767 flights will be possible upon completion of the project.

Due to the fact that applications for B727 cargo flights are being made, and that improvement of the runway through the Kuwait Fund will allow B767 class operation, the types of aircraft for the apron and taxiway design will be:

Scheduled flights (Passenger flights):	B737 class
Scheduled flights (Cargo flights):	B727 class
Non-scheduled/Charter flights:	B767 class

#### (4) Peak Hour Movements

According to the present flight schedule, the peak hour for international flights is 11:20-12:20 on Sundays. During that hour, there is the arrival and departure of a B737 and the arrival of an F28. In this case, two aircraft will not be on the same apron at the same time. However, past records included in Appendix show many cases of arrival and departure times coinciding and two aircrafts are on the same apron. The usual combination is a B737 and an F28. However in August 1994, two B737s were on the same apron (seat capacity B737=130, F28=85)

Apart from Solomon Airlines, Air Nauru has two shuttle flights a week to Honiara using a B737-400. From September, the flights will be extended to Melbourne via Sydney. Thus, the number of B737 flights using the airport will be increased.

Under these conditions, it may be possible in the future for two B737s to be on the same apron at the same time. The Project will consider the fact that two B737s may land and depart during the peak hour.

#### (5) Peak Hour Passengers

The number of peak hour passengers is calculated based on the above-mentioned peak hour aircraft movement.

The number of seats and load factor per aircraft will be based on the records and the plans of the airliners using Henderson Airport.

Number of seats (B737 class)	130
Load Factor	70%

Thus, the number of passengers during the peak hour (departure and arrival) will be as follows:

$$130 \times 0.7 \times 2 \times 2 = 360 \text{ people}$$

### 2-2-3 Facility Requirement

#### (1) Passenger Terminal Building

The passenger terminal building should be able to handle 63,200 passengers a year and 360 passengers during peak hours (departure and arrival).

#### (2) Apron

The apron should have two parking stands, one for a B727 and the other for a B737. The apron should also accommodate one B767 using the above two stands.

#### (3) Car Parking

The capacity of the car parking area will be estimated according to the number of passengers during the peak hour. The number of parked cars per passenger during the peak hour will be 0.58 of the JICA Study value. (The field survey conducted in April 1995 included a counting survey for the peak hour, and the result was 0.56 which is close to the above result).

(4) Pavement

The pavement of the new international terminal apron and taxiway will be designed to handle B767 class aircraft. As mentioned in 2-2-2 (3), the runway improvement project provided by the Kuwait Fund will allow B767 class aircraft to land and take off. Non-scheduled and charter flights of B767 will be possible. Thus, the Solomon side has strongly requested that the apron and the taxiway be constructed to handle B767s.

## **2-2-4 Basic Concept of The Project**

As mentioned above, the basic concept of the Project for Henderson International Airport Development is the construction of an international passenger terminal building, apron (two stands for B727 and B737), taxiway, roads, car parking and associated facilities, in order that the airport may handle 63,200 passengers in 2003.

## **2-3 Basic Design**

### **2-3-1 Design Concept**

(1) Concept Towards Natural Conditions

What needs to be considered for the construction of the facilities in this Project is rainfall. Especially, with regard to buildings and civil facilities, the designs must take into account the rainfall intensity and rainfall pattern. Measures against rainfall must be carefully considered so that changes in drainage conditions will not affect airport facilities and areas surrounding the airport.

(2) Concept Towards Social Conditions

As the airport is the country's only international airport and is the gateway to the Solomon Islands, the design of the buildings should reflect Solomon culture and tradition.

(3) Concept Towards Construction Conditions

As there are few big construction projects in the Solomon Islands, the number of construction companies and consultants are few. The major ones are affiliated with