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16 June 1986

3301/3

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For Information:

The Chief Engineer
Army General Staff

RECONNAISSANCE REPORT

CYCLONE NAMU - SOLOMON ISLANDS MAY 1986

Introduction

1. May G.R. Jasonsmith and WO2 R.S. Everson, both RNZE deployed to HONIARA, SOLOMON ISLANDS (SI), on Thrusday 22 May 86 to offer advice to SI Govt Officials on the effects of cyclone NAMU (18 - 20 May 86) and to reconnoitre possible RNZE tasks as part of post cyclone rehabilitation.

2. The recon party returned to New Zealand on 1 Jun 86 and to their home locations on 2 Jun 86. Outwards travel was civil air to Auckland and RNZAF to Honiara. Return was by civil air throughout.

3. While in the Solomon Islands the team worked to the Chief Civil Engineer of the SI Ministry of Transport, Works and Utilities (Mr Tony Millership).

4. While efforts were made to gain a full over-all picture of the elevalitation caused by NAMU transport difficulties, expecially in gaining air-time, restricted the information that could be obtained. Never-the-less the information contained in this report is considered to cover the principal areas of likely military interest and involvement the the exception of medical and dental support.

Cyclone NAMU

5. The cyclone's effect seems to have been felt largely on three islands of the group:

a. Guadalcanal.

b. Malaita/Little Malaita.

c. Stewart Island some hundred miles of the north coast of Maliata.

6. Guadalcanal Island. While the effects of the high winds were evident in the jungle covering the interior of the island the rough broken trees and trees stripped of leaves, the bulk of the damage evident to the villages and infra-structure has been caused by flood waters. These and the large logs and other debris they carried have destroyed many villages, caused extensive damage to two major bridges and one airstrip and intermittout damage to the islands limited road network. No first hand evidence was obtained on the land/mud slide problems in the interior of the island.

a. Attached at Annexes A and B are two reports prepared while on the Solomon Islands that describe more fully the detail discovered by the recon team on Guadalcanal Island.

b. In summary: (NGALIMBIU and MBALASUNA)

(1) Two major bridges have been extensively damaged and require repair and temporary by-passes.

(2) The area adjcent to the Ngalimbiu River Bridge has been extensively damaged by flood waters and debris. The large Solomon Islands Plantations Limited (SIPL) village on the east bank of the river is un-inhabitable and Selwyn College (Secondary School) on the west bank has been similarly affected.

(3) The Mbabangakira airstrip, on the southern side (Weather Coast) of the island has been inundated but can be returned to limited use fairly readily.

7. Malaita/Little Malaita. These islands appear to have received more wind damage than water damage. There are many 'traditional' houses in the villages that have been wholly or partially destroyed by the wind and some relatively minor flood damage to one major bridge and a number of smaller ones. The principal damage observed to permanent structures was to the Secondary Schools at Su'u and Rokera.

a. A more comprehensive description of the damage to these schools is contained in the report at Annex B however, in summary:

(1) Su'u has suffered roof damage and loss of its water pumps.

(2) Rokera has lost six classrooms (half the school) and a number of sundry buildings plus sustained roof damage.

(3) Su'u jetty, which was in a poor state of repair, has been demolished by heavy seas.

SI Governmental Organization

8. Following the cyclone a Governmental Disaster Relief Committee was established (or possibly activated, this was unclear) to co-ordinate all disaster relief operations. A number of sub-committees to the main committee were established as things progressed. Generally it seemed to be taking some-time for the various committees and sub-committees to establish themselves, obtain information and formulate appropriate plans. At the time the RNZE party departed all parts of the organization still appeared to be at the information gathering stage and were reacting to medical, safety, food problems as they arose.

9. Within the Ministry of Transport, Works and Utilities (NZ equivalent MWD) there are very few people with formal tertiary qualifications and in particular only two architects and three engineers, thus the request for the team. Annex A describes the duties given to the team on deployment by the Chief Civil Engineer. Thereafter a watching brief was kept on the Mgalimbiu by-pass and efforts made to obtain as much other relevant information as possible.

10. By Monday 26 May 86 it became apparent that the Chief Civil Engineer had no further useful tasks for the team and arangements were made to return to NZ by RNZAF C130 the next day. On Tuesday morning 27 May 86 a request was received for an evaluation to be made of the damage to bridges on Malaita Island and to selected locations on the weather coast of Guadalcanal The latter task was to be undertaken the following day and helo support was assured however, only one trip was possible because of changed taskings and only Mbabanakira airfield was visited. On the visit to Malaita the team were accompanied by the Chief Architect and Senior Architect who were to obtain reliable information on the two secondary schools and other government buildings on the island.

11. It became obvious that a resonable proportion of the information sought on Malaika was known at Provincial Government level but not to the sub-committees concerned at National Government.

Possible NZ Army Assistance

12. No specific indications or requests for NZ assistance were received or over-heard by the team. It is considered that the incomplete information available to the SI Govt on the extent to damage is the major cause of this but also that lack of awareness of the Army's capabilities may be a significant contributory factor. To enable some form of discussions to be entered into by the staff of the NZ High Commission the list at Annex C was provided outlining tasks/areas where the Army may be able to assist if requested. No undertakings were made to provide assistance.

13. The highest priorities for rehabilitation that appeared to be developing with which the Army could assist were:

a. Re-opening roads and re-establishing river crossings.

b. Repairing and re-opening the three damaged secondary schools (of the four public secondary schools in the Solomons) so that students could proceed with their 3rd and 5th form exams this year.

c. Distribution of food and other relief supplies as the road-network opened up and aircraft depart.

14. Roads and River Crossings.

a. It is expected that the Ngalimbiu will be bridged by an expedient structure by 6 Jun 86. The balance of the works to provide a temporary crossing of the Mbalasuna and a more lasting solution at Ngalimbiu are dependant on the provision/supply of bailey bridging or similar material from beyond the Solomon Islands.

b. The proposed temporary bridge over the Ngalimbiu River is discribed at para 6 of Annex A. Given the likely haul distances for adequate fill for the new bridge abutments, and the length of approach road to be re-instated, it is estimated that this work could be completed by 20 or so personnel in three to six weeks.

c. The road for up to 800m either side of the Ngalimbiu Bridge has been destroyed as part of the expedient crossing being built over the river. The material from the road being used as fill. This will require restroation to tar-sealable standarad and has an estimated task duration of up to four weeks.

d. The Mbalisuna Bridge was unserviceable when the team left and work had not begin on providing an alternate crossing. It is expected that to complete the diverson discribed in Annex A would take 20 or so personnel between two and six weeks, dependant on haul distances the availability and type of bridging to be used, and the required life of this temporary crossing.

e. There are other areas of water damage throughout the main road system on both Malaita and Guadalcanal It is considered that this damage has been either caused or exacerbated by poor construction and/or design prior to cyclone Namu. To upgrade or repair all affected areas would take the full strength of 25 ESS a year or more.

f. The minor bridge repairs required on Malaita are within the capabalities local resources.

15. School Rehabilitation.

a. It is considered that there are sufficient skilled/ semi-skilled personnel at Su'u to carry out the repairs necessary.

b. Rokera School will require external assistance with rebuilding. It is considered that this would be a suitable task for a composite construction section of 10 to 12 personnel including plumbers and electricians. The 'normal' practice of utilizing local labour on hurricane relief projects would not be appropriate here because of lack of basic construction skills among the available population and the low population density.

c. Selwyn College, which is approximately 1 km from the Ngalimbiu Bridge, requires mainly silt clearance and improvement of drainage to enable it to be re-opened. Dependant on the weather and the rate of which the silt dries this task could take up to two weeks for a plant team of up to 10 persoonel.

16. Transportation and Movement Control.

a. It was apparent to the team that the SI Disaster Relief Committee was having some problems co-ordinating all the different transport agencies available to, and operating for, them. As the 'quick-fix' air re-supply is replaced with ship-borne aid it is expected that this problem would increase. A small MCC may help-resolve these problems.

b. A section of say eight 4t GS turcks would make a considerable difference to the ability of the authorities to distribute relief supplies by road. The road transport resources of the SI are very limited and fully committed to day to day subsistance tasks with very little medium term (more than two weeks) spare capacity.

17. Sawmilling. Many dwellings on Gaudalcanal were destroyed by flood waters as were the small copses of timber trees which could be used for re-building in the traditional manner. Sawn timber is very expensive for the villager to buy. It is suggested that the establishment of a portable sawmill, utilizing flood-borne timber deposited over the Gaudalcanal Plain, and the free distribution of the sawn timber produced, would have a significant impact on the rehabilitation of the villages. Up to 10 soldiers and six locals would be required to operate the mill at producation and this could last for a pre-determined period of up to, say two months producing between 1000 and 3000m of 100mm x 50mm timber per week, dependant on timber density.

Other Matters

18. Annex E contains information on industry support available in the Solomon Islands and other matters of peripheral interst.

19. Annex F contains information on those in the Solomon Islands who may be of assistance if any troops are deployed on relief work.

Detailed Reconnaissance

20. Lack of any indication of possible taskings prevented detailed reconnaissance. Should a specific request be received a detailed reconnaissance will be required before an accurate indication can be obtained of the manpower, machinery and other equipment that would be required and of task durations. The figures given in the preceeding part are therefore purely indications.

(G.R. JASONSMITH)
Major
Officer Commanding

Annexes:
A. Engineers Report Cyclone Namu
B. Second Report Cyclone Namu
C. Possible Areas of Army Assistance
D. Personnel and Equipment
E. Industry Support Available
F. People Who May be of Assistance
G. Map

COPY

ANNEX A TO
25 ESS 3301/1
DATED 16 Jun 86

The High Commissioner for New Zealand
HONIARA

27 May 86

ENGINEERS REPORT - CYCLONE NAMU

Reference: A. Map, x 711, Guadalcanal, Sheet 9/160/5 Edition 1, DOS 1976, 1:50,00, Solomon Islands

Introduction

1. Major George Jasonsmith and Warrant Officer Second Class (WO2) Ron Everson, both of the Corps of Royal New Zealand Engineers (RNZE) arrived in Honiara at 1810 hrs on Thursday 22 May 86 as part of New Zealand's initial response to the Solomon Island Government's request for assistance following Cyclone Namu. On arrival they were advised that:

a. they were to work to the Chief Civil Engineer for Works in the SI Government, Mr Tony Millership;

b. their prime task was to carry out bridge inspections; and

c. offer advise as may be sought or appropriate.

Area of Operation

2. The immediate concern, as expressed by Mr Millership, was to:

a. Reconnoitre the Ngalimbiu River, which had destroyed an 18 month old intermediate level bridge (Ngalimbiu Bridge GR 254543), with a view to obtaining a vehicle crossing over the river.

b. Inspect the high level bridge over the Matepono River (Simbanggua Brg GR 300553) and advise whether it could be re-opened for normal traffic.

c. Reconnoitre the Mbalisuna River in the vicinity of the Voluza Brg (GR 354534) which has been partially destroyed, with a view to obtianing vehiculat access.

d. Advise on the quanities of "Bailey Bridge" required for temporary replacement to the Ngalimbiu and Mbalisuna Bridges.

3. The order of priority for these tasks was Ngalimbiu, Matepono, Mbalisuna.

4. No other taskings were received and because of the pressurers on helicopter time an aerial reconnaissance was not possible.

Reporting

5. Regular and frequent briefings and dicussions were held with Mr Millership to enable him to keep fully up to date and advise the SI Government Relief Committee accordinly. A written report was also prepared for Mr Millership and a copy is appended.

6. A separate report will be made to the New Zealand Ministry of Defence.

Administration and Support

7. Generally there were no administrative problems given the circumstances.

8. Support from SI Government agencies was quite adequate given the scenario and the limitations imposed by the country's economy and burauracy.

Mendana Hotel
HONIARA

26 May 1986

Mr Tony Millership
Chief Civil Engineer
MInistry of Transport, Works and Utilities
P.O. Box G8
HONIARA

ENGINEERS REPORT - CYCLONE NAMU RELIEF

Reference: A. Map, x 711 Guadalcanal, 1:50,000 Solomon Islands Sheet 9/160/5, Edition 1, DOS 1976

Introduction

1. This report covers the reconnaissance of:

   a. Ngalimbiu Bridge on the Ngalimbiu River (GR 254543) and possible by-passes.

   b. Simbanggau Bridge on the Matapono River (GR 354534).

   c. The Voluza Bridge on the Mbalisuna River, and possible by-passes.

   d. Incorporated into the Ngalimbiu and Mbalisuna reports are the suggested methods of providing temporary access discussed between us over the period 23 - 25 May 1986.

Ngalimbiu

2. The eastern abutment and easternmost pier are both destroyed, two spans of the bridge have collapsed and appear to have been carried some distance by the flood waters, the western abutment has been undermined and badly scoured but is probably still sound, and its adjacent pier has moved and is thus suspect for further use. There are also several thousand tons of debris and silt piled up against what remains ofthe bridge.

3. What is understood to have a shingle bottom river is now largely sandy. However this sand is obviously moving quite rapidly and is very soft too. I would expect this sand to continue to scour for some time before the riverbed becomes stable once more.

4. The two callapsed structures (the pier and abutment) and the log-jam against the bridge are continuing to have a marked effect on the behaviour of the river, and in particular are deflecting its course in the east where it continues to erode the new bank behind the line of the eastern abutment.

Immediate Solution

5. The best solution to the immediate problem of providing vehicular access over this river is to construct a causeway and low-level bridge/bridges over the Ngalimbiu appropimately 75m down-stream of the destroyed bridge.

a. The causeway could be constructed from materials excavated from the bridge approaches in addition to that brought in from the borrow pits.

b. It must be protected from the action of the river by large logs set into its base.

c. Where possible to use it, it would be advisable to found the causeway on a geo-textile membrane.

d. The bridge should be built over the eastern section of the river that is currently carrying the most water, however, care must be taken that the increased velocities caused by the causeway construction do not cause excessive erosion of the eastern banks. Early placement of protective timbers is essential.

e. Immediately after opening work should continue on the causeway to raise it, and particularly the section containing the bridge, higher above the river level to avoid loss of the bridge is subsequent floods. When this is done a section of the causeway from the bridge should be deliberately left low to encourage the river to take it rather than the bridge.

f. Because of the volume still flowing in the river the bridge should be made as long as possible, at least 30m.

Temporary Bridge

6. The structure descibed above cannot be considered anything other than an expendient and should be replaced with a more durable temporary structure capable of sustained operation until a new parmanent structure can be put in place. While the options available are more open the following is suggested as being both econmical and relatively simple. It is accepted however, that examination of the upstream sides of the existing bridge piers, after removal of the acculated debris, may force reconsideration of this proposal.

a. It is suggested that a continous span Double Single Extra Widened Bailey Bridge 96m long (320ft) should be constructed on top of the existing piers adjacent to the damaged roadway.

b. Earthworks should return the western embankment to its abutment and on the eastern and extend forward to within 22m of the last undamaged pier. This will result in a structure some 24m shorter than the destroyed bridge but will avoid the need to drive a new piled foundation.

c. Earthen rather than piled abutments are envisaged on the eastern end.

d. Should it be deemed necessary to re-inforce the suspect pier it is suggested that a single-bent timber trestle founded on mudsills be constructed either side of the concrete structure and support the load of the bridge through a shared corbel which would also bear on the exising pier. To reduce the risk of scour of the mudsills I suggest placing a common shear-water around the foot of this structure and filling it with river gravel to a depth of one metre. After floods this should be inspected and 'topped-up' or even extended in height if appropriate.

Permanent Bridge

7. I strongly adivse against construction of another intermediate level bridge on the lower reaches of this river. The only available options as I see them are either:

a. A true low-level bridge designed to drown-out in floods and to withstand the debris pressures, *or*

b. A high bridge preferably single span, but certainly with as few spans as possible, and associated earthen approach ramps. These ramps should be pierced with large multiplate culverts or small bridges to provide additional waterways in times of floods and improved littoral access otherwise.

Matepono River

8. The suspect concrete upstands atop the two piers were inspected for cracking as requested.

a. Northern Pier: No cracking was evident although a small section of concrete has spalled off the upstream edge exposing one reinforcing rod. This rod is quite rusty and was probably the cause of the spall.

b. Southern Pier: There is a short crack, abut 200mm long at the base of this upstand on the upstream and river-most side only. It is understood that this crack is quite old.

c. Other Damage: The only other damage evident is the erosion of the leading edge of the road slab over the southernmost span immediately above the pier. While some of this is very fresh a lot of it appears quite old and could be the cause of the cracking.

d. Bridge Restriction: It is considered that no additional restrictions, above those in force before Cyclone Namu, need to placed on the bridge at this stage.

e. Restoration: The present detail is suspect as it creates areas of weakness and stress concentration within the concrete. It is suggested that each of these upstands be removed and be replaced with steel or hardwood upstands to provide for the difference in the depth of the stringers. Some minor repairs will obviously also be required to the deck. Careful planning, use of refabricated components and hardening agents in any concrete should enable closure of this bridge to be restricted to two periods of two days each. It could be opended during these times if a bailey over-bridge was used over the 6.8m gap created by the work.

Mbalisuna Bridge

9. The northermost pier has been demolished and the two spans it supported are missing. The northern abutment appears sound although the bankseat may have moved (original condition not known).

10. The river bed nowappears to be exclusively sand with pockets of silt. Sand particles are very fine and mositure content high resulting in quicksand in plces. One of the missing spans has been carried approximately 50m downstream and rests against the southern bank with most of its length submerged. This restriction in the flow of the river is causing significant turbulence and appears to be maintaining a very deep channel. The river is still transporting significant quantities of silt and sand.

11. Despite the above river seems likely to remain in its traditional bed and erosion of its banks appears to have been fairly limited.

Immediate Solution

12. The simplest and quickest way to re-open the bridge to traffic is seen to be to construct a low to intermediate level Double Double Extra Widened Bailey Bridge 35m (120ft) long across the river.

13. This bridge should be constructed over the line of the 'missing span' some 50m below the existing bridge. This is the area of deepest water and the narrowest gap. A long causeway (100±) and earthen abutment are required on the northern approach and on the southern a short causeway and earthen abutment founded on the remains of the 'missing' span.

Alternative Solutions

14. The alternative of launching an equipment bridge over the gap in the existing structure is not feasible with standard Bailey or standrad Extra Widened Bailey as a Triple Triple construction would be required.

a. Should modern high stength light weight Bailey bridging be available it may be possible to utilize this solution although the requirement would still be for a very substantial structure.

b. Heavy Girder Bridge could be used to span this longer gap providing a load carrying capacity of 30t over 64.5m in a Double Single re-inforced confirguration.

SIGNED:

(G.R. JASONSMITH)
Major
Officer Commanding

The High Commissioner of New Zealand
HONIARA

ANNEX B TO
25 ESS 3301/3
DATED 16 JUN 86
31 May 86.

SECOND REPORT - CYCLONE NAMU

References:

A. Engineers Report - Cyclone Namu dated 27 May 86

B. Map, Guadalcanal 1:50,000 Edition 1

C. Map, x 711, Guadalcanal, Sheet 9/159/12, 1:50,000, Edition 1, 1976

D. Maps, Malaita North and South, two Sheets, 1:150,000 Edition 2

Scope

1. This report covers those reconnaissances completed since the compilation of Reference A and includes some general closing remarks.

GUADALCANAL

2. A road recon to Tambea (Reference B GR 571977) revealed little damage other than erosion and partical collapse of the Poha River Bridge (Reference B GR 599960) caused by erosion of the northern abutment and partial collapse of the centre pier. A by-pass has already been established. It is understood that the Bridge was to have been replaced by a permanent structure shortly but that this would not have included re-piling.

MBABANAKIRA

3. An aerial and ground reconnaisssance of the Mbabanakira Airfield (Reference B GR 592923, Reference C GR 920230) was conducted on 28 May 86 to determine the requirements for re-opening it to traffic.

a. The strip appears to have been approximately 70m (200ft) wide and 700m (2000ft) long before the cyclone. It has been inundated by flood waters from the near-by Itina River which has deposited sand and debris on the runway and severely eroded and damaged adjcent plantations, particularly to the south.

b. A group of large logs on the strip at about 500m must be removed (work has started) and the ridges in the sand smoothed out before the strip can re-open for regular traffic. The James Air "Fletcher" was using it "as is". If is considered that this work would be well within the capabilities of local labour given appropriate supervision.

c. In conjunction with the above work it is recommended that soil/sand should be replaced on those areas when it has been eroded and that a re-grassing programme be undertaken as soon as possible to stabilize the sand surface and reduce the dust hazard and rutting in the wet.

d. The erosion and other damage to the airfield and southern plantations has left an area about 100m wide and 400m long clear of all vegetation as an extension to the southern end of the runway. It is considered that this clearing could be used to establish an extension to the Mbabanakira airfield if considered necessary. An over-all length of 3000 to 3500 if is achievable with the majority of work bieng earthworks (fill) and drainage.

MALAITA

4. Maj Jasonsmith and WO2 Everson deployed to Malaita by civil air on 29 May 86 along with two personnel from the Chief Architects Office, SI Ministry of Transport, Energy, Works and Utilities and one each from the Ministry of Economic Planning and the Rural Serivces Project.

5. A vehicle-borne reconnaissance was mounted to the north of the island but was only partially sucessful, being turned back by a flash flood at Mbita'ama (Reference D GR 574071). A reconnaissance was also conducted along the Trans-Insular road with the express surpose of examining the major bridge over the Kawer'a River (Reference D GR 703942).

6. On the 30 May 86 the party boarded the SI Govt Motor Vessel Tulagi and proceded on an inspection of the Secondary Schools at Su'u (Reference D GR 710988) and Rokera (GR 932768). On completion of these two inspections the vessel returned to Honiara arriving at 0130 hrs (local) on 31 May 86.

7. Annex A contains details gleaned during these reconnaissances.

APPENDIX 1 TO
ANNEX B TO
25 ESS 3301/3

RECONNAISSANCE REPORT, MALAITA

Reference: A. Maps, Malaita North and South, two Sheets, 1:150,000, Edition 2

Roads and Bridges, Coast Road

1. FIU River Bridge. (GR 688037) Trafficable:

   a. Southern abutment and bankseat badly damaged and both require reconstruction. Log jam against southern abutment requires clearing.

   b. Reconstruction should concentrate on re-making a firm bank-seat and consolidating the gabions that have moved. In conjunction with this, the river itself should be re-diverted so that its approach to the bridge is a straight line to the main channel.

   c. This was the most severly damaged bridge seen on the island.

2. Dala Village Bridge. (GR 685050) Trafficable. Northern bank-seat beam broken, an old fracture. Southern abutment one gabion undermined.

3. Fauabu. (GR 690052) Trafficalbe. Minor undermining of northern abutment.

4. Ruafoki Village. (GR 691057) Trafficable. The seaward side of the southern abutment approximately 50% undermined. In need of urgent re-build of this abutment and clearance/excavation of water channel in centre of stream to prevent re-occurance.

5. Mandalua River. (GR 688061) Trafficable.

   a. Log jams against the low-level bridge require clearing. Southern abutment badly scoured. Temporary repair has been affected locally but full restoration of roadway required urgently.

   b. Low level bridge having marked effect on river characteristics in its vicinity.

7. Fo'ondo River. (GR 683064) Trafficable.

   a. Log jams against this low-level bridge require clearing. Northern abutment badly scoured and gabions moved. Temporary repair has been affected locally but full restoration of roadway required urgently.

   b. Low level bridge is noticeably affecting river flow characteristics.

8. M'bina Bridge (GR 680066) Trafficable. North abutment partially scoured, requires fill.

9. M'bina Culverts (x 2) (GR 680067) Trafficable).

a. Both of these culverts appear to have been partially destroyed by the explosive action of highly compressed air from breaking surf.

b. Suggest that both be replaced with 800mm dia pipes (VS 600 at present). Three pipes (7.2m total length) required at each location.

10. Takawa Coast (GR 675069) Trafficable.

a. Ocean cavern and blow-hole under the road have enlarged/callaped causing width restrictions.

b. Engineering survey of caverns required to assertain if there has been appreciable loss of strength before remedial work is undertaken.

11. Mbita'ama (GR 674071). The recon party was prevented from crossing the stream approximately 2km short of the village by a flash flood. Suggest that severe erosion of stream crossing abutments is likely and that road will be temporarily closed until repairs can be made.

12. General Comment. There are many sections of this road, the Coast Road, where the surface is in very poor condition. This is attributed mainly to lack of adequate road-side drainage and especially culverts, even improvised culverts would be an improvement, and to lack of adequate maintenance in the past.

Trans-insula Road

13. General. Lower traffic densities and better drainage have resulted in this road remaining in adequate to fair condition over the section traversed. Some minor slips and subsidence are obviously under repair although this had stopped because of mechanical failure.

14. The cyclone has had no discernable affect on the major bridge over the Kawer'a River at GR 0695045.

15. Reliable reports (from Mr T Ingam, ZANEX Corps, Malaita) indicates that the road is still in good condtion to within approximately 6 km of Atori, on the Pacific Coast, where the road is cut by slumping on either side of a low cause-way at approximately GR 709036. A temporary repair was to have been affected, using manual labour, on 30 May 86 to allow light traffic to use the road.

Secondary Schools

16. The Government Architect has examined the Su'u and Rokera schools closely and prepared estimates for their restoration.

17. Su'u (GR 712986).

a. Of the 17 buildings damaged four are school staff-quarters and three are class-rooms that have lost their roofs. Some of the roofless buildings have also sustained water damage to their floors which will require replacement.

b. The school and village water supply is temporarily out of commission. While the electric motor was removed before the cyclone struck the pump and pumphouse were destroyed in the flood.

c. The old Su'u jetty at GR 713985 received its "coup de grace" from Namu. It had apparently been damaged past but had been patched and modified to keep it operational. It is now totally beyond repair being completely broken up and scattered over a wide area. There appears to be up to 3m of water off the former head of the jetty at mid-tide.

d. It is the writers opinion that the staff of the Mission can restore most of the damage without further assistance other than possibly finance. The jetty would require re-construction, probably by outside agencies.

18. Rokera (GR 767933).

a. This school has been extensively damaged by cyclone Namu and exhibited the worst wind damage seen by the writer in the Solomon Islands.

b. (1) Two double classroom blocks each 2 x 21m have been destroyed leaving only the concrete slabs upon which they stood.

(2) One classroom has had one wall and its roof removed and another, the woodwork shop, its roof removed (each approximately 6m x 10m).

(3) The school bakery (4m x 10) and a partially completed kitchen extension (6m x 16) have been destroyed although in the case of the kitchen extension the concrete slab remains.

(4) Two staff quarters of semi-parmanent construction (galvanized iron roofs, leaf walls, sawn timber frame) have lost their roofs.

(5) Two ablution and latrine blocks have lost their roofs and because of design and sanitary problems should be rebuilt.

(6) The water supply was damaged but has received make-shift repairs. Storage is apparently inadequate and upgrading of the scheme has been proposed in the past. There is approximately 2km of reticulation involved and two new 10,000L tanks required.

ANNEX C TO
25 ESS 3301/3
DATED 16 JUN 86

POSSIBLE AREAS OF ARMY ASSISTANCE

The following list of possible areas of assistance was given to the NZ High Commission, Honiara.

"Tasks that can be undertaken by the Royal New Zealand Engineers (NZ Army)

Earthworks

Vertical Construction — Carpentry/Blocklaying
Electrical
Plumbing

Quarrying

Well Drilling

Sawmilling

Transportation (Road) — 4 x 4 .75t
1.5t
4t
6 x 6 8t

Medical/Dental

Bridge Construction

Potable Water

Airfield Construction/Extension

Clearance Diving"

ANNEX D TO
25 ESS 3301/3
DATED 16 JUN 86

PERSONNEL AND EQUIPMENT

1. The following is an expansion of the idicative figures given in the body of the report. The order of accuracy is very low.

2. Ngalimbiu Bridge. The bridge and its approach roads:

a.	Personnel	20 to 30
b.	Plant	9 to 12+
c.	Vehicles	15 to 20 (incl bin and fuel vehicles)
d.	Time	Two to Three months

3. Malasuna Bridge:

a.	Personnel	As Above
b.	Plant	As Above
c.	Vehicles	As Above
d.	Time	Two to six weeks

4. Selwyn College:

a.	Personnel	10 to 15
b.	Plant	6 to 9
c.	Vehicles	8 to 12
d.	Time	up to two weeks

5. Rokera School:

a.	Personnel	10 to 12 Tradesmen
b.	Plant	Nil
c.	Vehicles	one or two
d.	Time	up to three months

6. Sawmilling:

a.	Personnel	8 to 10 plus up to 10 locally employed civilians
b.	Plant	4 to 8
c.	Vehicles	4 to 6
d.	Time	as required, six weeks minimum

ANNEX E TO
25 ESS 3301/3
DATED 11 JUN 86

INDUSTRY SUPPORT AVAILABLE

Equipment Suport

1. Landrover. Very limited. Although there are a resonable number of older Rovers on the road, and in the PWD dump, Landrover dealer was not located.

2. Mercedes Benz. The nearest dealers are in Queensland and Papua New Guninea.

3. Mack:

   a. Morgan Equipment are the Mack dealers for the Solomon Eslands, but have no vehicles there. Morgan Equipment (SI) are a subsidary of Morgan Equipment (Queensland) which also has branches in Papua New Guninea, the nearest being in Bougainville which is served by a regular air-line. Desipte the lack of Mack vehicles in the SI Morgan equipment will be able to provide some support if Mack tippers were deployed.

   b. Details of vehicle model and serial numbers and support required need to be discussed during any detailed reconnaissance.

4. Caterpillar:

   a. Hastings Deering are the SI Caterpillar dearlers. They are a subsidary of Hastings Dearing (Queensland). They have a fleet of over 200 machines in the country and hold stocks of over $1,000,000 ($SI approx equal $NZ).

   b. They have readily available spares for most of the newer Caterpillar machines in the Army fleet with the exception of the D4E's of which there are none in the SI. In discussions the Manager stated that given details of machine models and serial-numbers they would be prepared to in-scale the parts required to support an Army deployment.

   c. Hastings Deering were also advised that there were a number of machines in the fleet that were still under waranty. No difficulty was seen in accepting the waranty obligation from Gough, Gough and Hamer (NZ).

5. Detroit Diesel. Morgan Equipment include these engines in their range, but not Allison Transmissions. Detroit Diesel are not prominent in the Solomon Islands.

6. Electrical. Island Enterprises Ltd are the major electrical contractor in the SI and have the capability to re-wind electrical motors and generators. They also service and carry parts for many small motors, the one most applicable to the Army being Petters Diesel. It is possible that they may soon be appointed Perkins Diesel dealer for the Solomon Islands.

7. Fuel, Oil and Lubricants. Both Shell and Mobil are represented in the Solomon Islands with Shell being by far the major supplier and importer. Retail fuel prices in Honiara are:

a. Diesel $SI 0.59/L

b. Petrol (Super) $SI 0.49/L

Detailed discussions were not held with Shell or Mobil as to the possible supply of FOL.

Other Support

8. Banking. International banks represented in Honiara are ANZ and Westpac. ANZ is the larger and is the one used by the NZ High Commission.

9. Air Travel. Air Pacific, Air Naru and Air New Guinea fly internationally from Honiara New Zeland and/or Australia.

ANNEX F TO
25 ESS 3301/1
DATED 16 JUN 86

PEOPLE WHO MAY BE OF ASSISTANCE

Rosemary Banks
First Secretary

ew Zealand High Commission,
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oniara, SOLOMON ISLANDS

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Ministry of Transport, Works & Utilities

Martin R. Watts B.Sc (Hons)
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BARRIE CAMPBELL
SENIOR TRAINING OFFICER

x/L 239

inistry of Transport, Works & Utilities
O. Box G8
oniara
OLOMON ISLANDS

Telephone: 23012
or 21141 Ext. 57

Telephone: 30274/30350
Telex: HQ66374

Private: 30293

ROGER WOLFE
Branch Manager

HASTINGS DEERING (SOL. ISL.) LTD.
KUKUM IND. ESTATE, HONIARA
P.O. BOX 802, HONIARA

YOUR CATERPILLAR DEALER

MORGAN EQUIPMENT (SOLOMON ISLANDS) LTD.
MINING AND CONSTRUCTION EQUIPMENT

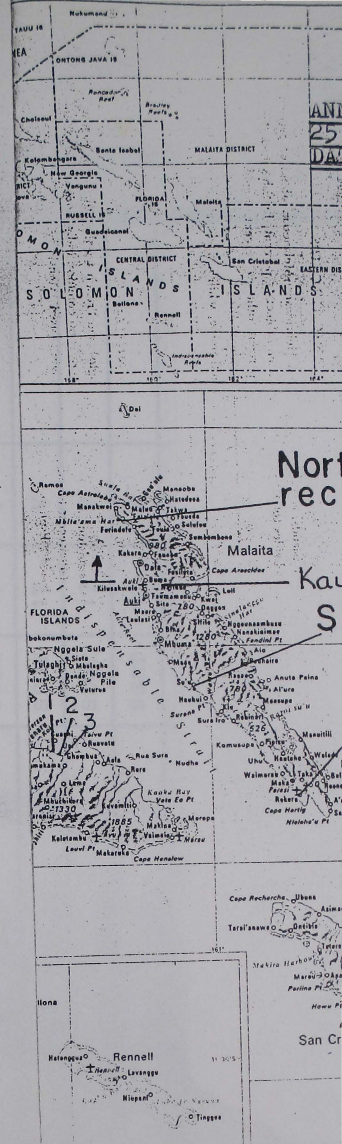
PAUL G. ASSAF
RESIDENT MANAGER

P.O. Box 843, Honiara,
Solomon Islands.
Phone: BH 30171
Telex: HQ 66366

ISLAND ENTERPRISES LIMITED
ELECTRICAL CONTRACTORS - SHIPS CHANDLER
ENGINEERING REPRESENTATIVES

PHIL BRADFORD
(Managing Director)

BOX 364, HONIARA, SOLOMON ISLANDS.
Telephone: 30152 Cables: POWER HONIARA Telex: HQ 66393



ONTONG JAVA IS
Choiseul
Santa Isabel
MALAITA DISTRICT
Kolombangara
New Georgia
Vangunu
Malaita
RUSSELL IS
Guadalcanal
CENTRAL DISTRICT
San Cristobal
SOLOMON ISLANDS
ISLANDS
Bellona
Rennell
Malaita
FLORIDA ISLANDS
Nggela Sule
Nggela Pile
Auki
Cape Henslow
Rennell

RF APPOINTMENTS

SME

NZ V/108/4(P)(Regt)

Appointment/Trade	Rank	Name & Initials	Rank	Line	Colm	Remarks
Sch SM	WOI	NEPIA MTOT	WOI	15	S	
SQMS	WOII	HUGGINS RJ	WOI	16	S	
Instr RNZE (16)	WOII	KEARNEY WA	WOII	17	T	
" "	SSGT	GRACE MS	WOII	17	T	
" "	WOII	LAMB WH	WOII	17	T	
" "	SSGT	FOLEY NE	SSGT	17	U	
" "	SSGT	MUNRO P	SSGT	17	U	
" "	SSGT	WALSH C	SSGT	17	U	
" "	SGT	STIRRAT WN	SSGT	17	U	
" "	SGT	HUBNER VMT	SSGT	17	U	
" "	SGT	GLASGOW DR	SGT	17	V	
"	SGT	HALLAM AJ	SGT	17	V	
" "	SGT	PETTERSEN NMA	SGT	17	V	
" "	SGT	ROSS SM	SGT	17	V	
" "	CPL	JACKSON PL		17	Y	
" "	CPL	FEE WL		17	Y	
" "	SPR	WHITE RJ		17	Y	
" "				17	Y	

RESTRICTED

Foreign Economic Relations

(i)

5-8

RESTRICTED

ELB SHORT SURVEY

BRITISH SOLOMON ISLANDS PROTECTORATE

for Solomon Islands

Clerk AA	SGT	ATKINSON	JG	SSGT	18	U	
Clerk Tech	SGT	BROOKER	AS	SGT	20	V	
Tpt NCO	SGT	CALLAGHAN	GED	SGT	21	V	
Driver (2)	CPL	MARTIN	AB		22	Y	
"	SPR	WHAKATOPE	C		22	Y	
Engine Fitter RNZE(4)	CPL	ANGLESEY	MG		23	Y	
" " "	LCPL	JONES	KC		23	Y	
" " "	CPL	MEADE	BE		23	Y	

Appointment/Trade	Rank	Name & Initials	Rank	Line	Colm	Remarks
Engine Fitter (contd)	CPL	TOIA WD		23	Y	
Plant Op	CPL	CORLETT GE		24	Y	
Storeman Tech				26	Y	
(WRAC) Clerk AA (2)	PTE	HOOPER JA	LCPL	19	X	
" "	LCPL	NASARIO A		19	Y	

LB.

Clerk AA	1	ex 5 Spn Sqn SPR HAPUKU BD	40	Y	
Storeman Tech	1	ex 5 Sp Sqn	61	Y	

Civilian Staff

Storeman	2	MR PEEK. N.			
Typist	1	MRS MCFADYEN A.			

Attached until Hand-over of 'Q' A/c completed:
WOI B.D. HOOK

Hot Solomon Islands

Clerk AA	1	ex 5 Spn Sqn SPR HAPUKU	RD	40	X	
Storeman Tech	1	ex 5 Sp Sqn		61	Y	

Civilian Staff

Storeman	2	MR PERRY	N		
Typist	1	MRS MCFADYEN	A		

Holding Offr Appt until transferred to Reserve 29 Jul 77
WO11 L. THOMAS

Officer Appointments

OC & CI	Maj C.R. Parker
Instructor	Capt R.B. Simmons
Instructor	Capt A.R. Adair

for Solomon Islands

EIB SHORT SURVEY

~~BRITISH~~ SOLOMON ISLANDS ~~PROTECTORATE~~

Survey 1974

CONTENTS

PART I : INTRODUCTION

1. The British Solomon Islands Protectorate (BSIP) comprises a scattered archipelago extending about 850 nautical miles from north-west to south-east. The Protectorate is adjacent to Papua New Guinea in the west and to the Anglo-French Condominium of the New Hebrides in the south-east. Not all the Solomon Islands are in the Protectorate; the group's two most north-westerly islands - Bougainville and Buka - are part of Papua New Guinea. The British Gilbert and Ellice Islands Colony is to the north-east, New Caledonia lies to the south and Australia to the south-west. Honiara, the capital is about 750 nautical miles from Port Moresby, 1196 from Suva, 1544 from Sydney, 1836 from Auckland and 3088 from Honolulu.

2. Although small by world standards the territory, which has a land area of about 30 000 sq km, is the second largest of the South Pacific island states and territories after Papua New Guinea. With 180 000 inhabitants its population is exceeded only by that of Papua New Guinea and Fiji. Honiara, a town of 17 000 people, is the only large urban centre in the Protectorate.

3. The territory has indigenous people of both Melanesian and Polynesian stock. Melanesians, who make up the great majority of the population, appear to have come to the Solomon Islands by repeated migrations dating as far back as 8000 BC. This racial group probably originated in the Malayo-Asian area. The Polynesians of the Protectorate's outer islands came in relatively recent times, probably from Tonga and the Wallis group.

4. Recorded history begins in 1568 when de Mendana explored the group. Between 1643 and 1790 expeditions under Tasman, Carteret, de Bougainville, de Surville, Shortland and Ball rediscovered and named virtually all islands of the group. As the nineteenth century progressed visits by whalers and traders became frequent, and traffic in labourers - "blackbirding" - for plantations in Australia, Fiji and Western Samoa increased outside contact. Commercial companies established coconut plantations and the influence of the Christian churches became widespread.

5. Between 1893 and 1899 the British Government declared a protectorate over the various islands of the group, and in 1897 the first Commissioner established a residency at Tulagi. The Protectorate's present territorial extent was established by an agreement between the Germans and the British in 1900. From 1942 to 1946 the Solomons became a focal point of the Pacific War, when they were occupied by both Japanese and Allied forces.

6. Post-war recovery and development were slow and hampered by an anti-European nativistic movement called "Marching Rule", on Malaita. By 1952, however, local councils had been established in many districts and since 1967, when the first direct general election was held, the Protectorate has taken a series of constitutional steps towards self-government and ultimate independence. The present Constitution, which was inaugurated in August 1974, provides for the redesignation of the former legislative body (the Governing Council) as a Legislative Assembly, the election from among its members of a Chief Minister, the selection by the Chief Minister of an executive Council of Ministers and the redesignation of the British High Commissioner as Governor. Initially the Governor is to preside over the Council of Ministers but the intention is that this responsibility will in due course be assumed by the Chief Minister.

7. A small agricultural country in its early stage of development, the BSIP has little international economic significance. Its main commercial products (copra, timber and fish) account for a very small proportion of the world output of these products. Its export trade is insignificant, even to Japan which imports about 60 percent of the Protectorate's annual commodity exports. Known reserves of minerals are at present relatively small, but in time they may become a feature of the BSIP's export trade.

8. The Protectorate could assume some military significance as a staging post in the unlikely event of hostilities against Australia and New Zealand. Its location adjacent to Bougainville Strait, one of the sea lanes between eastern Australia and Japan, could also be significant. The Protectorate's infra-structure that could be readily applied to military purposes is limited mainly to its protected anchorages, some rudimentary port facilities at Honiara and Yandina, a medium passenger-jet airfield at Honiara and a small bulk fuel storage capacity.

PART II : GEOGRAPHY

CLIMATE

1. The Protectorate has a tropical monsoonal climate modified to some extent by the surrounding ocean. April to November is the season of the south-east trade winds and November to March is the monsoonal north-westerly season. The south-east trades are normally fairly steady and in some years extend into November. The north-westerlies are much more variable. There are occasional hurricanes during the north-westerly season.

Precipitation

2. Rainfall is generally high throughout the year, and may be as much as 8000 mm on exposed mountain slopes. Honiara has an annual rainfall of about 2290 mm. In most places the wettest months coincide with the north-westerly season.

Temperatures

3. On the whole temperatures rarely exceed 32°C or fall below 22°C. Mean temperatures almost everywhere for each month are about 27°C. There is only a slight seasonal fluctuation, and in coastal areas maximum and minimum temperatures are normally 1°C to 2°C lower during June to August than at other times of the year.

Humidity

4. Relative humidity remains high throughout the year, varying during the day between 60 and 80 percent, and at night between 80 and 90 percent.

Visibility

5. In general visibility in coastal regions is good and fog is rare. In inland areas early-morning mist or fog occurs more often but usually disperses within one to three hours after sunrise.

TERRAIN

6. Five of the major islands of the group - Choiseul, New Georgia, Santa Isabel, Guadalcanal and Malaita - form a double chain extending from Bougainville in Papua New Guinea, and converging at the sixth major island - San Cristobal about 450 n miles to the south-east. The six main islands which make up about three-quarters of the total land area of the Protectorate, vary between about 140 and 190 km in length and between about 30 and 50 km in width. The largest is Guadalcanal with an area of about 5400 square km. (Notes on the map and chart coverage of the territory are at Annex A.)

7. The main islands are mountainous and fairly rugged. Typically they have a spine from which the land drops steeply to sea level on one side and on the other falls more gradually through a series of foothills. Except for the coral atolls and raised coral reefs, the cores of most islands are of igneous and metamorphic rocks which are overlaid with marine sediments. In some cases the emergence of the islands from the sea has created level-topped terraces of coral reef rock. There are extensive coral reefs and lagoons around many of the islands. In parts the coast-lines of the larger islands are deeply indented, providing sheltered anchorages.

8. Because there is abundant rainfall and the rocks are non-porous the river systems are well developed. However, owing to the long narrow shape and ruggedness of the major islands, the rivers are generally only a few miles long and have steep courses for most of their length. Sudden heavy rainfall in the mountains leads to a rapid rise in the river level and to serious but temporary flooding on the coastal plains. Some rivers are tidal near the coast but only a few of the tidal reaches are navigable and then only by small launches. Most rivers have sand-bars at their mouths and many have alluvial deltas covered with mangrove swamp.

9. There has been notable volcanic activity in the BSIP and it has a history of earthquakes. A continuous watch on these activities is maintained by the Geological Survey Department in Honiara. It is understood that a sub-oceanic seismological survey on earthquakes is being under-taken.

Guadalcanal

10. Guadalcanal is the principal island in the Protectorate. The western third has a low general relief broken by outstanding peaks most of which are extinct volcanoes. The eastern two-thirds has a mountainous spine with ridges over 2000 m high (the highest peak is 2447 m). This mountainous system falls steeply to the south coast, but gradually to the north by way of foot-hills to the only extensive coastal plain in the Solomons.

Choiseul

11. The centre of Choiseul is formed by a broad level-topped ridge with few outstanding peaks. The highest of these is 1067 m. The north-eastern side is rugged and mountainous with the exception of a lower-lying area near the northern tip. The eastern end of the island is generally low-lying with hills of about 540 m high featuring the line of the ridge.

New Georgia

12. New Georgia consists of a number of volcanic cones rising from the sea, some of which have been linked. The highest peak is 1006 m, but Mongga Island to the north-west rises to 1768 m.

Santa Isabel

13. This island consists of a single chain of volcanic mountains which in most parts dip gently to a low-lying coastal strip. The long south-west and north-east coasts each possesses a discontinuous barrier reef. The highest elevation is 1219 m.

Malaita

14. Malaita is basically of volcanic formation with superficial deposits of coral limestone on the lowlands near the coast. Forested mountain ranges follow its main axis. The highest point is 1433 m.

San Cristobal

15. The bulk of the island of San Cristobal (Makira) is composed of ancient volcanic rocks which form a series of mountain ranges running parallel to the main axis of the island. The highest point is 1250 m. The southern coast rises precipitously from the sea in black cliffs. The northern coast for most of its length is backed by a strip of level land of varying width overlaid in part with coral limestone.

The Outlying Atolls

16. Ontong Java atoll to the north of the main island chain and Sikaiana atoll (Stewart Islands) to the north-east are typical atolls, while Rennell and Bellona are raised atolls.

VEGETATION

17. About 90 percent of the land is forested, with the mountainous islands for the most part covered in dense rain forest and rank undergrowth. The forest up to about 300 m above sea level is tall and close standing; the average height of the highest ceiling being about 45 m.

18. The vegetation on the flat narrow coastal belts comprises coconut palms, secondary growth, and, on the larger islands, scattered stands of primary forest. In addition to the man-made clearings there are scattered areas of scrub, long grass and fern. Some parts of the coast are lined with coconut palms while in other coastal areas casuarinas and sometimes beech forest predominate. Where the coast is low-lying and the sub-stratum is mud or coral, the outer vegetation on the

seaward side is usually mangrove forest. In many places, especially near the mouths of the larger rivers, the mangrove spreads out into a wide belt and many of the smaller islands are completely encircled by it.

19. The dry coastal plains and rolling foothills are covered with kunai grass, scrub, fern and scattered forest clumps as found in the northern areas of Guadalcanal, the Florida Group, Vanikoro Island and San Jorge Island. Foothills and mountain ranges below about 1000 metres are covered with dense primary rain forest, with scattered areas of secondary growth in the less steep hillsides, in the narrow valley floors and on the few small plateaux. Precipitous mountains and ranges above about 1000 m are covered with forest. In the case of the higher mountains of Guadalcanal, this is not as dense as that found in New Guinea.

MILITARY CONSIDERATIONS

Ground Operations

20. In the major islands the steep forested country and heavy rainfall generally preclude wheeled movement off the few roads. The northern coastal plains in the Honiara area of Guadalcanal are the largest area in the Protectorate where this is practicable. Wheeled vehicle movement through some coconut plantations is also feasible. Movement on foot across country in the enervating climate is generally slow even where there are trails.

21. Relatively shallow fast-flowing rivers that are usually negotiable on foot can become too deep to ford following sudden downpours. Sandbars at the mouths of some of the rivers afford possible crossing places. Emergency road construction methods have included the use of corduroy segments formed from felled trees. Coral rubble has been used to maintain logging tracks although excavation in coral limestone areas is difficult. Periods of heavy and persistent rain render natural surface roads easily damageable.

22. Concealment from ground and air observation is generally good. Fields of view are short in the forested areas. Snakes are relatively rare and few species are poisonous. Mammals are restricted to bats, opossums and the occasional wild pig.

Air Operations

23. The best period for air operations is April to November, the season of the south-east trade winds, when the incidence of cloud and rain tends to be lower than at other times. Flying conditions during the day are likely to be the most favourable between 0900 and 1000 hours. Rain, fog and haze contribute to poor visibility. During periods of heavy rain visibility is greatly reduced, at times to less than one km. Honiara is in the rain-shadow cast by the high mountains to the south, and most of its

annual precipitation falls during the first three months of the year. Fog in the valleys could hamper air operations in the early morning. Windward slopes and higher peaks are likely to be cloud-covered for much of the day. Haze and smoke from fires may also reduce air-to-ground or air-to-air visibility. Air turbulence may be considerable, particularly near the mountains.

24. The rugged, mountainous and forest covered nature of most of the territory severely limits the areas suitable for airfields and landing grounds. There is one airfield, Honiara/Henderson and 18 landing grounds which are operated by the government or local councils. In addition there are two private landing grounds including one owned by Levers' Pacific Plantations at Yandina. Honiara has the only bitumen sealed runway (length 1920 m, Load Classification No. (LCN) 35), and the only runway lighting. Most of the strips have a coral surface with a length of less than 1000 m, and an LCN of 15-21. Munda and Yandina have the only runways exceeding 1400 m. (See Part VI.)

Amphibious Operations

25. With the exception of Choiseul, the northern coast of San Cristobal, Guadalcanal and many small islands, the territory has many inlets which are suitable as harbours and anchorages. Nevertheless physical conditions generally are difficult for the operation of deep-draught vessels in the coastal waters.

26. The relatively featureless coast of northern Guadalcanal was the scene of the most significant of the numerous amphibious operations conducted in the Solomons in World War II. The likelihood of amphibious operations recurring is highly remote but, in the event of a natural disaster, landing craft could bring relief to striken areas including those where access by deep draught vessels, to a port might not be possible because of tectonic movement and damage to installations.

27. The south-east wind from April to November is steady some distance off-shore, but it is influenced by land masses near the coast. It is stronger in the afternoon, and at night or early morning either abates or gives way to wind from the land. Conditions for beach landings would therefore be most suitable in the early morning when swell has died down. At times, however, especially in July and August, the south-east wind can blow continuously for several days and nights.

28. The north-west season from December to March consists of alternating periods of light, changeable winds and strong blows. These storms may last anything from a few hours to several days and

often come from the west or south-west rather than the north-west. During these stormy periods fairly big seas can be encountered. Between the seasons calm and changeable winds are frequent.

HEALTH CONDITIONS

29. Health conditions for Europeans are reasonably good by tropical standards, provided that basic health precautions are taken. The main endemic disease is malaria and, to a lesser extent, tuberculosis. Respiratory and skin diseases and intestinal complaints are also prevalent. Yaws and leprosy are no longer significant health problems.

30. There is a risk of the transmission of malaria at all times of the year at altitudes below 400 m in both urban and rural areas. The worst affected areas are the low-lying coastal belts and bush areas close to rivers. Some small islands are also highly malarious. Malaria is not generally prevalent in high bush areas, and some are completely free of the disease. The Nggela (Florida) group of islands has been one of the most affected, but this is now being checked by DDT spraying. Visitors to the Solomons and local Europeans are still recommended to take anti-malaria tablets. By 1973 spraying operations under a malaria eradication programme offered protection from malaria to about 168 000 people in Central, Western, Malaita and Eastern Districts.

31. There has been a decrease in notification of new cases of tuberculosis. Efforts to combat the disease are based on mass BCG vaccinations, particularly of the younger age groups and contacts of known cases.

32. Considerable progress has been made in environmental sanitation. In urban areas routine sanitary inspections are carried out together with rodent and vector control measures. Houses in Honiara and the other main urban centres have water-borne sanitation; sewage disposal is by means of individual septic tanks, but construction of a mains sewerage system was begun in 1969. Village sanitation is still primitive, but there is a high standard of village hygiene. Only Honiara has a refuse collection service.

33. There is no real shortage of fresh water but it is not infrequently contaminated during transit; efforts are therefore being made to provide more village wells and boreholes. In Honiara the mains water supply is regularly tested by the Medical Department and is potable without the need for boiling.

34. Hospital facilities in Honiara are generally inadequate in relation to the pressures on them. In 1971 the BSIP as a whole had a ratio of one hospital bed to approximately every 140 persons, and there were 38 doctors, including 33 in Government services, giving a ratio of one doctor to every 4400 persons in the territory.

PART III : POPULATION AND SOCIETY

GENERAL

1. The Protectorate's population of around 180 000 is the third largest in the South Pacific Islands area after Papua New Guinea and Fiji. The great majority of the people are indigenous Solomon Islanders, most of them living in villages and retaining much of their traditional way of life. Society in the Protectorate is far from united and a sense of national consciousness is not well developed. There are sharp regional differences and wide social and economic gaps exist between the Solomon Islanders and the small but influential European and Chinese communities. Generally speaking only a few Islanders are well enough educated or otherwise qualified to take over key positions as the territory moves towards independence.

POPULATION

2. Little historical demographic information is available and only the broad picture of population trends is discernible. There is no reliable estimate of the number of people that lived in the Solomon Islands in pre-European times but the primitive technology then available to the people and the prevalence of malaria suggest that the islands could not have supported a large population. As the nineteenth century progressed, closer contact with Europeans brought a succession of epidemics amongst the Solomon Islanders and this, coupled with the "blackbirding" of Islanders to work in Australia, Fiji and Western Samoa, led to a decline in their numbers. The trend was reversed earlier in this century probably as a result of generally improved health conditions, a continuing high birth rate and the termination of "blackbirding". Few Islanders have left the territory since.

3. The population has approximately doubled in size since the first Census in 1931, but the highest rates of increase have probably been in more recent years. Population growth in the early 1970s for example appears to have been at the rate of about 2.5 percent a year. If sustained this would lead to a further doubling of population in 28 years. Family planning does not yet seem to have aroused much interest and it is unlikely therefore that the population growth rate will decline substantially in the near future. As a consequence of the high birth rate the Protectorate has a youthful population; about 45 percent of the people are under 15 years of age.

Since its discovery by Europeans there has been ittle immigration to the territory. A massive influx of apanese and Allied troops during the Second World War had far reaching impact on Islanders' attitudes, but the only ctual immigrants to arrive in substantial numbers have been he 2000 or so Micronesians from the Gilbert and Ellice Islands. here has been a much smaller inflow of Polynesians from various ources.

The BSIP, taken as a whole, is not closely settled nd accordingly does not have the same population pressures hat are found elsewhere in the Pacific. Its dominant ccupation - agriculture - could support many more people. he overall population density is approximately 6.2 persons per quare kilometre, which is close to that of Papua New Guinea, he New Hebrides and New Caledonia but stands in strong contrast o overcrowded South Pacific territories such as the Gilbert and llice Islands Colony (65 per square kilometre) and Tonga (126 er square kilometre).

The geographical distribution of the population is, owever, uneven, and little related to the economic potential f the various parts of the Protectorate. Most of the lanesians, who make up 93 percent of the total population, ive in rural areas near the coasts where they carry out their raditional tasks of food cultivation, fishing and home onstruction as well as commercial coconut harvesting and rying.

As the following table shows, more than half the opulation lives on two islands - Malaita and Guadalcanal. Malaita is significantly more densely populated than the rotectorate as a whole, but some of the smallest islands have he highest densities. In some, such as Tikopia and the Reef slands, high population density has led to the need for esettlement schemes.

Population and Population Density of Major Islands (1970)

Island	Population	Share of Total Population (%)	Density (per sq km)
Malaita	50 659	31.5	11.2
Guadalcanal	35 187	21.9	6.2
San Cristobal	10 921	6.8	3.1
Vella Lavella	9 227	5.7	10.0
Santa Isabel	8 653	5.4	2.3
Roviana	8 499	5.3	3.5
Choiseul	8 817	5.8	2.7

8. After Papua New Guinea, the Protectorate has the second lowest level of urban development in the South Pacific. The Protectorate's largest urban centre is Honiara, the capital, which in 1973 had 17,000 inhabitants, or 9 percent of the total population. A few thousand more live in the district centres of Auki (Malaita), Gizo (Western District) and Kirakira (Eastern District). The majority of the Protectorate's Europeans and Chinese live in Honiara, but even there they are heavily outnumbered by Melanesians.

9. Honiara was founded only after World War II and is still a township. But like the lesser centres it is growing rapidly with annual growth rates in excess of 15 percent in recent years. Honiara is nevertheless very much a frontier-type town and there seems to have been little strict regulation of its growth and development. There is a shortage of good-quality low-cost housing, and overcrowded squatter settlements are appearing on the outskirts. These are not discouraged by the authorities and have indeed become an important source of vegetables and fish for the Honiara market.

THE ETHNIC GROUPS

10. The ethnic composition of the population was estimated in 1972 as follows:

Ethnic Group	Population	Share of total (percent)
Melanesian	161 510	93.0
Polynesian	6 900	4.0
Micronesian	2 530	1.5
European	1 280	0.7
Chinese	580	0.3
Others	710	0.4
Total Population	173 510	100.0

11. The indigenous Melanesians, by far the largest ethnic group, are akin to the indigenous inhabitants of Fiji, New Caledonia, the New Hebrides and much of the island of New Guinea. There are close cultural and in many cases family connections between the BSIP and Papua New Guinea. The inhabitants of the Shortland Islands and parts of Choiseul, for example, have more in common with the people of Bougainville, which is part of Papua New Guinea, than they have with Melanesians living elsewhere in the BSIP.

12. The Protectorate's other races together account for only about seven percent of its population. Polynesians have lived in some of the outer islands since pre-European times. A few, however, have come to the territory in more recent years, as have the Micronesian Gilbertese. The Europeans and Chinese together make up only about one percent of the total population.

THE SOLOMON ISLANDERS

13. The Solomon Islanders are amongst the least advanced peoples of the South Pacific. Amongst the Melanesians in the BSIP there are marked physical and cultural variations and the Polynesians as a group are even more distinct.

Physical Characteristics

14. The Melanesians are characterised by medium height and dark fuzzy hair. They generally have broad noses and thick lips. Regional differences are at their most marked in skin colour, which varies from extremely black, as in the north-western islands of the Shortland group, to brown as in Malaita. The Polynesians are generally much lighter coloured than the Melanesians, although many have some Melanesian blood.

Language

15. As in the other Melanesian territories there is no indigenous language common to the whole of the BSIP. Rather there is a wide diversity of mutually unintelligible indigenous languages and this has fostered the development of a sense of group affinity among people speaking the same indigenous language.

16. Since contact began with Europeans a lingua franca has developed in the form of Pidgin English and this is now widely used in the territory. Much of the Pidgin vocabulary derives from English but the syntax is typically Melanesian. There are only slight differences between the Pidgin spoken in the BSIP and the forms used in Papua New Guinea and the New Hebrides. English, the official language, is taught in the schools and is widely spoken.

Social Organization

17. Traditional society in the Solomon Islands is characterised by its diversity and in most areas by the absence of large, rigidly structured social groups. The major exceptions are in south-eastern Malaita and the Polynesian outer islands.

18. The only social unit common to the whole of the Protectorate is the "nuclear" family of parents and their children. The typical family is one that lives in a village of fewer than one hundred persons, but it is often organized into a larger kinship group or "clan" of several hundred persons scattered through a number of villages. The extent and nature of clan allegiances vary widely between areas but generally appear to be very loose in matters other than marriage and religion. It is in the latter area that the influence of the Church (particularly Roman Catholic, Anglican and Seventh Day Adventist) has had a profound effect on the life styles and attitudes of many villagers.

19. Some ninety percent of the land is still held under customary communal tenure and legal restrictions prevent its transfer to outside interests. Ties to the land are however few and impermanent. Generally land is held on a family or village basis and may be handed down from mother or father according to local usage. The Islanders are still reluctant to provide customary land for non-traditional economic undertakings, and this has given rise to periodic disputes over land ownership.

20. Generally, traditional leadership was by custom, as interpreted jointly by village elders. In some small areas, particularly on the Polynesian outer islands and in parts of Malaita, elements of chiefly structure prevailed, and it appears that many of these are still important. But elsewhere there was a looser leadership system of "big men" who achieved and maintained their positions by their strength of personality, their support for group interests, their industry and their control of the group's wealth. However, European contact, both of the missionary and colonial kind, had a major impact in undermining the power and status of the traditional "big men", with a resultant loosening of clan ties.

21. The indigenes' understanding of, and adaptation to, Western customs has not occurred without friction. It could be that the widespread "nativistic" movements in various parts of Melanesia (prominent in the BSIP in Malaita and Guadalcanal), were an attempt to restore some validity to indigenous ideas regarding the nature of status and power in a new society where the Melanesians had neither power nor status. One such movement on Malaita, called the "Marching Rule", attained some degree of organization in 1946. In essence it arose out of the Islanders' reaction to the discipline of the British administrators and Australian plantation managers, which contrasted with the "generosity" of the American forces during World War II. The movement was characterized by non-cooperation with the administration and the churches, the regimentation of its adherents into large, strictly ruled villages, communal economic activity, and cargo-cult expectations that the material wealth of the white man

would soon reach the Islanders by the intervention of some supernatural agency. While the movement has survived, its leaders have come to cooperate with the Administration.

22. In 1957 a somewhat similar cargo-cult movement emerged in Guadalcanal. By 1964 it was estimated that the "Moro" movement, as it was called, exerted a strong influence over at least half of Guadalcanal. Since them it has continued to attract some adherents.

23. In their original form the cargo-cult aspects of the "nativistic" movements were transient, withering as a result of disappointment that expectations were not realized. The cargo mentality remains widespread, but is increasingly secular and often barely distinguishable from more modern types of political and economic movements.

Social Values and Attitudes

24. Solomon Island society is still fragmented and there is no national consciousness except perhaps amongst the educated elite in Honiara. Nevertheless, an awareness of shared characteristics and interests with people on their home island or island group does exist, even if this has led to a somewhat "insular" outlook even among the politicians themselves. The inhabitants of the western islands have come closest to adapting to the European way of life. These people are distinctive in being darker, taller and slimmer, than other Solomon Islanders. The Santa Isabel people take great pride in their island and are the most unified of all the island people. On the other hand, by comparison with most other Solomon Islanders, a high proportion of the inhabitants of Malaita live in relatively remote and primitive villages as do the inhabitants of Guadalcanal. The Malaitans are more insular and withdrawn than the people of the western islands and cling more tenaciously to their customs and traditions. They have a reputation for being aggressive and quick to anger, and their pride frequently prevents them from coming to terms with expatriate influence. There is less good land on Malaita than in most parts of the Protectorate, and this has resulted in many of the younger men leaving to seek work on plantations in other islands or in Honiara, but on the whole they are disliked by other Solomon Islanders who regard them as being a disruptive influence.

25. Except in the vicinity of Honiara and Tulagi, the old administrative capital, the people of the islands in the central and eastern districts have had less contact with Europeans than the people of the western islands. Large parts of their islands are underdeveloped. Guadalcanal, like Malaita, has a high proportion of its population living in remote areas. Their inhabitants appear generally unconcerned with what goes on in the rest of the Protectorate.

26. The Polynesian inhabitants of some of the outlying islands have a culture which is more like that of Polynesian countries such as Tonga than the rest of the BSIP. Tikopia and Anuta have retained their chiefly system of local rule in contrast with the local government network that covers the

rest of the Protectorate. Some of the Polynesian islands of the BSIP are overcrowded, and like the Malaitans many Polynesians have left their home islands to work in other parts of the territory. This has brought Polynesians and Malaitans into competition and relations between them are not always good.

27. As well as the differences discussed above, the population is further polarized at more localized levels. Major differences exist, in many cases, between coastal and interior groups and between urban and rural dwellers. The split between urban and rural areas is dramatic. Those well educated, generally urbanized indigenes tend to be more or less confident of their ability to thrive in and direct their country, but this is not true for most of the less educated and poorer rural people, many of whom have reacted atavistically and negatively. While the greater exposure of the indigenes in Honiara to the pressures of modernization and the market economy have contributed to a loosening of their traditional social controls and customs, living in Honiara has helped bring home the differences between their living standards and those of the Europeans and Chinese.

THE EXPATRIATES

The Europeans

28. Most Europeans in the BSIP were born outside the Protectorate. They are mainly expatriate civil servants and Australian and New Zealand planters or businessmen. Only a few Europeans (mainly missionaries and planters) live away from the capital and district centres. The majority work for the Administration in Honiara and rarely leave the capital.

The Gilbertese

29. Gilbertese were settled in the BSIP from overcrowded islands in the Gilbert and Ellice Islands Colony between the mid-1950s and mid-1960s. They now occupy several areas in the western district (notably Gizo and Wagina) and a section of Honiara. They maintain many of their traditions and mingle little with the other ethnic groups. The Melanesians tend to resent this, as they do the Gilbertese demand for education for their children. There has been only limited inter-marriage and many Gilbertese fear deportation after independence.

The Chinese

30. As in other Pacific islands, the Chinese in the BSIP play an important part in the Protectorate's commerce.

Most of them live in Honiara but there are a few in the district centres. They are generally unpopular with the Melanesians who believe that Chinese businessmen are exploiting them. As a result, some, uncertain about their prospects in an independent Solomon Islands, are selling up and leaving.

RACE RELATIONS

31. Although the BSIP is not troubled by serious communal strife, there is an undercurrent of racial tension in Honiara. Conflicting social attitudes, economic inequalities and disparate employment opportunities are among the most important tension-creating factors. These occasionally give rise to minor incidents.

RELIGION

32. Christian missions of various denominations have been active in the BSIP for a hundred years. Most of the Islanders are professed Christians and the church plays a big role in their lives. However, there are still pagan areas, especially on Malaita, and many of the Islanders have not totally discarded their native beliefs. Originally the missions had separate spheres of influence and the strong rivalry between the various denominations limited the contribution that a common faith could have made to cultural and social integration. Now the different denominations, in addition to their spiritual work, cooperate in providing education and medical and social welfare facilities. The principal denominations, in order of the numerical importance of their followers, are Anglican, Roman Catholic, South Seas Evangelical, United Church and Seventh Day Adventist.

EDUCATION

33. The Protectorate's political, social and economic development depends heavily on education, but this is not compulsory and less than 60 percent of BSIP children receive any schooling (mainly undertaken by mission schools) and less than 5 percent receive secondary education. It is estimated that only about 10 percent of the Melanesians and 8 percent of the Polynesians are literate. The people of Malaita and Guadalcanal are relatively more backward than those in some other parts of the country.

34. There are few indigenous graduates, but the need to increase the number to ensure that there are enough leaders in the future is recognised. Most Solomon Island undergraduates are at universities in Fiji and Papua New Guinea. Efforts are also being made to encourage other forms of higher education by way of technical and vocational training courses, and overseas scholarships are being provided to this end.

PART IV : GOVERNMENT AND POLITICS

GENERAL

1. In terms of population the British Solomon Islands Protectorate is the second largest remaining British dependency after Hong Kong. The Protectorate's relatively slow rate of constitutional progress, compared with that of other former British dependencies, has reflected its generally low level of development, the lack of a sense of national identity, and the absence of a strong demand for political change. Except for the emerging elite in Honiara, most Solomon Islanders have been politically inert and largely unaware of the role and operations of central government.

CONSTITUTIONAL DEVELOPMENTS

2. Although the territory is officially called a protectorate, to all intents and purposes it has been administered as a colony. The principle of indirect rule through indigenous rulers that was applied in some other British dependencies had no place in the BSIP because there were no indigenous leaders holding sway over large enough areas to make such a system operable.

3. Under a Constitution introduced in 1970 an attempt was made to blend customary Melanesian practice, which gave scope for individual initiative within a consensus framework, with Western forms of government. A Governing Council was set up and under it a system of committees with responsibility for the work of government departments. However, although this represented an important stage in the Protectorate's constitutional advance, the committee system proved cumbersome, with decision-making being excessively inflexible and slow.

4. Accordingly, in November 1971 a Select Committee, consisting of members of the Governing Council, was set up to examine ways of improving the situation. In the light of the Governing Council's subsequent recommendations a new Constitution was drawn up to introduce the Ministerial system. It was promulgated by Order in Council in July 1974.

5. The new Constitution provides for a Legislative Assembly to replace the Governing Council, the election of a Chief Minister from among, and by, the 24 elected members of the Legislative Assembly, and the establishment of a Council of Ministers consisting of the Chief Minister, between four and six Ministers appointed on his advice from among the elected members of the Legislative Assembly, and three ex-officio members - the Deputy Governor, the Attorney General and the Financial Secretary.

6. These constitutional arrangements fall short of self-government in several important aspects. The Governor, who is appointed by the Queen on the advice of the British Government, with the three ex-officio members of the Legislative Assembly retains considerable power. The Constitution lays down that he shall consult the Council of Ministers in the exercise of his powers but specifically excludes the subjects of defence, external affairs, internal security, the police and public appointments. The powers of the Legislative Assembly also are limited. The Governor's assent to the Assembly's bills is required and may be withheld, and indeed laws to which his assent has been given may still be disallowed in Whitehall. Furthermore, power has been vested in the Governor to implement laws which the Assembly fails to pass. Specifically the power has been withheld from the Assembly (except on the recommendation of the Governor) to pass legislation providing for the imposition or increasing of taxes and other fiscal measures or for alterations in salary or pension levels.

7. The inauguration of the new Constitution took place in Honiara in August 1974 with the election of the Chief Minister (Mr Solomon Mamaloni) and the appointment of a Council of Ministers. After a reshuffle late in 1974 in which Mamaloni reorganized his Council of Ministers to bring in members of the Opposition, the Council membership in April 1975 stands as follows:

Chief Minister	S.S. Mamaloni
Minister of Home Affairs	Dr G. Zoleveke
Minister of Education and Cultural Affairs	S. Cheka
Minister of Agriculture and Rural Economy	D. Kausimae
Minister of Works and Public Utilities	P.S. Funifaka (Leader of Opposition)
Minister of Trade, Industry and Labour	W. Betu
Minister of Health and Welfare	Rev. P. Thompson

8. The ministerial system established under the present constitution provides the basis for further substantial constitutional development. It appears that the next step could be the replacement of the Financial Secretary by an elected Minister of Finance, followed by full internal self-government. In accordance with usual British policy this would be followed within a short period by independence.

GOVERNMENT

Administration

9. Each government department is headed by a Permanent Secretary reporting to his respective Minister who in turn presents policy proposals to the Legislative Assembly. At present the secretaryships are held by a mix of Melanesian and expatriate officers. Responsibility for the civil service as a whole is vested in the Deputy Governor.

10. The civil service departments are staffed by about 2300 public servants. In 1973 about 82 percent of these posts were held by Solomon Islanders, and since then an attempt has been made to increase the extent of localization; but, because of the generally low levels of education and experience, fewer than one in ten senior professional and administrative posts are held by islanders. Unless standards are to fall substantially there will be a need for expatriates to serve in the administration for many years.

The Police

11. As there are no military forces in the BSIP the Police Force is the only organization responsible for the maintenance of internal security. The strength of the Police in 1972 was as follows:

Commissioner	1
Gazetted Officers	11
Inspectors	15
Non-commissioned Officers	319
Civilian Clerks	16
	362

12. The Police Districts coincide with the four administrative divisions. Police Headquarters, the Training School and the Mobile Unit are all situated at Honiara. There are ten other stations and posts, six of which are linked with Honiara on the Police radio network.

13. The Protectorate has a high police/population ratio (1:480) but its physical and demographic fragmentation and rudimentary communications make it difficult to police and call for a high ratio. The Police Force has shown itself adaptable to the difficult conditions, and current detection rates of around 60 percent are satisfactory. Standards of loyalty, organization, training and equipment are good and have improved substantially in recent years.

Local Government

14. For administrative purposes the Protectorate has been divided into four Districts - Central, Western, Eastern and Malaita. Each of these has had at its head a District Commissioner assisted by District Officers. Local government is at present undertaken by nine Local Councils. These are elected by adult suffrage and cover all the Protectorate except the Polynesian islands of Tikopia and Anuta. On these islands the Chiefs have rejected Local Council authority.

15. Served by their own staff and others seconded from the public service, the Councils administer a wide range of local economic and social services and projects. The majority of Councils derive revenue from rates, fees and loans, but local development projects have been subsidized by anything up to 100 percent. Training programmes for Local Council staff have been implemented but, despite recent progress, most local councils are relatively ineffective because of shortages of administrative skills.

16. Honiara, the only significant urban area, has the Protectorate's only Town Council. Consisting of 12 elected members and three nominated members having no voting rights, the Council functions similarly to the nine Local Councils.

17. The decentralization of government has become probably the Protectorate's most important internal political issue. In a country where there are wide regional disparities and where there is still little sense of national identity, the extent to which power is devolved from the central to local authorities is highly relevant to the stability and integrity of the state. As Chairman of the Local Government Committee of the former Governing Council, Mamaloni worked vigorously for the decentralization of power to the Local Councils and he can be expected to pursue this objective even more forcefully in his present position. He is conscious that the viability of the new Legislative Assembly will be influenced by the success or failure of what he sees as the BSIP's essential need for decentralized administration.

POLITICS

18. Political parties have been slow to develop and it is still not clear what political alignments will eventually evolve, or even whether the system of party politics will become firmly established. Parochial interests still play a large role in politics and this militates against the development of broadly based national parties. In addition

the divisiveness implicit in party politics runs counter to the Solomon Islanders' traditional concept of leadership which is normally by consensus. The structure of the former Governing Council, within which Solomon Islanders have been participating in the modern political process, was drawn up to take account of these attitudes, and was itself not condusive to the formation of parties. A further, and more immediate, factor has been the shortage of effective leaders. A Council of Ministers following party lines would inevitably preclude two or three of the Protectorate's most able and experienced politicians. The outstanding example of this was the election of Mamaloni as Chief Minister where party lines as such were secondary to personal considerations.

19. Between the last elections, which were held in April/June 1973, and the inauguration of the new Constitution in August 1974, moves were made to form and/or reform two political parties. But neither of these - the governing People's Progressive Party (PPP) and the United Solomon Islands Party (USIP) - established a very clear manifesto prior to the formation of the Council of Ministers, and allegiance to both remains weak and flexible.

20. It is possible that, after a space of a few years and/or on the assumption of independence, political activity along strictly party lines will emerge and become a fact of life in the Protectorate. Certainly the structure of the new legislature should assist such a trend. Meanwhile Mamaloni has demonstrated the fluidity of party allegiance by bringing Funifaka, the USIP opposition leader, into his Council of Ministers. Funifaka's elevation to ministerial rank could be ascribed not only to his recognized ability and experience but also to Mamaloni's desire to take the edge off Opposition criticism and thus ensure a smoother passage for his Government in the Legislative Assembly.

21. A line-up of political personalities according to nominal party allegiance is as follows:

People's Progressive Party (PPP)	- Mamaloni, Kausimae, Cheka, Thompson, Gauwane, Bonunga, Thuguvoda
United Solomon Islands Party (USIP)	- Funifaka, Kinika, Wickham, Fugui, Li'ouou, Kikolo, Kukuti, Ben, Ngumi, Zoloveke
Independent Group	- Betu, Fifi'i, Razak, Ausuta, Page, Belamatanga, Ghemu.

TRADE UNIONS

22. Probably due to lack of sophistication and organizing talent, trade unionism has never been an important factor in the Solomons. So far there have been only two registered unions: the former "British Solomon Islands General Workers' Union", which was registered in 1971, and the Civil Servants Association (now renamed the Solomon Islands Public Servants' Association) which has been active for some years but was only registered as a union in 1973.

23. As a union the British Solomon Islands General Workers' Union, which claimed a membership of 750, was inefficiently organized and was accordingly not an effective instrument in advancing its members' interests.

24. The Public Servants Association (SIPSA), which has about 500 members, virtually all in Honiara, seems to be a better organized body and its efforts to increase its members' pay rates are closely observed by other workers. Its main aims appear to be faster "localization", and improved salaries and conditions of service.

25. Periodic attempts to organize other unions have failed in recent years, but it could be only a matter of time before this situation changes and those Solomon Island trade unions that are formed acquire political affiliations. Meanwhile, although unrest in the labour force has been regarded as a potential threat to internal security, especially in Honiara, this has not yet assumed significant proportions nor taken on a political flavour.

FOREIGN RELATIONS

26. As a British dependency the Protectorate has no formal diplomatic relations of its own. But it does participate as an observer in the work of the South Pacific Conference and is an associate member of the Asian Development Bank. At the 1975 South Pacific Forum the Solomon Islands will be present as an observer for the first time.

27. Very few indigenous Solomon Islanders appear to have focussed on issues that go beyond the bounds of the Protectorate, and there is certainly no consensus of attitude to foreign relations. However, it is possible to discern a trend of thinking from comments made by some of the more prominent politicians.

28. The Melanesian identity seems to be a fairly strong element in their thinking and some politicians in Honiara talk about an eventual federation of Melanesian states, but at this stage this can only be described as somewhat over ambitious. Many do see Papua New Guinea as a natural partner (big brother) in foreign relations, and in the move towards self-government the Honiara Government may well seek closer links with Port Moresby. The relationship with this

western neighbour also has its difficult side. Probably because of Bougainville's wealth and the close affinities of Bougainvilleans with the indigenous population of the Western District of the BSIP, some politicians have from time to time indicated (with what degree of credibility is unclear) that they would like to see Bougainville break away from Papua New Guinea and join the Protectorate. On the other hand, some Bougainvilleans as well as some Shortland Islanders have expressed an interest in the Shortlands leaving the BSIP and linking up with Bougainville. The likelihood of either development taking place is, however, remote.

29. As to relations with its other South Pacific neighbours there appears to be some concern that the Solomon Islanders might be regarded as "inferior newcomers". Despite this some BSIP politicians seem to be in a receptive mood for consolidating and developing relationships with the South Pacific community.

30. Most Solomon Islanders see their ties (particularly their economic ones) with Australia as of vital importance although there is a residue of ill-feeling in the BSIP that appears to stem from the earlier "black-birding" experience. There is no clear attitude towards New Zealand, with whom contact has been very limited, although there are many New Zealanders, as there are Australians, among the "expatriate" civil servants. A basis for a closer relationship with New Zealand lies in the facts that Mamaloni attended school in New Zealand and that one of his principal Ministerial colleagues (Rev. Thompson) is a New Zealander.

31. Although links with Asian countries (principally Japan, Taiwan and Malaysia) are growing, most indigenous political figures in the BSIP regard Asian countries with some caution. They are however aware of the economic benefits (especially from Japanese tourism). In general it would appear that attitudes to foreign affairs and to the BSIP's place in the region will not become clear for some years yet.

PART V : ECONOMY

Australian currency is the legal tender of the BSIP.
Exchange rates (February 1975) A$1.00 = NZ$1.01
= £0.56.
Fiscal year 1 January to 31 December.

GENERAL

1. The BSIP economy, which is rudimentary and underdeveloped even by South Pacific Island standards, is based on the primary industries of agriculture, forestry and fishing. The agricultural sector alone accounts for about 60 percent of estimated Gross Domestic Product. It is based both on subsistace production, which provides a means of living and a cultural background for more than 75 percent of the population, and on commercial agriculture by which a narrow range of commodities is produced, mostly for the export market.

2. . The approximate Gross Domestic Product of the Protectorate (and, for comparison, Fiji and Papua New Guinea) was in 1971:

GROSS DOMESTIC PRODUCT (1971)

Country	GDP ($ million)	GDP per capita ($)
BSIP	29	171
Fiji	188	354
Papua New Guinea	600	250

3. Subsistence output, which accounts for about half of the Protectorate's GDP, has been increasing at an average rate of five percent annually. Monetary sector output on the other hand has been increasing by about nine percent a year. Nevertheless, per capita money income is still very low,at $66,and this is an average of two disparate income groups, the indigenes and the expatriates. The latter, who comprise less than seven percent of the income earning workforce, earned almost 40 percent of cash incomes in 1971.

4. The Protectorate's natural resource endowment (forests, agricultural land, minerals, water supplies, and fish) is good by comparison with most other South Pacific island countries, but the low level of human resource development, the country's geographical fragmentation, the vagaries of copra and timber prices, and the persistence of tradition are significant impediments to general economic progress.

5. Despite these, and various other difficulties associated with developing countries generally, the long-term prospects for the BSIP economy seem good compared with those of some other South Pacific island countries.

ECONOMIC SECTORS

Agriculture

6. Subsistence agriculture, both sedentary and shifting, is the most extensive economic activity in the Protectorate. Customary land tenure accounts for almost 91 percent of the total land area. On such land the traditional agricultural activity is the production of staple root crops (taro, yams, sweet potatoes), other vegetables, coconut and fruit for direct consumption or for barter at local village markets. Subsistence and cash cropping are closely interconnected and most farming units are engaged in both to varying degrees.

7. Coconuts are the Protectorate's most valuable agricultural produce and in most years have provided its major export item, copra. The rehabilitation and replanting of coconut smallholdings, which produce 60 percent of total output, were major goals of the previous Development Plan. The remaining 40 percent of the Protectorate's copra is produced on several large plantations owned either by local expatriates or foreign companies. Good prices brought record export earnings from copra of about $10 million in 1974. This in turn stimulated output, but previously estimated long-term targets, which imply an increase of output by at least 50 percent by 1980, now appear unrealistically high.

8. An oil palm venture, partly Government owned, was begun on Guadalcanal in 1971 and has made good progress despite delays resulting from cyclone damage and shortages of seeds imported from Malaysia. The scheme is being financed largely by the Commonwealth Development Corporation, and indigenous smallholdings peripheral to the main estate are to be established. Trials have demonstrated a particularly high yield potential, and palm oil exports earning over $3 million annually are likely from 1976.

9. Cocoa production, of which about 60 percent originates on smallholdings, is relatively small-scale and no major developments are imminent. Commercial rice growing, after many setbacks, is now well established. Local rice is gaining consumer acceptance; the local demand should soon be satisfied and trial exports to neighbouring countries have been undertaken. Attempts to diversify exports and provide a greater variety and supply of domestically produced foodstuffs have resulted in the establishment of a number of other commercial crops, but these are as yet at an early stage of development. They include chillis, tobacco, peanuts, green vegetables, ginger and peppers.

Livestock

10. The response of the agricultural sector to the Government's livestock development programmes has been good, and increased financial provisions are likely to accelerate progress towards the long-term target of livestock produce exports.

11. The target is to achieve 75 percent self-sufficiency in the production of meat and meat products by 1980 when an estimated 250 tons of fresh meat will be required annually. Some 19 000 head of beef cattle had been established in commercial herds by the end of 1974, about three quarters of them being run on coconut plantations as a subsidiary income source to copra.

12. The pig population is over 20 000 but many of these are raised under rudimentary village husbandry. Simple pig rearing units and breeding stock are being introduced. Small goat herds and flocks of geese have also been established.

Forestry

13. The Protectorate's commercially exploitable timber reserves, which consist almost entirely of utility quality hardwoods, were estimated in 1970 at almost 16 million cubic metres covering 2680 square kilometres. Sustainable annual yield has been estimated at 566 thousand cubic metres. By 1972 only four tracts incorporating some 3.7 million cubic metres on 622 square kilometres had been allocated under agreement or licence. All were allocated to foreign-based companies, but exploitation of these has not been continuous because of extensive cyclone damage in 1972 and the depressed demand for timber in Japan.

14. At this stage the industry does not appear to be making a major contribution to the local economy, but long-term domestic benefits will probably increase at a faster rate than the industry's overall expansion once the world demand for timber again picks up.

Fisheries

15. The waters surrounding the Protectorate contain many fish species and fishing is traditionally important to the subsistence of coastal dwellers. Small commercial operations at Honiara, Auki and Gizo provide fresh fish for local markets and for actual exports of crayfish, bêche-de-mer, and marine shells.

16. The size of the catch and earnings from fish exports, however, have increased markedly since 1970 as a result of the establishment of a deep-sea fisheries joint-venture with the Japanese fishing company Taiyo. The local company, Solomon Taiyo, is permitted to take up to 30 000 tons of skipjack tuna annually until 1982. The venture is to use indigenous labour and local equipment at a level favourable to the Protectorate.

17. In September 1973 the company opened its canning and freezing facilities at Tulagi. Canning capacity is currently about 1500 tons a year but is expected ultimately to be double this. The rest of the catch will be sent to Japan and American Samoa for processing. Negotiations are in train for a similar venture to be established by the Taiyo Company in Honiara.

Mining

18. Mining has not played a significant part in the Protectorate's economy, but may well do so in the future. At present the only mineral exploited commercially is gold, and this in almost insignificant amounts. Various international companies (notably INCO, Mitsui, Utah and CRA), however, have undertaken detailed geological surveys in the Protectorate with the result that the existence of mineral deposits, including bauxite on Rennell, (23 million tons of ore), Rendova and New Georgia, copper on Wagina (30 million tons of ore) and nickel on Santa Isabel, has been proven. A recent deal concluded with the Japanese Mitsui Company for the mining of bauxite in Rennell Island shows promise. A few years ago interest was shown by two Australian companies in land and under-sea oil exploration in the Protectorate, but no reserves were discovered and oil-search activities have been discontinued.

Output of Principal Primary Products

19. Recent levels of output of major primary products are summarized below:

Product	1969	1970	1971	1972	1973
Copra (tons)	24 719	24 224	25 731	21 300	15 800
Cocoa (tons)	95	128	117	64	84
Timber (m^3)	218 000	235 000	264 000	278 550	281 900
Fish (tons)	0	0	4 099	6 800	7 500

Secondary Industry

20. Despite concessions, including tax holidays, manufacturing is small-scale and rudimentary. Most of the local enterprise and capital is provided by Europeans and Chinese. Secondary industry, which is concentrated in Honiara, includes sawmilling, building, printing and small factories producing biscuits, soft drinks, tobacco, wood products, concrete, fibre glass and fabricated metalwork. The only major venture outside Honiara is the fish canning plant at Tulagi, where a beef cannery may also be established. Village industry is restricted primarily to traditional handicrafts and the preliminary processing of agricultural produce.

Fuels and Power

21. The Protectorate imports all of its mineral fuel and lubricant requirements from the Middle East, Australia and Asia.

22. Electric power in the Protectorate is provided by small diesel-powered generators operated by the Electricity Authority and private firms and individuals; but these have become expensive particularly as a result of recent oil price rises and alternative sources of electricity, including hydroelectrification, are under study. Most of the present power generation provides electricty to Honiara, but Tulagi, Auki, Gizo and Kira Kira are also supplied with electric power.

Tourism

23. The Protectorate's traditional culture and its scenic beauty give it some potential for tourism, particularly if it could be developed in the wider context of the South Pacific generally. This potential is still largely untapped. This is largely due to the lack of adequate hotel accommodation and tourism promotion, and the limited development of other facilities. Nevertheless the number of tourists and the number of hotel rooms, have been increasing.

GOVERNMENT FINANCE AND ECONOMIC POLICY

Revenue and Expenditure

24. Public sector operations have expanded rapidly, and Government spending dominates the economy. As well as being the major source of money flows, the Government, as the main employer in the Protectorate, dominates the labour market and the setting of wage and salary levels. It is also the main purchaser of domestic goods and services and, given the high import content of Government expenditures, it exercises a leading influence over imports. Furthermore, the Government has been the major contributor to gross capital formation. (See diagram opposite.)

25. Since 1971 the structure and size of recurrent revenues and expenditures have changed little, but capital revenues, largely in the form of increased British development aid, and expenditures were approximately doubled as development plan projects were implemented. The Government hopes to phase out entirely the Grant-in-Aid component of budget revenues by 1980. Development projects such as those in timber and fisheries, together with improved taxation, should facilitate the attainment of this objective by greatly increasing local revenues in the second half of this decade. However, delays in some major revenue-earning development projects, rising costs and progressively increasing administrative, development and social service outlays could be an impediment.

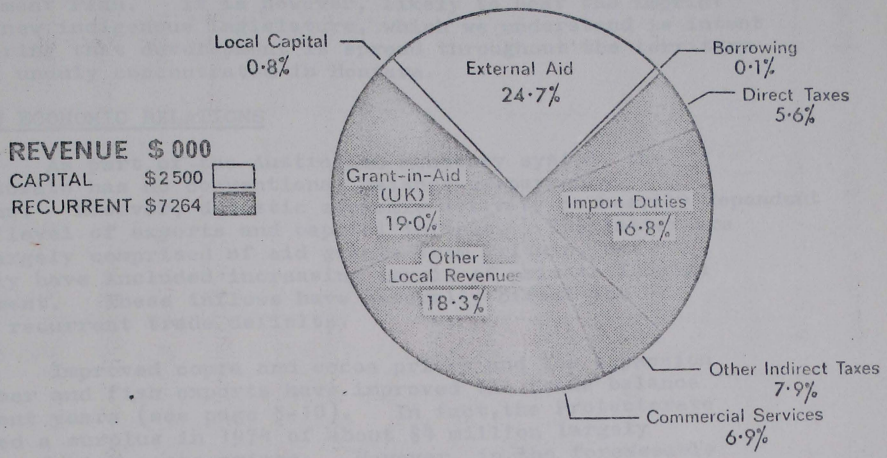
26. The Protectorate has borrowed little in the past, and has, therefore, scope for increasing its development funds by resorting to international loans, provided that they can be secured on favourable terms.

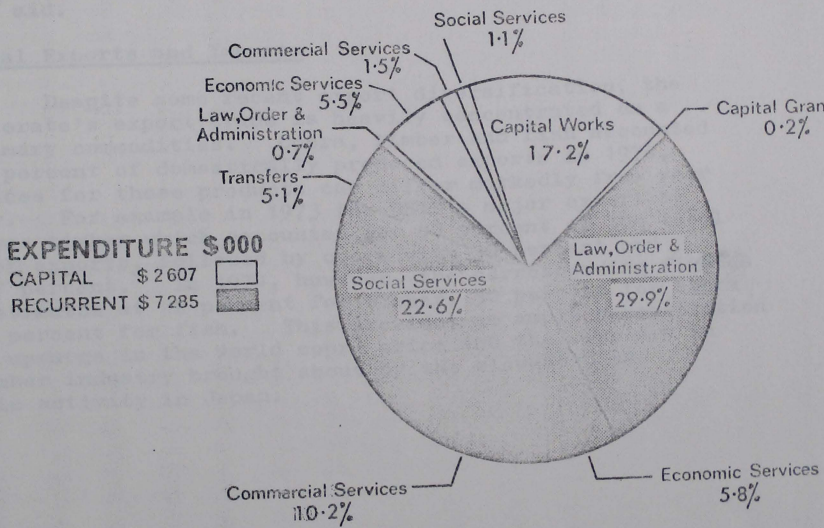
Development Plans

27. The stated overall objective of the Protectorate's Sixth Development Plan (for the period 1971-74) was to lay the basis for substantially reduced external economic dependence. The objectives of policies outlined for the primary and secondary sectors were to raise the rate of economic growth through the exploitation of agricultural, marine, forest and mineral resources. Priority was given to timber extraction, fishing and mining, the only sectors capable of rapidly increasing output in the short-term. For the longer-term the Plan provided for the development of agriculture as the predominant activity, but this would depend much more on Government initiatives and participation than on the development of the timber, fishing and mining industries which depend on direct foreign involvement.

28. Encouraging progress towards the Plan's objectives was achieved in fisheries, oil palms, cattle, new planting of coconuts, roads, malaria eradication and because of the recent upturn in the world copra market, in copra returns.

GOVERNMENT REVENUES AND EXPENDITURES (1971)





Less progress was made in timber production, mining, marketing, the rationalization of shipping and trade, and in local government housing for low-income families. The principal setbacks were caused by planning delays, inflation (particularly increased fuel prices), depressed timber markets and the destruction of valuable crops, particularly timber, by cyclones in 1972.

29. We have no detailed information yet on the New Seventh Development Plan. It is however, likely to bear the imprint of the new indigenous legislature, which we understand is intent on ensuring that development is spread throughout the territory and not unduly concentrated in Honiara.

FOREIGN ECONOMIC RELATIONS

30. As part of the Australian monetary system, the Protectorate has no conventional balance-of-payments problems. However, domestic economic activity is heavily dependent on the level of exports and capital inflows. The latter are very largely comprised of aid grants from Britain, but recently have included increasing levels of private foreign investment. These inflows have generally offset the BSIP's recurrent trade deficits.

31. Improved copra and cocoa prices and the expansion of timber and fish exports have improved the trade balance in recent years (see page 5-10). In fact, the Protectorate achieved a surplus in 1974 of about $4 million largely because of high copra prices. However, in the foreseeable future the Protectorate's import demand is likely to expand rapidly and the economy to remain heavily dependent on foreign aid.

Principal Exports and Imports

32. Despite some recent export diversification, the Protectorate's export trade is heavily concentrated on a few primary commodities. Copra, timber and fish accounted for 82 percent of domestically produced exports in 1974, but prices for these products can differ markedly from year to year. For example in 1973 the BSIP's major export by value was timber which accounted for 40 percent of the total value of exports, followed by copra with 30 percent and fish 17 percent. In 1974, however, the corresponding figures were estimated at 22 percent for timber, 50 percent for copra and 20 percent for fish. This provides an ample demonstration of the upsurge in the world copra price and the downturn in the timber industry brought about by the slow-down in economic activity in Japan.

33. Minor exports include scrap metal, marine shells, tobacco and cocoa. Further primary commodities, palm oil, rice, bauxite and copper are likely to provide for increasing export diversification and higher export levels in future.

Principal Exports (1969-73)

($000)

Commodity	1969	1970	1971	1972	1973
Copra	3 471	3 633	3 825	1 824	2 813
Timber	2 475	2 839	3 283	2 512	3 926
Fish	-	-	1 238	3 584	1 536
Other	530	643	927	2 908	2 034
TOTAL	6 476	7 115	9 273	10 828	10 309

34. The Protectorate's imports comprise an array of consumer and capital goods. The major categories, which reflect the high import component of development projects, are machinery and transport equipment and manufactured goods. Together these accounted for 63 percent of total imports in 1972, and foodstuffs accounted for a further 17 percent. The Protectorate experienced considerable import demand restraint in 1973, but given overseas inflation, rising fuel prices, an increasing awareness of overseas consumption patterns, and the demands of economic development, this may be increasingly difficult to maintain.

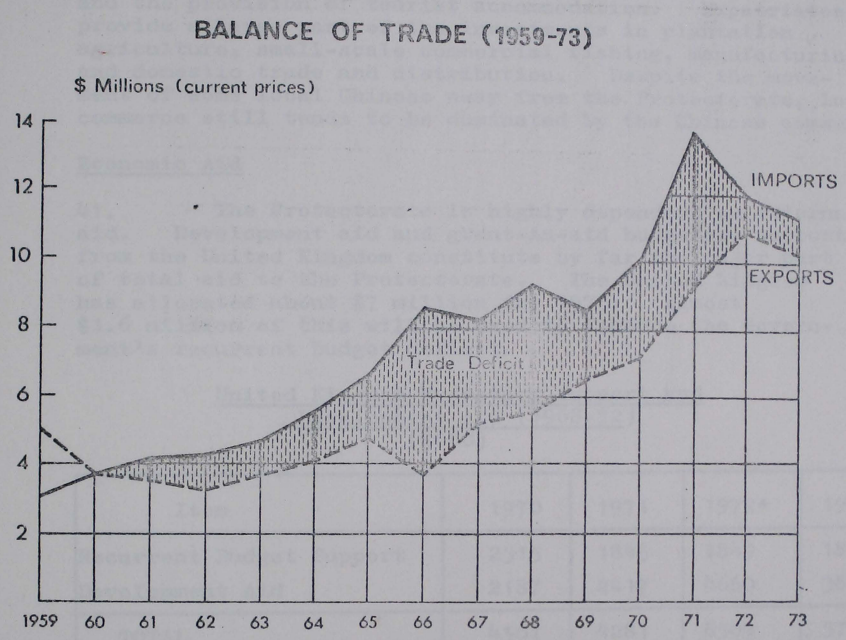
Principal Trading Partners

35. In 1972 Japan took 65 percent of the BSIP's exports by value and this dominance seems likely to be maintained in the long run. It has taken most of the Protectorate's timber, although its demand has slackened off as a result of the slowing down of the Japanese economy. In addition, about half of the BSIP's fish exports go to Japan and it has also been a major copra market. About half the Protectorate's fish exports in 1972 went to American Samoa, making it the BSIP's second most important export destination in that year, a trend that is likely to continue. Australia's share of the Protectorate's exports has tended to fluctuate between 10 and 20 percent but fell to about 7 percent in 1972. New Zealand's share is slowly increasing.

36. Despite the decrease of its relative importance as a trading partner Australia remains the major source of most categories of BSIP imports. New Zealand's sales to the Protectorate have been increasing since 1966.

Balance of Trade

37. The pattern of the Protectorate's trade balance since being a net exporter in 1959 is shown below. The rapid rise in imports prior to 1971 was attributable to growing government expenditures financed by aid, and to a high importing propensity due to the small size of the local market and the concentration of money incomes in expatriate hands.



38. Although final figures are not available for 1974, the narrowing trade deficit in more recent years, evidently attributable to considerable demand restraint and the upswing in world copra prices, led the Protectorate to its first trade surplus since 1960. The 1974 surplus was about $4 million compared with a trade deficit of $1.7 million in 1973.

Foreign Investment

39. Since 1968 the annual inflow of foreign business capital, predominantly from Japan, the United Kingdom and Australia has increased markedly. In 1971, for example, it totalled $2 500 000 compared with $500 000 two years earlier. This capital has been concentrated in the major growth sectors (forestry, fishing and mining), but is also involved in a large way in some agricultural ventures (particularly rice and oil palm).

40. Japanese and Australian interests are also involved in commerce, including tourism. The Commonwealth Development Corporation is the major partner in the oil palm venture and is also involved in cocoa production and the provision of tourist accommodation. Expatriates provide a large part of the investments in plantation agriculture, small-scale commercial fishing, manufacturing and domestic trade and distribution. Despite the movement of some local Chinese away from the Protectorate, local commerce still tends to be dominated by the Chinese community.

Economic Aid

41. The Protectorate is highly dependent on external aid. Development aid and grant-in-aid budgetary support from the United Kingdom constitute by far the major part of total aid to the Protectorate. The United Kingdom has allocated about $7 million for 1975. Almost $1.6 million of this will be used to finance the Government's recurrent budget deficit.

United Kingdom Budgetary Support and Development Aid (1968-72)
($000)

Item	1970	1971	1972*	1973*
Recurrent Budget Support	2315	1845	1849	1878
Development Aid	2187	2417	4660	3864
TOTAL	4501	4281	6509	5742

42. Australian aid normally involves such projects as the provision of road building and agricultural equipment, training facilities and scholarships, and agricultural expertise. New Zealand granted $40,000 worth of official direct aid in 1973/74 and actual expenditure in 1974/75 is expected to be around $50,000.

* approximate

43. The Protectorate has also received multilateral assistance from international organizations, and benefits from broad projects undertaken in the Pacific by regional organizations. Aid from other non-official organizations has been periodically received.

PART VI : TRANSPORT AND COMMUNICATIONS

GENERAL

1. Geographical factors present the BSIP with greater transportation problems than some other archipelagic territories. The people and economic resources are unevenly spread through six major and many small islands. No single island is dominant in population and resources to the extent that Viti Levu, for example, dominates Fiji. Economic development of the BSIP thus calls for a transportation system that serves a wide area.

2. Shipping is by far the most important transportation service and remains essential for the territory's continued economic development. Because of the Protectorate's insular nature, and the fact that the inland areas of most islands are not easily exploitable, what economic development has taken place, including traditional subsistence agriculture, has been confined largely to the coasts. The products of the cash sector have been largely of bulky primary commodities for export to overseas markets. Sea transport provides the basic means of movement for such goods except in the few areas where it has been physically and economically possible to build roads; the roading system has however been very limited and will have to be expanded to service the growing cash economy of the larger islands. Air transport is playing an increasing role, particularly in administration, but its overall importance is still relatively minor. There are no railways.

ROADS AND ROAD TRANSPORT

3. The roading system is not well developed. There are only about 380 kilometres of main roads in the Protectorate compared with more than three times that length in Fiji, which is a somewhat smaller country. Priority for road building has generally been given to areas of economic importance but social and political factors have also been taken into account, such as the need to link small isolated communities with each other and with the main centres of administration and trade. In addition there may be a need to open up new agricultural lands where population pressures are building up, for example on Malaita.

4. The north Guadalcanal road of 128 kilometres runs from Lambi Bay in the west to Mbokokimbo River in the east, and there are plans to extend the road east and west. On North Malaita the road runs for 121 kilometres from just south of Auki round the north coast to Fouia. These main roads are about 10 metres wide, drained and

gravelled. They are all-weather except for some river crossings which are either fords or submerged bridges and are closed when the rivers are in spate. All the main roads are well maintained; they have no severe gradients but there are a few sharp curves. The Lungga River is only bridged at one place, a steep gorge about 10 km east of Honiara.

5. Segments of natural-surface, low-grade, single-lane secondary and feeder roads and tracks totalling some 612 kilometres serve localities on Guadalcanal, Banika Island (Russell Group), Santa Isabel, Malaita, Small Malaita, San Cristobal (Makira), Choiseul, Wagina, Kolombangara, New Georgia, Gizo, Vella Lavella, Ulawa and the Santa Cruz Islands. These include private roads on plantations, forestry roads and roads built and maintained by local authorities. They vary in standard from all-weather routes to vehicle tracks which are suitable only for Land Rovers and for light tractors and trailers in dry weather. There are 77 kilometres of secondary and minor roads in urban areas at Honiara, Auki and Gizo. About 18 kilometres of the 23 kilometres of road in Honiara are bitumen-sealed.

6. Road usage outside Honiara is very limited. In 1972 there were only 1796 licensed vehicles in the territory. Although traffic flows are very small the climate and terrain impose conditions which demand more durable road and bridge construction than would otherwise be necessary. Bailey bridges are extensively used. Private cars are used in Honiara, and to a lesser extent in Auki on Malaita, but there are very few elsewhere. In Honiara there are taxis and a public bus service.

INLAND WATER TRANSPORT

7. The rivers are too short and rapid to be of economic significance. They are usually tidal up to about a kilometre inland and rise and fall quickly after heavy rain. Canoes powered by outboard motors are extensively used for transport and fishing in the lagoons formed by the barrier reefs off the islands.

MARITIME TRANSPORT

8. There are few good ports in the Protectorate and this has been a handicap to development. The only ports used by overseas ships are Honiara on Guadalcanal, Gizo and Ringgi Cove in the New Georgia Islands, Yandina in the Russell Islands and Tulagi on Florida I. Of these only Honiara has good facilities by regional standards. Overseas and local vessels also use anchorages and landing places in the Shortland Islands, New Georgia, Choiseul and San Cristobal. Small trading vessels visit the Outer Islands - Rennell, Santa Cruz (Graciosa Bay), Ontong Java and occasionally Stewart. Access by sea to Santa Isabel Island and Malaita is by means of landing places (the main ones being Buala and Auki respectively) but these are barely adequate.

9. At Honiara reclamation is taking place west of Point Cruz. There are plans for an overseas wharf at Gizo, a wharf for small vessels at Auki, and for rural wharves to serve most parts of the country.

Port of Honiara

10. The principal port is Honiara on the north coast of Guadalcanal Island (British Admiralty Chart 2893). Anchorage is unlimited, the tidal range is about 0.9 metres and Port Military Capacity is estimated at 614 tonnes per day.

11. Wharves. There is a concrete deep water wharf. This is 71.6 m long with a least depth of 8.5 m alongside which can accommodate vessels up to 198 m in length. A dolphin stands about 23 m ENE of the E end of the wharf, to which it is joined by a catwalk. Small Ship's Wharf extends 131 m WSW from the W end of the deep-water wharf; it provides 85 metres of berthage with minimum depth alongside of 3.4 m. There is good access by road to the town.

12. Jetties. There are three jetties close south of Small Ship's Wharf. Joanna jetty, the northern, is of wooden construction and about 23 m in length, with a depth of 2.4 m alongside its head. Wate jetty, the centre one, is of concrete construction. It has a similar depth alongside its head and extends about 31.6 m seaward. Kingfisher jetty, the southern of the three, is of steel and concrete construction, extends about 30.5 m from the shore, and has a depth of 4.9 m at its head. In addition Shell jetty, of steel piling construction, extends about 61 m seaward, close SE of Kingfisher jetty; it has a least depth of 4.3 m alongside the outer 21 m on each side. There is a landing barge ramp 6.1 m wide with least depth of 0.9 m, between Wate and Kingfisher jetties.

13. Facilities. Warehouse accommodation is 5500 sq m. No cold storage accommodation is available at the wharves. There are two mobile cranes (one six-ton and one two-ton); five forklifts, 30 four-wheel-trolleys and two tow motors. Fresh water is available at the deep-water wharf at the rate of about 10 tonnes/hour, but there are no facilities for supplying water to vessels at anchor. There is a bunkering service for gas, oil and petrol. Ship repairs are carried out at local garages and small workshops only. Two launches, a small 90 hp tug and one steel lighter are available. Pilotage is compulsory for vessels of over 100 gross registered tonnage.

14. Adequacy of Facilities. The port is well managed, and good use is made of available capacity. Turnaround of overseas vessels is satisfactory except when vessels' arrivals "bunch", but the introduction of unit loads vessels should greatly shorten turnaround requirements. Large cruise liners have to anchor off; lighters are used for loading them, and passengers are carried by small ferry boats. There is usually sufficient capacity for internal shipping, but there is congestion on about two or three days a month. There are no facilities for providing water to vessels at anchor, and marine diesel is not available. Ship repair facilities at Honiara are inadequate, but there is a government dockyard at Tulagi 24 n miles NNE of Honiara. There are plans for freezer/cooler facilities and a transit cattle-yard. Reclamation on the west side of Point Cruz continues.

Port of Gizo

15. Gizo Harbour is at the SE end of Gizo Island, off New Georgia Island (British Admiralty Chart 3266). Copra and cocoa are brought in from outlying plantations on other islands by small ships to be reloaded for overseas. Ships anchor in the harbour, sometimes with stern lines to the shore, and cargo is carried out to them. There is a wharf 18.3 m long with least depth alongside 5.5 m, several small jetties, and a 13.7 m slipway. There are plans for an overseas wharf 61 m long with about 9 m depth alongside. A limited amount of fresh water is available, and there are small stocks of diesel gas oil. There is a copra storing shed of about 1000 tonnes capacity. Local stores have deep freeze units. There is an airstrip on Nusatupe, one n mile to the E.

Port of Yandina

16. Yandina settlement is on Banika Island in the Russell Islands (British Admiralty Chart 2975). Sheltered anchorage for vessels up to 150 m in length is available in Renard Sound. There is a concrete and steel wharf 53.3 m long with a least depth alongside of 6.1 m. There are ample stocks of light diesel fuel and petrol. Limited supplies of fresh water are available. Covered storage capacity totals about 800 tonnes. There is an airstrip one n mile to the S.

Tulagi Marine Base

17. The vessels operated by the Marine Department at Honiara are maintained by the dockyard at the SE end of Tulagi Island, just off the S coast of Nggela Island (British Admiralty Chart 2658). There is anchorage for large vessels. A steel and concrete wharf provides 61 m of berthing space for vessels drawing less than 3.7 m. There are some smaller jetties, a 200 ton deadweight slipway, a smaller one recently constructed, and a 5 ton crane with 30 m outreach; also engineering, boiler-makers, ship-wrights and electrical workshops. A 190 kVA power station is barely adequate. There is a commercial ferry service to Honiara.

Port of Ringgi

18. Ringgi Cove is at the S end of Kolombangara Island in the New Georgia Islands (British Admiralty Chart 3416). Vessels of up to 10 000 tons anchor in the outer part of the cove. There is a wharf for timber ships, and logging cranes, but it is not a deep-sea wharf.

Beaches, Anchorages and Landing Places

19. In its current early stage of development the territory's anchorages and landing places are an important element in the transport system. (Selected beaches, anchorages and landing places are described in Annex B.)

Shipping

20. No less than six foreign-going shipping lines serve the BSIP. Arrivals are not evenly spaced and are not necessarily geared to the Solomons' economic requirements. The companies concerned are Karlander New Guinea Line, the New Guinea Australia Line, Sofrana Unilines, the Daiwa Navigation Company, the China Navigation Company and the Bank Line.

21. A large number of very small vessels provide domestic shipping services. This situation exists partly because many widespread places must be served, cargoes offering are often small, and a number of organizations are involved in providing services which are not always run on a commercial basis. In addition, because copra is permitted to be exported through only three ports (Honiara, Yandina and Gizo), extensive feeder services are needed; a change in this system has been under consideration. The vessels are operated privately, by the Government and by the churches. Most are timber-built and about a quarter of them are non-cargo carrying.

22. The Marine Department's fleet of 37 vessels ranges from 4 to 285 GRT (totalling 1434 GRT) and most are timber-built. The vessels are largely confined to the carriage of passengers, although the freight-carrying services provided by the Department's landing craft are an important exception. In addition the Department has a general purpose cargo ship, the "Wagina", which can carry 15 tonnes of cargo and up to 26 passengers. The Agriculture Department operates seven 6-metre-long coastal work boats. The Missions' vessels number about a dozen, the largest of which is under 100 GRT.

AIR TRANSPORT

23. Air transportation is not as well developed as in Papua New Guinea and is relatively less extensive, but this is partly because many areas of the Solomons have easy access to shipping services. There is one airfield, at Honiara, and 18 landing grounds. The Superintendent of Civil Aviation operates from Honiara, where there is a Flight Information Unit, but the regional

Flight Information Centre is at Townsville, Queensland, Australia. Government airfields and landing grounds are administered by the Director of Public Works, and there are also a number of local council and private landing grounds.

24. Weather forecasting is provided by the Australian Bureau of Meteorology, on behalf of the South Pacific Air Transport Council. A supplementary meteorological office is at Honiara.

25. The BSIP policy on airfield development is the establishment by the Government of at least one main airfield or landing ground on each island or group of islands, and subsidiary landing grounds provided by local councils with government assistance. The subsidiary landing grounds are comparatively inexpensive, but take a considerable time to construct, partly because of lack of trained supervision. At present they are barely adequate for local needs.

26. Solomon Islands Airways Ltd (Solair) based at Honiara operates internal services with BN 2A "Islander" and Beech "Baron" aircraft. External flights are provided by two airlines. Air Pacific operates a BAC-111 aircraft from Fiji via Vila to Honiara, and on to Port Moresby and Brisbane. Air Nauru operates a service, Melbourne-Brisbane-Noumea-Honiara-Nauru and return using a Fokker F-28 aircraft.

Airfields and Landing Grounds.

Name, Coordinates, Elevation(AMSL), Map Reference	Runway Heading, Dimensions(metres), Surface, Capacity	Operator, Locality, Facilities
AUKI(Gwaunaru'u) 08°41'S, 160°41'E 5 ft (G5)	18/36, 945 x 30, coral and grass, LCN 30 75 psi. Strip 1070 x 92.	Government. On Malaita. NDB. No ground services. Met station.
AVU AVU 09°51'S, 160°25'E 8 ft (R15)	14/32, 675 x 24, grass, light ACFT. Strip 720 x 76.	Council. On Guadalcanal 40 n miles SE of Honiara. No ground services.
(M)BABANAKIRA 09°45'S, 159°51'E 21 ft (Q15)	17/35, 490 x 60, grass, light ACFT	Council. On Guadalcanal 20 n miles SSW of Honiara near River Itina. No ground services.
BALALAI(Ballalae) 07°00'S, 155°54'E 5 ft (B3)	05/23, 730 x 25, coral and sand, light ACFT. Strip 850 x 90.	Government. Serves main islands in Shortland group. No ground services. ACFT fuel not available.

Name, Coordinates, Elevation (AMSL), Map Reference	Runway Heading, Dimensions (metres), Surface, Capacity	Operator, Loc Facilities
(M) BARAKOMA 07°54'S, 156°42'E 5 ft (C4)	14/32, 1138 x 38, coral, LCN 20 75 psi. Strip 1210 x 92.	Government. Vella Lavell ground servi
BELLONA (Chogau) 11°17'S, 159°48'E 56 ft (F8)	11/29, 640 x 24, grassed earth. Strip 727 x 45. Light ACFT up to 3175 kg.)	Council. On Island 112 n S of Honiara ground servi
CHOISEUL BAY (Taro I) 06°42'S, 156°27'E 5 ft (C3)	13/31, 730 x 25, coral and sand, light ACFT. Strip 850 x 90.	Government. coast of Cho No ground services.
FERA (Maringah Lagoon) 08°05'S, 159°34'E (F5)	18/36, 680 x 20. Strip 800 x 50.	Government. coast of San No ground se
GIZO (Nusatupe) 08°06'S, 156°52'E 13 ft (C5)	15/33, 975 x 30, coral, LCN 30 75 psi. Strip 1097 x 76.	Government. Georgia Isla NDB. No grou services.
GRACIOSA BAY (Lwowa or Luova) 10°45'S, 165°48'E 18 ft (K11)	06/24, 914 x 24, coral, LCN 20 80 psi. Strip 1036 x 90.	Government. Ndende in Sa Cruz Islands No ground se
HONIARA (Henderson) 09°25'S, 160°03'E 30 ft (R14)	06/24, 1920 x 46, bitumen sealed, LCN 35 100 psi. Strip 2043 x 150.	Government. Guadalcanal miles E of H NDB. DME. R/ VASIS. 2 hyd 54 500 litre capacity. Por runway light Met station. ACFT operate
HONIARA (Kukum) 09°25'S, 160°01'E 8 ft (Q14)	06/24, 1350 x 30, coral, LCN 15 75 psi. Strip 1466 x 75.	Government. Guadalcanal. by prior req Used as alt to Henderso civil aircra
KIRA KIRA 10°28'S, 161°54'E 10 ft (H7)	10/28, 1210 x 30, coral and grass. LCN 20 75 psi. Strip 1350 x 85.	Government. of San Cris NDB. No grou services. M
MARAU (Paruru) 09°52'S, 160°50'E 3 ft (S15)	05/23, 604 x 30, sand and grass, light ACFT. Strip 786 x 60.	Council. Of of Guadalca ground serv

Name, Coordinates, Elevation (AMSL), Map Reference	Runway Heading, Dimensions (metres), Surface, Capacity	Operator, Locality, Facilities
MONO (Stirling I) 07°23'S, 155°31'E 35 ft (B4)	04/22, 945 x 25, coral and grass, light ACFT. Strip 1100 x 60.	Council. In Treasury Islands. No ground services.
MUNDA 08°20'S, 157°16'E 10 ft (D5)	07/25, 2130 x 36, coral, LCN 20 80 psi. Strip 2225 x 86.	Government. On New Georgia. NDB. R/T. No ground services. Met station.
PARASI 09°43'S, 161°24'E 100 ft (H6)	12/30, 600 x 24, coral, light ACFT. Strip 747 x 85.	Council. On Maramasike I 89 n miles ESE of Honiara. No ground services.
RENNELL (Tingoa) 11°34'S, 160°05'E 94 ft (G8)	13/31, 670 x 25, coral, light ACFT. Strip 732 x 45.	Council. On Rennell. No ground services.
RINGGI COVE 08°07'S, 157°08'E 10 ft (D5)	01/19, 1030 x 24, coral, light ACFT. Strip 1210 x 90.	Private. Kolombangara I in New Georgia Islands. Near Port of Ringgi. No ground services.
SEGHE 08°34'S, 157°52'E 5 ft (D5)	10/28, 915 x 30, coral and grass, LCN 20 75 psi. Strip 1006 x 92.	Government. On New Georgia. No ground services.
YANDINA 09°05'S, 159°14'E 20 ft (F6)	12/30, 1770 x 28, coral, LCN 20 80 psi. Strip 1830 x 86.	Private. Levers' Pacific Plantations. In Russell Islands. No ground services.

TELECOMMUNICATIONS

General

28. Telecommunications facilities are owned and operated mainly by the Government's Post and Telecommunications Department. The planning, control and supervision of the facilities are vested in managers and senior technical advisers who have been western-trained. There is a gradually increasing number of indigenous technicians and operators, primarily from the Honiara Technical Institute, and a few who have received overseas training. However, it may be many years before the P & T Department ceases to be dependent upon expatriate senior technicians and telecommunications engineers.

Communication Sites

29. All transmitters operated by P & T, the Solomon Islands Broadcasting Service and all commercial organizations are installed near Henderson Airfield. The air radio building, also near the airfield, contains the transmitters for air radio, aeronautical, marine and navigational aids. The air radio receivers are in the airfield terminal building. The communications site at Vavaya Ridge, overlooking Honiara, houses all VHF installations. With the exception of air radio it contains the receivers for public, marine and aeronautical communications, and for radio telephone services.

The communications centre is at the General Post Office in Honiara.

Internal Communications

30. Radio. Each of the four districts of the Protectorate has a control station operated by the P & T Department, and is allocated a district frequency. Control stations are at Kira Kira (sub-station of Santa Cruz), Auki (no sub-station), Honiara (sub-station at Yandina) and Gizo (sub-station at Munda). There are also some privately owned stations operated by missions, plantations and timber companies. Each P & T control station sends and receives telegrams to the private stations within its district. Telegrams collected by the control stations for onward transmission are forwarded to Honiara. Gizo and Kira Kira traffic is forwarded by continuous wave, and Auki traffic by teleprinter link carried on the Honiara/Auki VHF system. The P & T Department also operates a VHF speech link to Tulagi.

31. Police Radio Network. Police HQ at Honiara is linked by VHF with District Police HQs at Kira Kira, Auki and Gizo, and also with police stations at Graciosa Bay (Santa Cruz Islands), Yandina (Russell Islands), Munda (New Georgia) and Korovou (Shortland Islands). There are three vehicle-mounted stations at Honiara and one each at Kira Kira and Gizo. In addition the Honiara police use walkie-talkies.

32. Broadcasting Service. The Solomon Islands Broadcasting Service (SIBS) employs three transmitters each of 5 kW (one medium wave and two short wave equipments). Programmes from the central studios in Honiara are sent via a VHF link to the transmitters near Henderson airfield. Equipment is maintained by the P & T Department. Within the Protectorate there is good reception in all areas from 6 am to about 9 am and from 5 pm to 1030 pm.

33. Telephone Systems. There is a 600-line automatic telephone exchange at Honiara in the GPO Building. This operates in conjunction with subsidiary exchanges at the Secretariat offices, the central hospital, technical institute, Police HQ, PWD, and the King George VI School. In addition Gizo has a 100-line and Auki an 80-line automatic exchange.

Aeronautical and Maritime Communications

34. The P & T Department operates the Flight Information Unit at Henderson Airfield. This operates air-ground services and point-to-point communications with Port Moresby and Nandi, and with Nauru as required. Aeronautical liaison frequencies are also employed, contact being made with Rabaul, Port Moresby and Nandi. A radio navigation service is maintained; there are non-directional beacons at Henderson airfield, Auki, Gizo, Graciosa Bay, Kira Kira and Munda, and at

Henderson there is distance measuring equipment. The Flight Information Unit also operates maritime services. Frequencies are carried for normal traffic and for distress.

International Communications

35. International communications are operated from the General Post Office in Honiara. Radio-telephone and radio-teleprinter services are provided to Sydney and Suva. The circuits employ HF transmitters.

Repair Facilities

36. The main repair facilities are based in Honiara at P & T HQ and at Henderson airfield. P & T also provide smaller workshops in the districts.

Future Developments

37. The Government's aim is to initiate developments to keep pace with the demand for services. A remote receiver site is planned in the Ilu area about 18 km east of Honiara. In addition it is planned to reconstitute the old P & T radio site on Vavaya Ridge as the main VHF station for inter-island communications.

PART VII : LOGISTICS

FOOD SUPPLIES

1. Because of the moist climate, food stocks have to be kept to a minimum, and any force established in the Protectorate would probably need logistic support from outside. The British Solomons Trading Company and other firms import bulk stocks, much of them from Australia. The main foods imported are meat, rice, flour, sugar and butter, and some fish, fruit and fresh vegetables. The larger firms have some frozen storage capacity (e.g. the Honiara Butchery has 85 cubic metres of controlled refrigeration). Refrigerator ships normally visit the Protectorate at least once a month, but there are occasional shortages of some foodstuffs if the gap between ships is prolonged.

2. The main subsistence crops are sweet potatoes, yams, taro, cassava and plantains. The bulk of these are also grown for marketing near district centres. In addition bananas, pineapples, watermelons, coconuts, ngali nuts, salad vegetables, beans, cabbage and sweetcorn are sent to these markets. In Honiara supplies of fresh meat from Guadalcanal-reared cattle, pigs and poultry are available. Although fishing is mainly on a subsistence basis, small-scale commercial operations are conducted at Auki and Gizo. During recent years the supply of fish to Honiara has much improved.

PETROLEUM, OILS AND LUBRICANTS

3. The Protectorate is dependent on imports for all POL requirements. The 1971 imports, and the main countries of origin were as follows:

a. 11 220 tonnes of diesel fuel (Singapore, Iran, Kuwait).

b. 2610 tonnes of motor spirit (Iran, Singapore).

c. 1284 tonnes of aviation fuel (Iran, Singapore, Bahrain).

d. 1030 tonnes of lamp oil and white spirit (Iran, Australia).

e. About 1000 tonnes of lubricating oils (Australia).

4. In Honiara the Shell Company and Mobil Oil (Australia) each has a bulk fuel installation. They are replenished from tankers for which there is an anchorage with an underwater pipeline which can serve both installations. The largest tanker to use the pipeline has a length of 172 metres. Shell has five tanks with a total capacity of 2670 tonnes, and Mobil has two tanks

with a total capacity of 560 tonnes. Delivery to petrol stations in Guadalcanal is by road tankers. Aviation fuel is stored at Henderson Airfield. In 1969 a local company was formed to import, store and distribute petroleum gas; bulk storage facilities are close to the port of Honiara.

5. Shell has bulk fuel storage for 46 tonnes of diesel fuel at Gizo, 33 tonnes in the Shortland Islands, 15 tonnes at Mbuma on Malaita, and 30 tonnes at Allardyce Harbour on Santa Isabel Island. Mobil is planning to construct tanks on Auki and Gizo.

ELECTRIC POWER SUPPLIES

6. The British Solomon Islands Electricity Authority operates continuous supplies at Honiara, Auki, Gizo, Kira Kira and Tulagi, and maintains small supplies at Dala on Malaita and at Tetere on Guadalcanal.

7. A 4 MW power station has recently been completed at Mbetikama near the Lungga River about 9 km east of Honiara. Dual diesel-engined generating sets supply power at 240/415 volts, 50 Hz. In addition there are standby generators at Henderson Airfield, and at the hospital and the communications centre in Honiara.

ENGINEER RESOURCES

8. Stone, sand and river gravel are generally available in most areas although local shortages of road metalling material have occurred. Coral material is available in the coastal areas.

9. Locally produced timber for construction purposes is generally available throughout the Protectorate. The companies which are exploiting timber resources are mainly engaged in log extraction for export, but they also have sawmilling facilities. There are a number of small sawmilling companies, and the Church missions have sawbenches supplying their requirements.

10. The Government's inventory of road-building and heavy earth-moving equipment is the largest in the Protectorate. It is operated and maintained by the Public Works Department which has its main depot and most of its heavy equipment at Honiara. There are also depots at Gizo, Auki and Kira Kira, and three mobile workshops which are deployed to the other islands as required. The depot at Honiara is well-equipped. It has carpentry, machine, electrical, air-conditioning, plumbing and sheet-metal, and automotive and mechanical equipment repair workshops. The department produces concrete blocks, slabs, piles and pipes.

11. The Public Works Department's equipment includes tractors, bulldozers, scrapers, graders, road rollers, air compressors, a truck-mounted crane, dump trucks, flat-bed trucks, a concrete mixer, a mobile gravel screener and an arc welder.

WATER SUPPLIES

12. In general there is no shortage of potable water throughout the Protectorate. The Honiara water supply system is fed from springs in the Lengakiki area, which provide a part-gravity, part-pumped supply, from boreholes at Kukum, and from ground water drawn fron an infiltration gallery and borehole at Mataniko. Economic charging and the installation of meters have reduced the rate of increase in consumption, although the number of connections has grown considerably. In 1972 the average daily consumption in Honiara was 4090 cu metres. Shortages have occurred on Guadalcanal, as the north coast suffers a dry spell during May to September; also some of the river flow is lost when the rivers reach the plains, as the water enters porous alluvium and filters out to sea beneath the plains.

13. Piped supplies are provided in Auki, Malu'u, Gizo, Munda, Kira Kira and Santa Cruz, although the source of supply for Gizo is inadequate and the system at Auki needs to be improved. There is a limited supply in Tulagi in the Florida Islands. Village piped water supplies, where necessary, are provided either by communal effort or by local councils.

BRITISH SOLOMON ISLANDS PROTECTORATE

MAP AND CHART COVERAGE

MAPS

1. A good selection of mapping of the Protectorate is available from the Department of Lands and Surveys, Honiara. Map production, including geological cover, is the responsibility of the Lands Mapping Section which operates commercially.

2. There is a wall map at a scale of 1 : 1 000 000 (1968) produced in two halves and an atlas map at a scale of 1 : 3 000 000 (1971). Both are produced by the Directorate of Overseas Surveys in the United Kingdom. The principal scale used for mapping the islands is 1 : 50 000. There is an American Military Survey Series that covers Guadalcanal, the Russell Islands and the Florida Group (1956 - one sheet revised in 1962). The Directorate of Overseas Surveys, which is completing mapping at a scale of 1 : 50 000 for the Protectorate, has produced a series which since 1967 has covered the Shortland Islands, Choiseul, New Georgia, Santa Isabel, Malaita and San Cristobal. The Department of Lands and Surveys has also produced a revision of the A.M.S. Series in dyeline print form.

3. A new series at a scale of 1 : 150 000 has been designed, and maps of the New Georgia Group, Santa Isabel and Guadalcanal have been printed. There are also locally produced sketch maps of the Santa Cruz and other islands in the Eastern District available at various scales. Rennell Island is being mapped (BSIP Series R003) at a scale of 1 : 25 000 from aerial photographs. A series of maps of the Guadalcanal Plains area is being prepared at a scale of 1 : 10 000, and the area covered so far extends from Honiara to the Mberande River. Large-scale town plans of the Honiara Town Council Area, Gizo, Kira Kira and Munda are also produced in Honiara. A Joint Operations Graphic (Air) Series 1501 (scale 1 : 250 000) is published by the United States Air Force. There is a new map series in production based on a 1972 air survey. The first sheet (Honiara) was published in March 1974.

CHARTS

4. There are 25 British Admiralty Charts which provide good general coverage of the area and are periodically revised. In addition there are two BSIP charts and 15 track charts available from the Marine Department Headquarters in Honiara. There has been a reduction of the extensive range of charts of the area produced by the United States Navy Hydrographic Office in World War II.

BRITISH SOLOMON ISLANDS PROTECTORATE
BEACHES, ANCHORAGES AND LANDING PLACES

BEACHES

1. Because communications facilities are poorly developed throughout the archipelago, beaches and landing craft still play a part in the transportation system. The Marine Department operates a motor landing craft of 87 GRT. There are beaches that could be used in military operations on all the major islands, but the approaches are often encumbered by reefs, and exits are sometimes obstructed by swamps or dense forests. Some of the more accessible beaches are described below (with British Admiralty Chart numbers in brackets).

Choiseul Island (British Charts 3416 and 3419)

2. Sasamungga. There is a boat landing place on the beach opposite an anchorage in a depth of 14.6 m, sand, at 07°03'S, 156°46'E.

3. Tipisaka. At Tipisaka, 06°54'S, 156°39'E, there is a sandy beach and a stretch of flat land up to a river bank.

Vella Lavella (British Chart 3419)

4. A beach landing may be made at the N end of Liapara islet, one n mile S of Mbilua. Also there may be two small piers on the NE side of the islet; 07°57'S, 156°43'E.

New Georgia (British Chart 3266)

5. There are three deep channels into Rendova Harbour. On each side of Renard entrance there is an island with sandy beaches, at 08°24'S, 157°20'E.

Guadalcanal (British Charts 1469 and 2893)

6. The following beaches are on the north coast in the vicinity of Honiara:

a. Red Beach (09°25.3'S, 160°07'E). East of Tenaru River. An unmade metal road from Tenakoro (Dodo Creek) connects with the main road.

b. Tenaru Plantation Beach (09°25.3'S, 160°05'E). West of Tenaru River. Access to main road is also via Tenakoro.

c. Lungga Beaches (09°24.5'S, 160°03'E). South-east of Lungga Point, off which are numerous wrecks. Plantation road gives access to main road.

d. Kukum Beach (09°25'S, 160°00.2'E) South-west of Lungga Point. The beach at Takake (Marine Training School) is clear of coral reefs, but there are some wartime wrecks.

e. Honiara Hospital Beach (09°25.6'S, 159°58.4'E). Close east of Mataniko River. The best landing can be made immediately east of the hospital. An unmade road joins the main road.

f. Honiara Public Works Beach (09°25.6'S, 159°57.9'E). Close west of Mataniko River. The tar-sealed approach road to the PWD joins the main road.

7. During the south-east trade winds (April to November) the beaches on the north coast of Guadalcanal experience strong on-shore winds and heavy seas, mainly during the late afternoon. Early to mid-morning is therefore the best time to land.

San Cristobal (Makira) I. (British Chart 3412)

8. Achard Point. There is a sandy beach east of Achard Point, 12 n miles WNW of Makira Bay at 10°20'S, 161°18'E.

9. Wanione Bay. Anchorage may be obtained in a depth of 23.8 m off the Catholic Mission at 10°29'S, 162°03'E. Anchorage may also be obtained 0.5 n miles south, in a depth of 14.6 m off a sandy beach. Exposed to north-west winds.

10. Ugi Island. There is a convenient anchorage in the southern part of Selwyn Bay. Passengers can be landed by surf boat on a small sandy beach in the south-eastern corner, 10°16'S, 161°43.5'E.

ANCHORAGES

Shortland and Treasury Islands (Bougainville Strait)

11. The Shortland Islands are in Bougainville Strait, which separates Choiseul Island from Bougainville Island. The Strait is a recommended route for all vessels proceeding from the east coast of Australia to Japan, and for high-powered vessels in either direction. Anchorages are described in the following paragraphs.

12. Fauro Island. Fauro lies 20 n miles south-west of Choiseul Bay. The island is indented by many bays; on its south-eastern side it is protected by a broken barrier reef inside which are several anchorages. Uncharted shoals exist in the channels east and west of Fauro, which should therefore not be used. (British Chart 3419).

13. Stirling Island. There are the remains of a wharf 200 m east of Laliti Cove on the northern side of Stirling Island at 07°26'S, 155°35.0'E. (Australian Chart 683.) There is anchorage on the western and eastern sides of Watson islet.

14. Mono Island. There are the remains of jetties offshore 100 m west of Falamai at 07°25.7'S, 155°34.8'E (Australian Chart 683). There is anchorage on the western and eastern sides of Watson islet.

Choiseul Island (British Charts 3416 and 3419)

15. A mission station was established at Moli Island in 1958, on the south-western side of Choiseul at 06°50'S, 156°32'E. There is a well-sheltered anchorage between the island and Choiseul Island.

Vella Lavella

16. A narrow passage leads to an anchorage off Mbilua (Biloa) a mission station at the south-eastern end of the Island; 07°56.5'S, 156°43'E (British Charts 3419 and 3416)

New Georgia

17. Viru Harbour is on the southern side of New Georgia Island at 08°30'S, 157°44'E. (British Charts 3259 and 3416.) There is good anchorage in depths of 18-22 m for vessels up to 92 m long, but no facilities.

Santa Isabel Island

18. Allardyce Harbour is on the southern coast of Santa Isabel Island at 07°47'S, 158°39'E. (British Charts 3402 and 3259.) A large vessel may anchor in depths of from 44 to 49 m. There are no facilities. Up to 1972 the harbour was used for loading timber, cargo work being carried out at anchorage.

San Cristobal (Makira) Island (British Chart 3412)

19. Santa Ana. Port Mary, on the western side of Santa Ana Island, is formed by a break in the fringing reef and a slight indentation in the coast. Good anchorage may be obtained, in a depth of 27 m, sand, except in the north-west monsoon; 10°50'S, 162°27'E. (British Admiralty Plan 1580.)

20. Marunga Harbour. Reported to afford anchorage in depths of from 14.6 m to 21.9 m; 10°44'S, 161°47'E. (British Admiralty Plan 1580.)

21. Makira Bay. This is probably one of the safest anchorages in the group. Anchorage may be obtained in a depth of about 45.7 m, abreast Makira Village at 10°25.3'S, 161°28.9'E. (British Admiralty Plan 1580.)

22. Star Harbour. Excellent shelter in depths of 18 to 27 m, at 10°49.5'S, 162°17.1'E. Star Harbour and Waimasi cove are reported to be the only safe anchorages on E and N coasts respectively of San Cristobal during NW monsoon. (BA Plan 1580.)

22. Kira Kira. Kira Kira at 10°27'S, 161°55'E is the headquarters of the District Commissioner for the Eastern district. The anchorage is not good, and is unsafe in north-west winds. Passengers are ferried by surf boats from ships' boats about 46 m offshore.

Outer Islands

24. Ontong Java. There is a trading station on the S end of Luaniua Island at 05°30'S, 159°42'E (British Chart 2894).

25. Stewart Islands. Small trading vessels visit Tapuaki village, on Sikaiana islet, to collect bêche-de-mer and copra; 08°25'S, 162°52'E. (British Chart 214.)

26. Rennell. Kanggava Bay, 11°40'S, 160°17'E, on the S side of Rennell Island, affords anchorage in a bight in the coastal reef in a depth of about 14.6 m. Sheltered except in a south-west wind. (British Chart 208 and Plan 1580.) There is a projected wharf area in Lughugi Bay.

LANDING PLACES

27. In addition to the ports and anchorages, the following landing places are in common use.

Shortland and Treasury Islands

28. Nila. Nila settlement is on the northern side of Poporang Island. It is separated from Shortland Island by Shortland Harbour at 07°05'S, 155°53'E (Australian Chart 683). There is good anchorage used by large timber ships, and a small wharf which will accommodate vessels up to 30.5 m long and 3.4 m in draught. Water is laid on to the wharf but there are no other facilities.

29. Balalai (Ballale) Island. A concrete jetty with a depth alongside of 1.8 m extends 15.2 m from the centre of the southern side of Balalai Island at 07°01'S, 155°53'E. (Australian Chart 683.)

30. Choiseul Bay. Anchorage may be obtained anywhere in Choiseul Bay, 06°42'S, 156°25'E, and there is a substantial concrete wharf. (Australian Chart 683.)

Kolombangara Island

31. At Mbambari Harbour there is a small wharf available for small craft drawing up to 2.1 m; 08°04'S, 157°11'E. (British Chart 3266.)

New Georgia Island (British Charts 3402 and 3416)

32. Seghe (Sege). There is a small wharf, depth alongside 3.7 m, on the western shore of the passage between New Georgia Island and Vangunu Island.

33. Sasavele (Ndume) Island. About midway along the north-eastern side, on the south-western side of Honiavasa entrance, there is one wharf 22.9 m long and another 45.7 m long; 08°19'S, 157°20.6'E (British Chart 3266).

34. Munda Harbour. There is a mission wharf to the north of Munda Point, least depth 3 m in 1963, and a government wharf at Lambeti, least depth 2.4 m.

Santa Isabel Island

35. Thousand Ships Bay. In 1965 there was a wooden jetty at the northern end of Suma Bay, on north-eastern side of Thousand Ships Bay, at 08°26'S, 159°42'E. (British Chart 3439.)

36. Tatamba. On the south-western side of Draper Point, 08°24'S, 159°48'E there is a jetty, used by inter-island vessels. (British Chart 3403.)

37. Buala. Buala, 08°09'S, 159°35'E is on the main island opposite Fera Island, and is the headquarters for the administration of Santa Isabel. It has a wharf for small vessels drawing not more than 3.7 m and up to 36.6 m long. There is regular sea communication with Honiara. (British Chart 3439.)

38. Kia. Kia village stands on Carter Point at 07°34'S, 158°25'E. Fair anchorage may be obtained in a depth of 40 m about 0.5 n miles south-south-west of Wreck Point, 3 n miles north of Kia village.

Russell Islands

39. At West Bay, Pavuvu I, there is a small pier at 09°01.3'S, 159°06'E, and a larger one with a depth of 1.5 m alongside on the south-western side of Pipisala Bay at 09°05'S, 159°07'E. There is also a small pier at 09°02'S, 159°05.2'E. (British Chart 2975.)

Florida Islands

40. Siota Harbour, at the northern entrance of Mboli (Utaha) passage, affords good shelter during south-east winds, in depths of 14.6 m to 16.5 m. There is a small pier, near Siota mission station, available for large boats at 09°03.5'S, 160°18.5'E (British Admiralty Chart 3404.)

Malaita

41. There are two jetties in the northern end of Auki harbour (08°46'S, 160°41.7'E). One jetty has a 30.5 m wooden wharf face on either side and a depth of from 2.4 m to 5.5 m alongside. The other wooden jetty extends parallel to the main jetty and 30.5 m north-west of it. Work has started on a wharf for small vessels at Auki. At Mbuma on the eastern shore of the Mbuma passage there is a Roman Catholic Mission and a sawmill. There are two wooden jetties - one in Mbuma passage (08°57.5'S, 160°45.2'E) and the other in Alabusi inlet (08°57.4'S, 160°45.5'E) a sheltered inlet leading into the southern end of Bina Harbour. Vessels up to 39.6 m in length and 2.4 m in draught can berth at Mbuma. Small repairs to boats can be carried out. (British Chart 3404 and Plan 1414.)

San Cristobal (Makira) Island

42. Temporary anchorage may be obtained in Suumoli Harbour, at the northern end of Ulawa Island. The southern part of the Harbour affords passage for boats to a jetty, at 09°43'S, 161°58'E. (British Chart 1414.)

Santa Cruz Islands (British Chart 17)

43. Vanikoro I. There is an anchorage close off the village of Peu, 11°42'S, 166°50'E. Landing can only be made at high water at a pier at Peu, and at other times on the sandy beaches near it.

44. Graciosa Bay. There is sheltered anchorage with good holding ground in Graciosa Bay (Ndende Island) at 10°47'S, 165°49'E. A T-shaped wharf was built in 1970, measuring 16 m by 4.6 m, 55 m from the shore at the reef edge; at low water it can accommodate vessels drawing up to 3.6 m.