

REPORT ON FLIGHT

MELBOURNE - PAPUA, NEW GUINEA & BRITISH SOLOMON ISLANDS.

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REPORT ON FLIGHT

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1. GENERAL.

A. Object.

The object with which this flight was undertaken was to gain a knowledge of the geography and the flying conditions of the islands in the Pacific adjacent to Australia and which, owing to the rapid development of aircraft, are fast coming within range of the mainland of the Australian continent.

This knowledge is required for Australian air defence purposes.

In addition, it was desired that British Service aircraft should, if possible, be the first to visit by air the British Possessions in the Pacific.

Ministerial approval for the flight was obtained in August, 1926.

B. Time Undertaken.

It had been stated in the Press that certain Foreign Powers were planning a flight to the Pacific visiting certain British possessions there, such flight to take place at the end of 1926.

If the object set out in the latter part of the preceding paragraph was to be achieved it was necessary to carry out a flight to the islands during 1926.

Meteorological information obtainable indicated that there were two definite seasons in the Western Pacific - one, the South-east trade wind season from March to November, the other, the North-west monsoon season from November to March, and that the former was the most suitable for flying. For meteorological reasons therefore the flight should be completed before the end of the year.

C. Equipment Used.

Before such a flight could be carried out it was necessary to make provision for the supply of fuel, etc. along the route. Petrol and oil in quantity is normally only available at places such as Port Moresby and Rabaul and the quality stocked is that normally used in motor boats and cars.

The only method of laying down supplies at other places in the islands is by sea.

Communication by sea between Australia and the main island ports and inter-island is most infrequent (see para. 7) so much so that, if the flight was to be completed before the N.W. season set in, supplies had to be put down from stocks available at the places mentioned and so the flight had to be carried out with an engine of low compression in which ordinary motor spirit could be used. The use of an engine of high compression would have necessitated a refined spirit and perhaps benzol being sent from Australia.

The selection of the equipment to be used was therefore limited - the most suitable under all the conditions was the D.H. 50.A. Seaplane fitted with a Siddeley "Puma" engine of 240 h.p.

D. General Narrative.

The D.H. 50.A. had not been erected when approval was given for the flight. Steps were taken to have it erected at No.1. Flying Training School and tested in the air (in the first place as a landplane) and extra tanks etc. were fitted in order to increase its air endurance.

The machine was worked on at night and throughout the week-ends, a seaplane undercarriage was fitted and tests carried out, but unavoidable delays prevented the originally proposed crew getting the experience in handling the machine necessary before starting out on a long flight, as had been originally intended.

D. General Narrative (contd.)

By the time full load tests could be carried out (September) the time available for carrying out the flight before the N.W. season set in was already getting short.

Up to this time all calculations as to the load that could be carried had necessarily to be based on the airworthiness certificate granted the machine by the Air Ministry.

Trials indicated that the figures for airworthiness were of little use for our purposes. These facts together with consideration of the near approach of the end of the S.E. season caused an alteration to be made in the original plan. Wireless was discarded and an experienced seaplane pilot added to the crew.

The machine was not finally ready until 23rd. Sept.

An attempt was made to get away from No.1. F.T.S. Point Cook, with a maximum load on the morning of the 24th. September, but the sea was too rough and the machine failed to get off. Another attempt was made on the morning of Saturday, 25th. Sept., with the same load and the flight commenced at 0550 hours.

Proceeding by the coast a head wind was experienced and the first landing was made at Paynesville on the Gippsland Lakes. Here it was discovered that a small external leak had developed in the water jacket. This leak was not serious and the flight proceeded, Sydney being reached the same afternoon.

Here it was found that the leak in the water jacket had developed considerably and to such an extent as to make it serious. It being quicker to change the engine than to repair the fault in the one then in the machine a change was made.

This caused a delay of four days in Sydney. Strong headwinds had been encountered on the flight between Melbourne and Sydney, the speed at times being as low as 60 m.p.h. and arrangements were made to have fuel available if required at Port Stephens.

D. General Narrative (contd.)

Leaving Sydney on the morning of the 29th. September a headwind was again experienced and a landing was made at Port Stephens for refuelling, the objective of the day being Southport.

When within six miles of Southport shortly before 5 o'clock in the evening the engine power died away and a landing had to be made in the open sea. It was found on alighting that a split pin in the pilot's throttle control had sheared or otherwise fallen out and so deprived the pilot of control of the engine, the throttle vibrating closed. This was soon remedied but being in the open ocean the sea was running high and waves averaging 10-12 feet made it impossible to fly off again.

The coast along which we had been flying at the time the forced landing took place consisted of a long stretch of open sandy beach. The only shelter available was at Tweed Heads some miles back, or Southport 6 miles on. It was decided to try and make Southport by taxiing.

Having been about 4½ hours in the air since leaving Port Stephens we had not a large supply of petrol and darkness came on about 6 o'clock. We were 1-2 miles out to sea moving parallel to the coast with high ocean rollers breaking between us and the shore. We endeavoured to make the entrance to Southport but did not arrive in the vicinity of that entrance until nearly 6 o'clock when the breakers and the spray from them together with the failing light prevented us from picking it out. The position was by no means envious. The D.H.50.A. had no wing tip floats and a wave over the wing would certainly have capsized the machine. Flight Lieutenant McIntyre by watching the waves and skilfully operating engine and controls avoided this, but it can be imagined that the machine was at some peculiar angles at times. Darkness approaching and petrol getting low it was decided to try and beach the machine through the surf.

D. General Narrative (contd.)

This was done by running in as close as possible between two breakers and then with the help of the engine running hard on to the sandy beach where the machine was held by two members of the crew whilst the other sought assistance.

McIntyre twice fell into the water during the process of getting ashore but being already thoroughly wet took little notice of it. It was nearly dark and the firing of a Verry light brought a motor boat and three men. Later, further assistance enabled us to pull the machine up on to the beach clear of the water. We found we had landed 300-400 yards south of the entrance to Southport on a spit of sand some 400 yards wide separating the inner waters from the ocean. We were informed by local fishermen that it would have been dangerous to have attempted negotiating the entrance with the sea then running. The largest breakers are on the bar at the entrance.

After discussing the general condition of the sea with local fishermen it was decided that the best way to get the machine into the sheltered waters of Southport would be by moving it across the 400 yards of sand which separated it from these waters. To do this the assistance of a number of men from Southport was sought. The local Police went to the Picture Theatre and some 50 or 60 volunteers came down to the beach. With their assistance the machine was dragged over the sand and soon after midnight was afloat inside.

The next morning it was taken to a suitable site near the Grand Hotel, beached, and examined. It was found that the only damage sustained was the removal of the protective enamel on the bottom of the duralumin floats caused by dragging the machine over the sand, and a certain amount of damage to the propeller caused when churning through the waves whilst taxiing to Southport on the previous evening.

D. General Narrative (contd.)

We expected to find the machine considerably strained by the buffetting it had received, but this was not so. All that was required was a new propeller.

No spare propeller was available immediately. One was in a half finished condition at the Experimental Section at Randwick. It was necessary for this to be completed and sent to Southport. Arrangements were made accordingly and the completion of the propeller was pushed on. It was received on Monday, 4th. October, fitted and tested.

Up to this time there had been a certain amount of press criticism regarding the flight. When the leak developed in the water jacket in Sydney it was said that this was to have been expected, as the "Puma" engine which was being used usually developed internal trouble in the water jacket. The one developed on the flight to Sydney was an external one and not an internal one.

When the machine failed to get off after the forced landing outside Southport it was assumed that the reason was due to the limited performance of the machine. This was not so for no seaplane could possibly have taken off from the sea running that day. It is not known whether this criticism had any effect, but the following telegram was received from the Secretary whilst at Southport: -

"W773 The Acting Minister is concerned as to whether the unfortunate delays encountered through minor damage to machine have not jeopardised the possibility of carrying the flight to a successful issue. He insists that unnecessary risks must on no account be taken. Presumably the flight to Thursday Island will enable you to form accurate estimate of machines capabilities and the probability of proceeding further successfully. Before authorising continuance of the flight beyond Thursday Island Minister wishes you send him from there your candid opinion on probability of proceeding further successfully and without any undue risk to personnel. Should Minister decide continuance beyond Thursday Island justifiable he requests similar report by you from Rabaul."

D. General Narrative (contd.)

Leaving Southport on Tuesday, the 4th. October, we reached Gladstone that afternoon and Bowen the following day being received at both these places by the Mayor and Councillors.

No.101. (Fleet Co-operation) Flight, R.A.A.F., is stationed at Bowen and not having seen this unit at work there previously I took the opportunity of doing so and spent the following day (Thursday) with the unit visiting by air that portion of the Great Barrier Reef where it was then operating.

We had experienced strong headwinds the whole way up the coast and had made arrangements for intermediate refuelling places should they be necessary.

On the following day, Friday, the 8th., we left Bowen and proceeded via Cairns to Cooktown where we were met by the Mayor. Leaving here on Saturday, the 9th., we arrived at Thursday Island that afternoon.

In accordance with the telegram received from the Minister referred to above I sent a wire to the Secretary in Sydney stating that I considered we could proceed with confidence. We had to await a reply to this message for authority to proceed and this arrived on Sunday evening. We left Thursday Island on Monday, the 11th., and made our first acquaintance with Papua on landing at the Government Station at Daru that day.

Daru is an island and there is no sheltered port. After refuelling the propeller was slightly damaged in trying to get off. This damage appeared to have been caused by a small piece of stick or something of the kind from the water. The propeller had to be removed taken ashore and repaired. As a result we stopped the night at Daru although we originally had not intended doing so.

D. General Narrative (contd.)

The next day proceeding via the Fly River Delta and cutting across the top of the Gulf of Papua, where we experienced our first rain storm in the tropics we arrived at Port Moresby having landed at the Government Station at Kiaruku (Yule Island) en route.

On going ashore at Port Moresby, although it was dark, we were formally welcomed at the wharf by the Administrator who was Acting Lieutenant-Governor and we stayed at Government House that night.

The next morning, the 13th., we left Port Moresby and arrived at Samarai that afternoon landing at the London Mission Station at Fyffe Bay en route. The buoy arranged for us was in the open roadstead and was exposed, and so we selected a sandy beach and beached the machine not knowing, unfortunately, that a formal reception had been arranged for us on the wharf opposite where the buoy was placed. Two of the crew stayed with the Bishop of New Guinea whilst at Samarai.

We were held up the following day owing to heavy rain. This was the first time since leaving Melbourne that we were held up by the weather.

On Friday, the 15th., we left Samarai for Morobe - the first Government Station in the Mandated Territory of New Guinea. Soon after leaving Samarai when crossing Milne Bay we were caught in a heavy tropical rainstorm, much heavier than we had previously experienced. In storms of this nature visibility is extremely limited and it is necessary to come down low to keep the water in sight. The rain was so heavy that the engine sucked water through the air intakes to such an extent that it missed and knocked badly, lost revolutions and, as a consequence, we lost height. It was essential that we got out of this rain as soon as possible; we turned back and succeeding in so doing the engine picked up again.

D. General Narrative (contd.)

We flew N.W. up Milne Bay and found that the storm was coming from the S.E. and that its front was practically a straight line at right angles to its direction and that the weather in front of it was perfectly fine. By flying over the peninsular at the North of the Bay we passed on to the N.E. coast of Papua and left the bad weather behind. We arrived at Morobe that afternoon having called at the Government Station at Baniara en route.

Morobe was our first stopping place in the Mandated Territory and here we received a wire from the Administrator at Rabaul welcoming us to the Territory and expressing hope that we would have a pleasant trip whilst in the Territory.

Morobe was the Government Station for the district in which the Edie Creek and Bulolo Goldfields are situated, but owing to the rush to these fields the District Officer was transferred from Morobe to Salamoa Bay and three Whites only (a wireless operator, medical assistant and a clerk) were left at Morobe.

We considered that we had time to get as far as Finschhafen that evening and endeavoured to get away from Morobe with that object in view.

Morobe is so situated, however, that in most winds it is necessary to take off in water which is open to the swell coming straight in from the ocean. These were the conditions on the day we arrived and, in trying to get off, the propeller was damaged by water and had to be repaired. We stayed at Morobe that night.

The next day was hot and muggy without a breath of wind, the surface of the sea was like glass and a ground swell was coming in from the ocean and we could not get off with the load necessary to make Lindenhafen in one flight which we had decided to do.

D. General Narrative (contd.)

The next day, Sunday, 17th. October, conditions were more suitable, the weather was good and flying across the Huon Gulf we flew via Fami Islands direct to Cape Bulli on the South coast of New Britain and arrived at Lindenhafen that afternoon.

Next day, Monday, the 18th., we left Lindenhafen and arrived at Rabaul. Whilst at Rabaul I was the guest of the Administrator (Brigadier General D.A. Wisdom, C.B., C.M.G.).

Here again, in accordance with the Minister's instructions we had to wire to Melbourne to get permission to proceed further.

We had had no trouble with the engine and it was not due for overhaul but it was certain that a top overhaul would be necessary before the flight was completed. A delay of a couple of days was to be expected in getting a reply from Melbourne and so it was decided to top overhaul the engine, using this delay as part of the time necessary for the purpose in the hope of saving it on the return journey.

I inferred from the Minister's previous wire that it was his opinion that if we proceeded so far that the return journey would be carried out during the ^{Monsoon} E.W. season, we were taking undue risks. I advised that I considered that we had time to do the Solomon Islands and in reply received the following wire. -

"Continuation flight to Tulagi approved Acting Minister desires impress no undue risks should be taken and feels flight should not proceed beyond Solomon Islands report from Tulagi."

The overhaul of the engine was completed on Tuesday, 26th. October, and tested with satisfactory results but on completion of the test flight the Customs launch in endeavouring to bring the machine a line when drifting ran into the tail of it and severely damaged the rudder and elevator. It took two days to repair this damage and the machine was not ready for test again until Friday, the 29th.

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I inferred from the Minister's previous wire that it was his opinion that if we proceeded so far that the return journey would be carried out during the H.W. season, we were taking undue risks. I advised that I considered that we had time to do the Solomon Islands and in reply received the following wire. -

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D. General Narrative (contd.)

Starting at daylight, however, the machine was tested with the 2-bladed propeller we had used from Southport and with a 4-blader which had been designed for the "Widgeon" and was at Rabaul and which it was desired to try out to see if it made any difference to the performance of the machine in those latitudes. This propeller, however, caused considerable vibration and it was found to be out of truth. It was not tested in the air.

We left Rabaul at 10.50 that day and proceeded across New Ireland. After leaving the East coast of New Ireland we were hampered by rainstorms but arrived at the island of Nissan. It was raining lightly when we landed and soon after set in heavily and it was necessary for us to stay there the night being put up by the Plantation Manager, the only white man on the island. The engine had run perfectly after leaving Rabaul but while looking over it at Nissan an internal leak was discovered in the water jacket of No.2. cylinder. The question then to be considered was whether we should return to Rabaul and fit a new cylinder block or go on with the object of making Tulagi before carrying out any repairs or replacements - there were no spares at Tulagi. At Nissan we were out of touch with the outside world. The only communication there is by sea with Rabaul at very infrequent intervals and nothing was due there for three weeks. It was necessary that we attempt to reach a wireless station. If we returned to Rabaul to change the cylinder block further time would be lost and it seemed probable that our permission to do the Solomons might be cancelled.

We decided to go on. We found that if this cylinder was freed of water through the plug hole the engine warmed up, and a clean plug inserted in the faulty cylinder just before getting off the engine ran well. This we did and left Nissan the next day, Saturday, 30th. October, and arrived at Kieta that day.

D. General Narrative (contd.)

Staying at Kieta overnight we left the following day for Gizo via Shortland Islands but as the weather ahead over stretches of open sea was bad, it was decided to land at Shortland. It rained during the afternoon and set in steadily during the night and for the next two days we were held up there by the rain.

Shortland Island is the most Westerly Government Station in the British Solomon Islands Protectorate. There is no communication with the outside world from there except by boat every six weeks. The nearest wireless stations are at Kieta on the North and Tulagi on the East.

Whilst examining the machine at Shortland we found that the engine sump had cracked, but this was not serious.

It appears possible that the vibration set up when trying the untrue propeller at Rabaul may have contributed to these troubles.

The weather being favourable on Wednesday, 3rd. November, we left Shortland and arrived at Gizo two hours later. After refuelling and getting something to eat we attempted to get away with the idea of going as far as the Mission Station in the Maravo Lagoon that day.

The engine missed and vibrated badly when we attempted to take off. This was naturally thought to be due to the water in No.5. cylinder. The plug was changed and another attempt made but without getting rid of the trouble. It was decided to beach the machine and find out what the trouble was. This was done and we found that No.6. cylinder had now also developed an internal leak in the water jacket.

It was now too late to get away that day and we stayed at Gizo over night.

D. General Narrative (contd.)

The next morning, by adopting our previous practice with the two faulty cylinders we got away and arrived at Maravo Lagoon.

Since developing the trouble with the engine we had been travelling as light as we possibly could in order not to run the engine full out longer than was necessary on taking off and for this reason were making short flights.

We expected to get petrol at the Mission Station at Maravo Lagoon.

We landed at the Seventh Day Adventist Mission Station at Batrina. There was neither buoy nor suitable beach here and it took us a little while to tie up. The small quantity of petrol we required was some distance away and took some time to get. As a result we did not get away that afternoon and stayed there the night. We left the next morning and although we encountered a few odd storms these were fairly local and we reached Tulagi without trouble and beached the machine at Messrs. Burns Philp's island, i.e. Makambo.

The next question was how best to remedy the engine defects. We had a spare cylinder block at Rabaul and a new engine was available in Sydney. If we desired to have the new block from Rabaul it would be necessary to wait for it to be brought by boat from there and to be fitted after arrival. If we did this it would have been possible to say that only one engine had been used throughout the flight. There was, however, no real reason why this should be done it being quite a normal practice in aircraft operations to change engines in cases where such a change facilitates operations. If we obtained an engine from Sydney the old one could be removed and everything got ready for the installation of the new one on its arrival.

D. General Narrative (contd.)

There would be no delay after the arrival of the new engine other than fitting it to the machine. Apart from this, however, although the next boat from Sydney did not reach Tulagi for nearly three weeks it was due there some two weeks or more before the first boat from Rabaul. Obviously, the thing to do was to get a new engine from Sydney. This was wired for.

We were rather anxious at this time to know what our future movements might be as in view of the two previous wires from the Minister we thought it possible that, seeing that we were faced with a further delay of almost three weeks, we may have been ordered to return by boat.

However, no such instructions were received. The machine was thoroughly examined, any necessary work done, and the old engine removed while we were waiting for the arrival of the new one. The engine sent us from Sydney was the one with which we had flown from Point Cook to Sydney and which had been taken out there for the purpose of repairing the water jacket. This engine arrived at Tulagi by the s.s. "MATARAM" on the morning of Sunday, 21st. November. The ship's officers had the engine out and down alongside the machine before breakfast and work was immediately commenced on fitting it.

The machine was ready for test on Tuesday afternoon and although the sea was very rough these tests were carried out and were satisfactory. Captain R.R. Kane, M.C. Resident Commissioner for the British Solomon Islands Protectorate was taken up during the test flight.

The weather had not been favourable during the previous few days, a certain amount of N.W. weather had been experienced during our stay, and it rained heavily during the night of Tuesday, 23rd. November.

D. General Narrative (contd.)

Arrangements were made, however, to make a start on the return journey at daylight on the morning of the 24th. if possible. On that morning the wind was from the S.E. and the presence of rainstorms made it impossible for us to get away at daylight. Soon after 6 o'clock, however, it cleared a little to the N.W. which was the direction in which we wished to go. There were still heavy rainstorms in the S.E. and E. but as our experience had shewn that rainstorms in this part of the world were often confined to the land, it was decided to get into the air and see if progress could be made.

We left Tulagi at 6.20 and with the wind behind us set off in the direction of Russell Islands. We found that the weather in the direction we wished to go over the sea was fairly clear although there were rainstorms over all the islands to the E. and S.E.

With the wind behind us we made good progress and landed at Gizo after two hours' flying. During this flight we encountered storms in the vicinity of most islands and had to keep to sea to avoid them.

Refuelling at Gizo we made direct for Kieta which, with a favourable wind, was reached in less than two hours.

Soon after leaving Gizo we were away from the rainstorm area and weather and visibility were good.

Refuelling at Kieta we proceeded to Soraken, a Burns Philp plantation on the Northern end of Bougainville, where we were held up by rainstorms. After spending two hours there the weather cleared and we got away and made for Rabaul arriving there just before dark. We had that day covered 772 miles and had spent $7\frac{3}{4}$ hours in the air.

D. General Narrative (contd.)

The next day, Thursday 25th., we made an early start from Rabaul but after half an hour's flying we were prevented from going further by impenetrable storms in the vicinity of Wide Bay and were forced to return to Rabaul. Another start was made at 1-30.

We passed through a local storm area on the Southern shores of Blanche Bay and then out into perfectly clear weather along the coast. We landed at Palmalal, a plantation in Jacquinot Bay managed by an Australian who has little communication with the outside world and who enquired as to the winner of the Melbourne Cup and also the result of the last Test match.

When within about 50 miles of Lindenhafen that evening we were again hampered by heavy local rainstorms, but by proceeding to sea and getting round and between these storms we reached Lindenhafen soon after 5 o'clock.

The weather had not cleared sufficiently on the following day, the 26th., to allow us to make a start until after midday when we got away and although again hampered by storms reached a plantation at Arawe amongst the islands on the South West corner of New Britain where we landed and were forced to stay the night owing to the setting in of continuous heavy rain.

At 9 o'clock the next morning, the 27th., the weather cleared sufficiently for us to make a start across to the mainland of New Guinea and we made for Finschafen. Here the weather was perfectly good and we proceeded down the coast to Buna Bay via Salamoia Bay the port from which operations are carried out in the Edie Creek Goldfields which are at present attracting large numbers of prospectors.

Staying at Buna Bay the night we got away next day, 28th., to Samarai, via Baniara and again finding ourselves in the centre of a storm area between Baniara and Samarai and experiencing very heavy rain after alighting at the latter place.

/17.

D. General Narrative (contd.)

Leaving Samarai the next morning, the 29th., and with a favourable wind we made good time to Port Moresby via Abau although the latter part of the flight was again interfered with by local rainstorms. We had hoped to get beyond Port Moresby that day but soon after arriving there and before we had refuelled, rain set in steadily and we were compelled to stay the night.

We left Port Moresby the next day, the 30th., but could not get beyond Kerema owing to bad weather. The weather was not very promising the following day, the 1st. December, but we made a start for Daru. We were hampered by local storms which grew worse as we proceeded across the top of the Gulf of Papua. After about one and a half hour's flying we met a storm of such magnitude that it was quite impossible to get round it and much too heavy to penetrate - visibility was practically nil. We went back and alighted in the Gama River which we had just previously passed. The Gama is a wide stream with plenty of room to land across it; it was running very fast.

We could not tie up on the sheltered side of the river as the mangroves grew down to the water and we drifted a short time. We then observed two natives near a hut on the opposite bank waving palm leaves. We proceeded in their direction and endeavoured to communicate with them but they appeared not to understand pidgin English and when we attempted to approach the bank they disappeared into the bush. We succeeded in tying the machine to the bank of the river here and waited. We expected that the natives would overcome their trepidation and return, but they did not do so. Shortly afterwards we observed a canoe containing 3 men coming round the bend of the river about a mile away. It then commenced to rain heavily and for 20 minutes visibility was limited to a few hundred yards.

D. General Narrative (contd.)

When the storm cleared the canoe and its crew had come nearer but had not apparently until this observed us. We beckoned them to approach but it was some time before we succeeded in getting them to come near. There was obvious discussion whether they should do so or not and they did not do so before putting off 3 of the crew. We eventually succeeded in persuading them to come ashore where we were but found that they could not understand Pidgin English. We wanted to confirm our whereabouts as owing to the limited visibility during the time we were in the air we were not quite sure that we were in the Gama River. We tried to make friends with them by giving them cigarettes but they did not know what these were until shewn what to do with them. They were cold and wet owing to the rain and we did not know what their attitude was towards us but they invited us by signs to come into the hut out of the wet. Shortly after this the weather cleared and we got away and made for Daru where we arrived about 3 o'clock in the afternoon.

We found at Daru that the Gama River is in the district controlled by the Resident Magistrate at Daru. The Resident Magistrate himself was interested in the attitude of the natives towards us as no white man had visited that particular area for 2½ years, the last time being when an Assistant Resident Magistrate visited it for the purpose of appointing village constables. Two were appointed but on arrival at their respective villages were disposed of by the local inhabitants.

While we were getting ready to get away from the Gama River other canoes appeared on the river coming in our direction. These natives and those with whom we had attempted to converse could not have known how we arrived in the River and it would be interesting to learn what their thoughts were when, after moving along on the water, we ascended into the air and flew away.

D. General Narrative (contd.)

Leaving Daru the next morning, the 2nd., we left the area of tropical storms and found good weather at Thursday Island. Arriving here just before midday we decided to try and make Cooktown that day and after refuelling proceeded via Flinders Group and arrived at Cooktown just as darkness set in.

Making an early start the next morning, the 3rd., we proceeded South via Cardwell, Bowen and MacKay with the object of reaching Gladstone that night. Darkness, however, prevented us achieving this and we landed at Port Alma and stayed there the night. We had covered 710 miles that day and spent 9½ hours in the air.

Southport was reached the following afternoon, the 4th., via Gladstone and the mouth of the Mary River.

The previous day's run being a comparatively short one we made an early start from Southport on Sunday, the 5th., and with a favourable wind made good time to Port Stephens where we refuelled. Here, the wind and weather still being favourable, we decided to pass Sydney and made for Eden in Twofold Bay where we arrived at 4-30 having covered 690 miles that day.

Bad weather kept up at Eden during the following day, the 6th.; and this was the first and only day since leaving the Solomon Islands that we could not make any progress.

Leaving Eden on the morning of Tuesday, the 7th., we proceeded via Paynesville and arrived at Point Cook at 3-12 that afternoon.

The total distance covered throughout the flight was 10,000 miles and 23 places were visited in Papua, Mandated Territory of New Guinea, and British Solomon Islands Protectorate. Of these 20 have never previously been visited by aircraft; the remainder had been visited by aircraft which arrived by ship principally one carried by a U.S. battleship which visited the islands on its return trip to the United States after visiting

D. General Narrative (contd.)

Quite a few whites in the islands had never seen an aeroplane or seaplane before.

With the exception of two there was a White man (or Whites) at every place visited and we invariably found that wherever we went everyone was anxious and willing to help. This applied too as a rule to the natives. The natives varied considerably in their attitude to the machine. They seem to have reached the state where they are not surprised at anything a white man might do. The fact that the machine was of such a weight and yet flew seemed to puzzle them most and they could not understand how it was possible to travel from place to place so quickly.

From conversation with local white inhabitants and statements by Government Officials, it appears undoubted that the flight made considerable impression upon the natives and that it could not do other than improve the status of the white man in their eyes.

On return to Melbourne the following cable was received from the Prime Minister then in London : -

"Congratulations on splendid achievement in your flight of nine thousand miles stop You have demonstrated the wonderful possibilities of aviation not only in linking Australia more closely with outlying portions of empire in Pacific but also in defence Australia and adjoining possessions."

Appendix "A" gives a plan showing the path of the flight as well as the daily runs and total mileage.

Appendix "B" gives details of the flying times.

" "C" " " " " Wireless Stations on the Islands.

" "D" " " " " Places visited.

" "E" " Charts showing information collected etc.

NOTE. - In the details which follow no attempt is made to give information which is available in the Pacific Islands Pilot, Vol. I.

2. METEOROLOGICAL.

The coastline of Australia does not call for special reference.

Those places visited outside Australia were all within the latitudes of $10^{\circ} 30'$ and $3^{\circ} 30'$ South and so tropical weather conditions were to be expected.

There are two definite seasons in this part of the world - the South East season, from March to November, (when the S.E. trade winds are blowing) and the North West season, from November to March, (when the prevailing wind is from the N.W.).

The N.W. season (which is the summer) is looked upon as the wet season although there are places on the S. and S.E. coasts such as Lindenhafen (New Britain) and Finschhafen (New Guinea) where the highest rainfall is registered during the S.E. season. Speaking generally, on the coast, the rainy season is that when the wind is from the sea.

The time of change of season varies a little from year to year, e.g., we had principally S.E. winds during our return flight in late November and early December.

The S.E. is generally considered as the dry season (that is of course speaking comparatively) and the period of best and most reliable weather for sea and air travel.

During this season winds from the S.E. are regular and fairly steady, reaching their greatest velocities in June, July, and August.

Meteorological records indicate that the S.E. winds in most of the islands rise fairly regularly at 0900 hours and drop in the evening, but our experience on the spot showed that this varies - in places it rose at 0700 hours, others at about 1100 hours.

At times the S.E. wind continues throughout the night but when the day breeze dies down on the coast of the bigger islands a land breeze usually comes up during the night and blows until after sunrise. This is often sufficiently strong to cause an appreciable ripple on the water.

During the N.W. season the wind is not so regular nor is its average velocity so high - it is a period of sudden squalls and heavy rains. The worst weather is experienced generally in late December, January, and February.

Our flight was mostly carried out in what might be called the between season period (October and November) when calms are often experienced, and although S.E. winds predominated we experienced rainstorms on 14 out of 31 flying days.

These storms were mostly fairly local and could be flown round, but this is not always so, for on two occasions our progress was prevented by continuous heavy rain.

Storms although local are often very heavy indeed and in such cases flying so far as visibility is concerned is very similar to that in fog.

Our first experience of this in the air was just after leaving Samarai when we attempted to pass through a heavy rain-storm. It was so dense that we were compelled to lose height in order to retain sight of the sea below and in our particular case the rain was so heavy that the engine drew water through the air intake, lost revolutions, and knocked badly. This trouble, however, could probably be overcome by having air intakes suitably arranged to meet these conditions.

Clouds and storms gather very quickly in this part of the world and one might start off on a flight in good weather and watch local storms form and disperse all round whilst in the air.

Out of 21 flying days away from the Australian coast we experienced rainstorms of some sort on 13, but only on five were they so bad as to prevent progress.

Between seasons, e.g., November, calms are often experienced and when a breeze does blow it is often very light. During the calms there is not a breath of breeze and the sea is like glass.

The temperature is not really high, averaging during our visit about 82° to 85° Fahrenheit, but the wet bulb thermometer readings are high and so the presence of a breeze gives the impression of comparative coolness. The heat is most trying during calms.

All the large islands rise to considerable heights above sea level and the effect of the high land in producing cloud and rain was particularly noticeable - on numerous occasions while clear weather existed at sea and along the coast clouds formed immediately the moisture laden air came into contact with the high land and rain followed. The hilltops were more often than not in cloud.

Our experience indicated that storms are usually of no great height, in fact are quite low.

On the return flight coming along the top of the Gulf of Papua we encountered scattered clouds and climbed to 3500 feet where we were above them and in a perfectly clear sky as far as we could see. As we proceeded the clouds below us grew larger until there was a continuous bank. We then came below it to get a view of the coast and found ourselves in a series of local rainstorms which lasted throughout the flight.

Apart from rain the air is usually particularly clear and visibility good - even between storms this is so.

No fogs were experienced and there was less haze in the islands than on the Australian coast - this, it is understood is normal.

Visibility up to 75 miles was experienced on more than one occasion during the flight.

3. GEOGRAPHICAL.

Speaking generally the East coast of Australia cannot be said to be particularly suitable for the operation of land-planes, although the preparation of landing places at intervals is perfectly feasible - there are no areas of natural landing grounds such as are found on the Western side of the coastal ranges. Nor would the East coast of Australia be said to be ideal for the operation of seaplanes, there being long stretches of coast open to the ocean and without any areas of sheltered water. Here again, however, reasonably sheltered water suitable for emergency alighting places can be found at suitable intervals. The best part of the coast for seaplane operations is probably between Sydney and Cooktown.

Habitation is found as far North as Cooktown, after which there is a stretch of 400 miles of coast to Thursday Island almost without habitation and with little in the way of sheltered water suitable for seaplanes other than in an emergency.

The Flinders Group of Islands in Princess Charlotte Bay provides a good seaplane operating base, so far as sheltered water is concerned, and the islands round Cape Grenville provide sheltered water and possible alighting places in certain winds - apart from these the coast North of Cooktown is fairly open to the ocean for although the Great Barrier reef runs along this coast it

is so far out as not to prevent a sea running on the coast when the wind is from the ocean.

There are long stretches of sandy beach on the Australian coast where seaplanes could be beached.

The Coastal area of Papua, the Mandated Territory of New Guinea, and B.S.I.P. observed throughout the flight must with few exceptions be said to be most unsuitable for landplane operations.

With the exception of that round the gulf of Papua and small stretches on the Southern portion of the East coast of Papua and in places on the East coast of New Ireland, the coastal areas visited are rugged and places suitable for aerodromes are not easy to find.

Only in the areas mentioned are natural landing places to be found and these extremely rarely (see Chart Appendix "D"); in all other places there is a heavy tropical growth of trees; (in fact, in most places it would be termed forest) right down to the sea.

These areas are, however, suitable for the operation of seaplanes, sheltered water being available at frequent intervals - the most exposed coasts reconnoitred were those of Eastern Papua and the Eastern portion of the South Coast of New Britain.

Although most coasts visited are fairly open to the ocean, coral reefs are found frequently at short distance off shore, and thus provide shelter for the water inside.

In operating seaplanes or marine craft coral has always to be watched for, but it is usually easily observed from the air and there is little difficulty in avoiding it - a careful watch should be kept whilst taxiing on the water.

Throughout the flight the seaplane alighted at 39 different places - details of these are given in Appendix "D".

With the exception of a long stretch of flat country round the top of the Gulf of Papua the islands are very rugged and hilly, the land in many cases reaching great heights, e.g. to cross by air from the Gulf of Papua North to the sea would require a height of from 10 to 13 thousand feet to be attained, from Port Moresby to Buna Bay 11 to 13 thousand feet. To get direct from Salamon Bay to the new gold fields at Edie Creek, a distance of some 20 - 30 miles, a height of 10,000 feet has to be negotiated. A flight from Lindenhafen on the South coast of New Britain to Talasea in the North would necessitate climbing over very high hills which have not yet been surveyed. The land in the North of New Ireland reaches a height of 4,000 feet and in the South about 6,500 feet, while that of Bougainville reaches a height of 10,000 feet at Mt. Baloi.

The islands of the B.S.I.P. are smaller and do not reach such heights as the islands previously mentioned. They are, however, rugged and precipitous in places and reach heights varying from 500 to 600 feet on all principal islands.

With the exception of stretches in Papua the land rises fairly quickly from the sea and the coast is often steep and rugged, particularly is this so on the South coast of New Britain.

In most cases the land is (except where it has been cleared and planted with cocoanuts) covered with bush right down to the shore.

The wildest, most rugged and least developed of the islands visited is probably New Britain, the Southern coast of which, backed by massive ranges, is steep and heavily wooded down to the waters edge. This coast is exposed and comparatively unbroken in its Eastern portion except for two big bays, Jacquinot and Wide Bay, but in the West has numerous bays, islands, and inlets.

A number of streams run into the sea along this coast, none of them of any great volume of water and mostly with a sand bar at their mouth, reaching the sea after a tortuous path through most beautiful steep, deep and wooded ravines.

Apart from those on the mainland of New Guinea there appear to be no big rivers nor inland waters from which seaplanes could be operated.

The fresh water pouring down from the rivers of the mainland of New Guinea can in many cases be observed from the air some miles out to sea.

The biggest of these rivers are the Fly emptying into the Gulf of Papua and the Sepic which flows into the sea on the N.E. coast. Both these rivers are navigable for hundreds of miles and have their source in the same watershed - to follow their course by air and pass from one to the other would mean negotiating heights of 12 to 13 thousand feet.

4. EQUIPMENT.

(a) Engine.

The engine used was a standard 240 h.p. Siddeley Puma from the stock presented to the R.A.A.F. by the Imperial Government after the war.

A characteristic of this engine as originally designed was that it often developed a leak from the water jacket into the cylinder.

The engine is only now used after a modification designed to overcome this difficulty has been carried out. Not only is this so in the R.A.A.F. but also in machines employed by Civil companies throughout Australia.

This engine appeared to run even better on test in the air after top-overhaul. After test a 4-bladed propeller (two 2-bladers) designed for the "Widgeon" and sent to Rabaul was fitted to the D.H.50 for the purpose of seeing what the effect of the use of this propeller might have on the performance of the machine.

This propeller being of lower pitch should allow of higher revolutions and greater acceleration on the water and so shorten the run necessary to take off.

While running on the water before taking off the vibration was so bad that the propeller was removed and found to be considerably out of truth. This vibration may have had something to do with the water jacket leak which developed on the next flight. The leak referred to was an internal one and operated only while the engine was hot. While running the pressure was sufficient to prevent the water leaking into the cylinder seriously and so by removing the water through the plug holes of the defective cylinder warming the engine up and then replacing plugs with clean ones immediately before getting off it was possible to fly without experiencing any trouble in the air.

The flight from Nissen to Tulagi was carried out in this way, at first one cylinder leaking and later two.

It was unfortunate that of the 31 Puma engines in the R.A.A.F. the one chosen for the flight had a cylinder block in which the modification embodied to overcome this particular water jacket leak proved after a period not to be effective. The engine sent from Sydney and fitted at Tulagi was the one with which we set off from Melbourne, a new cylinder block having been fitted at Sydney; this machine completed the journey back to Melbourne without giving any trouble whatever.

These engines were necessarily run at full throttle when getting off the water for longer periods than would be necessary with the land planes operating in Australia, but once in the air they were run at what would be termed normal speeds in land planes.

The machine was not at any time loaded to anywhere near the load it will carry in the air nor to the extent allowed by the Airworthiness Certificate issued by the Air Ministry.

(b) Machine.

The machine used was a D.H.50a. fitted with a metal float undercarriage.

It is of normal wood construction, the fuselage being 3-ply and fabric covered.

From the time the machine left Melbourne until its return, a period of just over 10 weeks, it was never under cover, being either afloat at a buoy or beached, and was for 7 weeks exposed to the humid atmosphere, heat and rain of the tropics.

When exposed to the sun it was often not possible to hold ones hand on the fabric, owing to the heat. On numerous occasions too it was subjected to very heavy tropical rain and at times when beached tail first and so standing tail high as compared with normal flying attitude water lodged in the wings and fuselage.

Taken all round the machine stood up to condition extremely well.

(i) Undercarriage and Floats.

First experience with the machine at Point Cook appeared to indicate that the undercarriage was weak. On two occasions the front cross bracing wire broke, followed on one occasion by a rear strut bending.

During the stay in Sydney a new fitting allowing for the use of a double front cross bracing wire was fitted and no further trouble was experienced.

The floats were of duralumin covered with white enamel.

The machine was beached on 30 occasions being pulled on to the beach sometimes on planks, sometimes on sacks, but most often without and on one occasion was dragged 400 yards across sand on its floats.

The bottoms of the floats were painted three times throughout the flight. No trouble whatever was experienced with the floats and although the machine was moored out for as much as 36 hours at a stretch not more than a pint of water was ever removed from a compartment and this only from one.

The pump was used on the floats only once during the return journey; on this occasion the amount of water found was negligible.

(ii) Metal.

No special metal was used in the machine.

The only matter requiring attention so far as the metal was concerned was that necessary in order to combat rust.

The metal parts including flying wires, fittings, etc. were covered with enamel or paint and this was renewed three times during the flight.

(iii) Wood.

No difficulty was experienced with wood with the exception that after the machine had been standing some little time at Tulagi in the Solomon Islands it was found that a certain amount of rain water had found its way down through the fuselage and was lodging on the bottom, being kept there by the bottom cross members of the fuselage and other smaller members fitted

This water had soaked through a number of glued joints and it was found necessary to repair them. In one or two cases also the 3-ply warped a little as a result of its exposure to the moisture and heat.

(iv) Fabric.

The doping scheme used was the normal one with aluminium finish. Before leaving the machine was given a coat of varnish.

The exposure to which the machine was subjected was a very severe test of fabric and dope.

The machine was operating in a damp atmosphere and it was alternately exposed to heavy tropical rains and blazing hot sun.

At no time did the fabric lose its tautness and on examination on completion of the flight showed to be in perfectly good condition.

The dope stood up to the conditions well.

In one or two places on the fuselage the varnish was destroyed by damp and the only place where fabric and dope had to be replaced was on the under surface of the fuselage which, as referred to above, had become water soaked.

5. WIRELESS.

It had originally been intended to carry wireless but this was eventually discarded owing to its weight (120 pounds).

It would appear from information gained that the possible use of wireless in the Islands would have been rather limited.

With the exception of Rabaul which operates both spark and valve transmitters all stations are equipped with spark transmitter and valve receiver, but considerable difficulty is experienced between land stations and at times these stations have to close down owing to atmospheric disturbances interfering with the transmission of messages.

The range of aircraft instruments is still quite limited and with conditions operating in that part of the world it is probable that the range would have been further limited, and it would appear that messages between a machine in the air and a ground station would be limited to less than 100 miles.

At present the normal wave length used throughout the islands is 600 metres.

Appendix "C" shows the system of wireless communication between Australia, Papua, New Guinea and the Solomons.

6. PHOTOGRAPHIC.

Both still and moving pictures were taken from the air and from the ground during the flight.

It would appear that considerable experience in photography in tropical climates is necessary before the best results can be obtained.

The light is deceptive and there is a definite tendency to over expose. This matter has been discussed with three professional photographers, two of whom have had experience in the tropics, one of whom was at Rabaul when we were there, and they all agree that even experienced photographers find it difficult to get good results in the tropics until they have had a certain amount of experience there.

There are no professional photographers in the Islands, but it would appear from information gained that to get good results fresh material has to be used and plates and films developed immediately after exposure.

Experience indicates that films and plates deteriorate quickly after exposure. This appears to apply more particularly to film than to plates, although films bound in paper such as Kodak daylight loading films deteriorate quicker after exposure than film not so bound, e.g., that for cinema cameras.

A certain amount of difficulty was experienced with cameras. In one case the climate caused the wood to shrink and this resulted in fogging; in the other case the cinema camera operated by clock work mechanism failed to function correctly and enquiry elicited the fact that considerable difficulty is experienced with mechanism of this sort, particularly in the Solomon Islands.

Clocks give a good deal of trouble there and I was informed on two or three occasions that people owning valuable clocks and watches kept them in store in Sydney.

7. COMMUNICATIONS.

Communications generally in the Pacific Islands must be said to be poor.

(i) Roads.

With few exceptions there are no roads and consequently no road transport. These exceptions apply to a limited distance round Port Moresby, round Rabaul and along the East coast of New Ireland.

A very small number of motor vehicles, are to be found in Port Moresby.

At Rabaul some hundreds of motor cars and a few motor trucks are to be found. Their operations are limited to roads which run along the coast of Blanche Bay and for about 20 to 30 miles along the North coast of the island.

Apart from this transport inland is on foot with native carriers.

(ii) Wireless. (See para. 5.)

(iii) Sea.

Regular communication between Papua, New Guinea, British Solomon Islands and Australia is confined to a Steam Ship Service run by Burns Philp and Coy., Ltd.

This Company provides the following service -

To Papua every 3 - 4 weeks.

To the mandated Territories every 6 weeks.

To the British Solomon Islands every 6 weeks.

The service to the mandated Territories calls at Samarai in Papua. Otherwise there is normally no communication between Papua, New Guinea, and the British Solomon Islands by means of these vessels, and so to get from Port Moresby to the Solomons for instance, the normal procedure would be to do so via Sydney.

In addition to the steamers from Australia there are local services, e.g., a steamer of some few hundred tons runs monthly along the coast of Papua between Daru, Port Moresby, and Samarai. Another runs monthly from Samarai along the East coast of Papua. Another small vessel of the Expropriation Board visits the plantations owned by the Board periodically for the purposes of inspection and supply, but this will probably cease to function when the Expropriation Board itself ceases to function in about May next.

In the British Solomon Islands Burns Philp have an inter-island steamer which plies infrequently within the group. These are all slow vessels, but apart from these communication is by motor launch which is the most common inter-island communication. The average speed of these boats is from 3 to 5 knots.

Failing a motor launch communication is by whale boat or native canoe.

As a result it takes a good long time to get anything done and the laying down of supplies for air operation for example would need either to be taken in hand long before such supplies were required or a special vessel chartered for the purpose.

8. USES TO WHICH AIRCRAFT MIGHT BE PUT IN PAPUA, NEW GUINEA, AND BRITISH SOLOMON ISLANDS.

(a) Inter-communications.

Papua, the Mandated Territory, and the B.S.I.P. are each administered by a Central Administration at Port Moresby, Rabaul, and Tulagi respectively, and a number of out stations in charge of a district officer or resident magistrate.

These district officers and/or resident magistrates have certain powers in relation to punishment, labour, indenture, etc.

It is the practice for the Administrator or resident commissioner as the case may be and/or Lieut.-Governor, Chief Judge, Inspector of Labour, or other official to pay periodical visits to stations in order to keep in touch with the administration and to dispose of the cases beyond the power of the local resident magistrate. This takes a good deal of time, and I am told that in some cases prisoners are 9 months or more awaiting trial.

The use of aircraft for official visits of this sort would save considerable time, would allow of more frequent visits, and would certainly be less expensive than the steamers now used by principal officials. When comparing costs, of course, it must be taken into account that the steamers are already in existence.

(b) Transport.

Apart from the transport of officials as above it is probable that the use of aircraft would sometimes be the means of saving life by transporting medical officers or those in need of medical attention.

There are numbers of white men and women in this part of the world who are some distance from any medical aid and who under present conditions have little hope of receiving such aid should it be required urgently. The use of seaplanes might be of value in this way.

(c) Survey.

The coast line of the mainland of New Guinea, New Britain, New Ireland, and Bougainville is fairly well charted, although there are small stretches where the chart does not profess to be correct.

The coastline of the Solomon Islands is not quite so complete and there are long stretches yet to be surveyed.

Before the war a survey ship of the Royal Navy was operating in this area, but nothing has been done since.

There are large stretches of country inland in all these possessions of which little is as yet known and there is no doubt that by means of air photography information could be obtained which is not now obtainable by other means nor is it likely to be so for some years to come.

This general information of the land and coast would be more economically obtained by air photography than by any other means.

(d) Defence.

Aircraft is now developing to such an extent that Papua, New Guinea, and the Solomon Islands are fast being brought within aircraft range of important points on the Australian coast, and so must be considered as possible places in the future for advanced bases for aircraft (both for the enemy and for ourselves) should Australia be at war with a Pacific power.

Consequently, it is considered that for air defence purposes Australia should be interesting herself in obtaining all the information possible in regard to facilities for operating aircraft in Papua, New Guinea, and the Solomon Islands.

9. FLYING CLOTHING.

The ordinary flying clothing is not suitable for these parts of the world. The fur-lined Sidcote Suit is too hot unless flying at extreme altitudes and our present Summer suit is not waterproof.

What is required is a light waterproof suit.

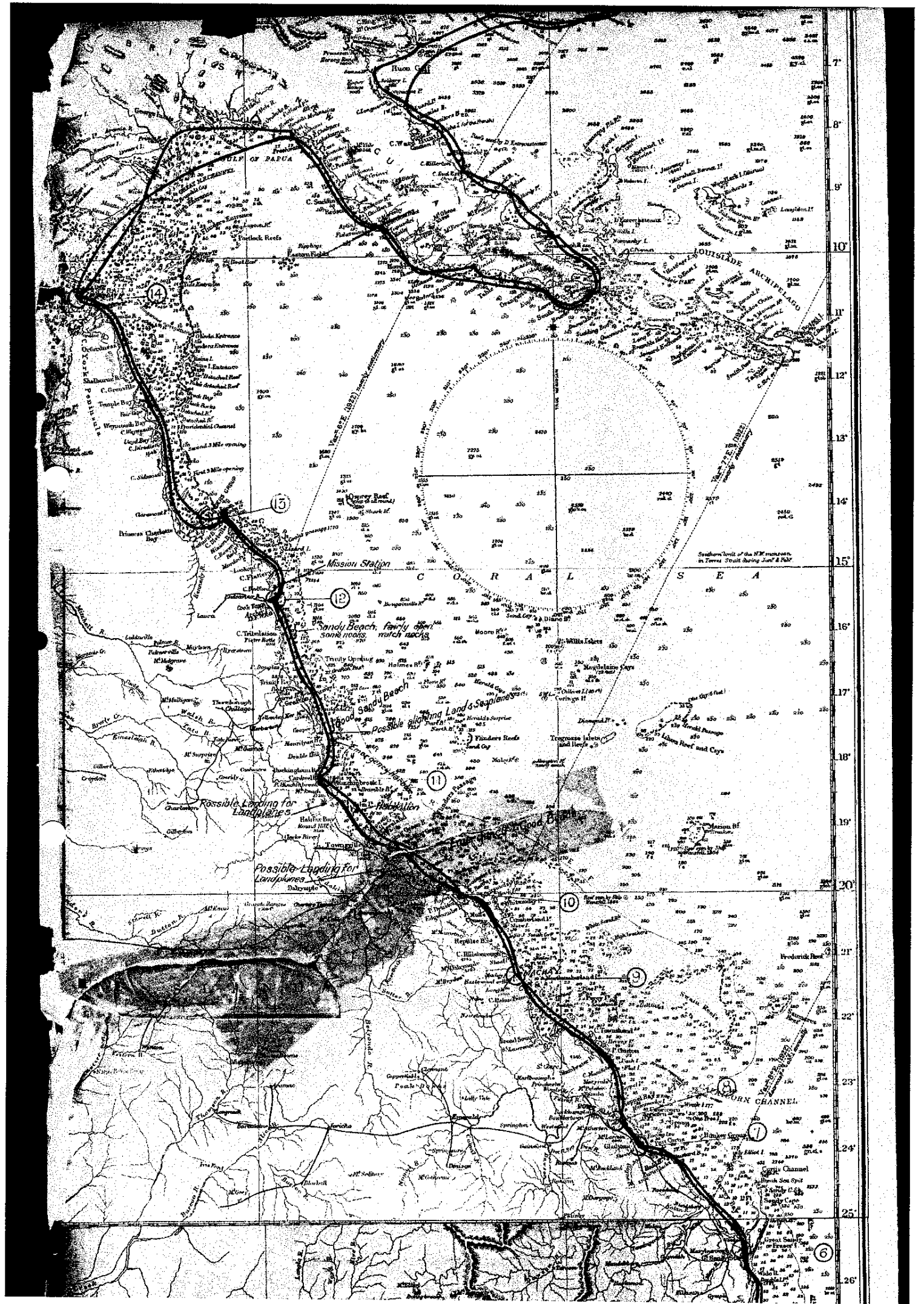
The ordinary flying cap is not in my opinion suitable. Here a cap or hat light not too hot and with some provision for shading the back of the neck from the sun's rays is called for.

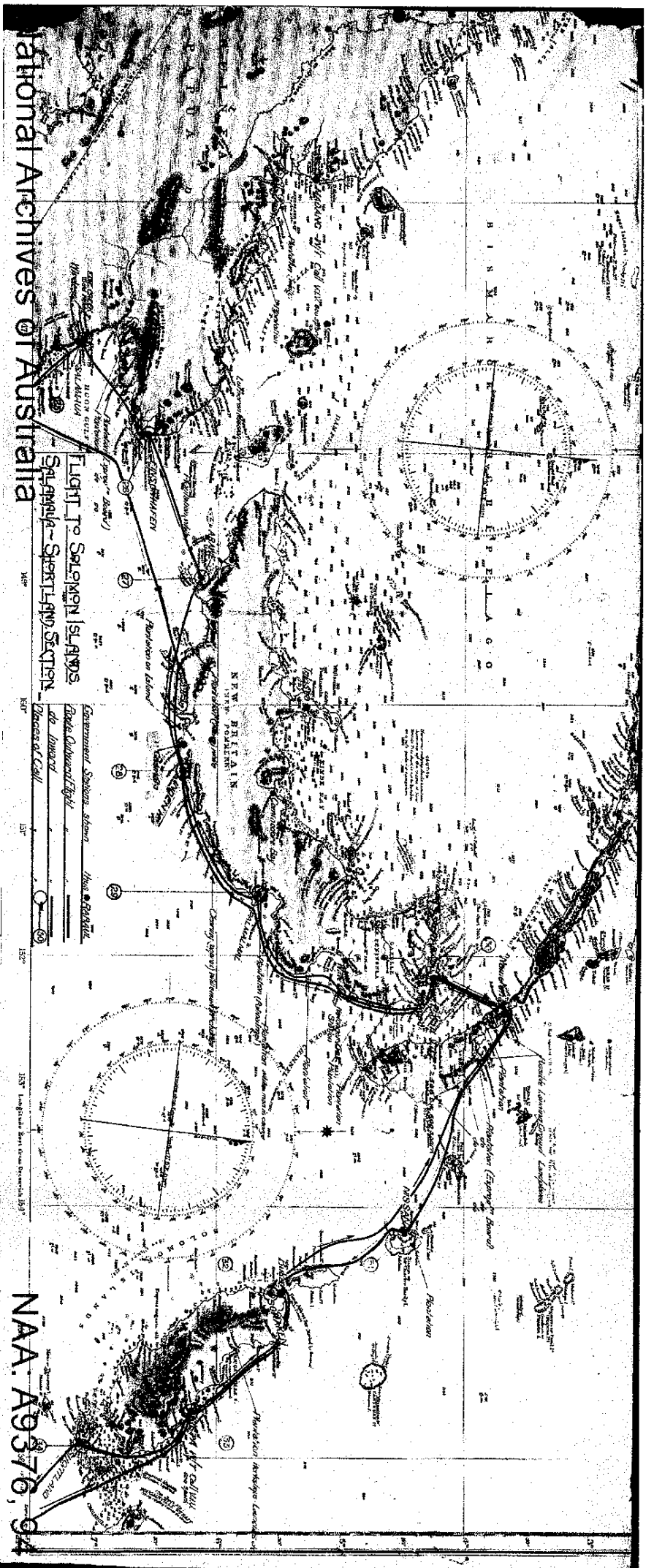
These matters are being gone into.

10. HEALTH.

The preservation of good health in tropical climates needs a good deal of attention for the reason that fever is prevalent and variety in food is difficult and the climate is not conducive, nor do any facilities exist for taking proper exercise.

We were advised by medical men in the Islands to take five grains of Quinine per day as a preventative against Malaria Fever and were advised to have the chill taken off the water before having a cold bath or shower.





SOLOMON ISLANDS

SOUTH PACIFIC



A detailed map of the Solomon Islands, showing the main islands of Guadalcanal, Malaita, and the smaller islands of the Santa Cruz group. The map includes a grid of latitude and longitude lines, a scale bar, and a compass rose. The title 'SOLOMON ISLANDS' is prominently displayed at the top, with 'SOUTH PACIFIC' written below it. A small logo is located to the right of the title. The map is oriented with North at the top. The main islands are labeled with their names in English and local languages. The map also shows the surrounding waters and the location of the islands relative to the equator and the Pacific Ocean. The map is a detailed and accurate representation of the Solomon Islands, providing a clear view of the country's geography and location.

Published by the U.S. Navy Hydrographic Office, Washington, D.C. 20374. The map is based on the latest available data and is subject to change without notice. The map is a valuable resource for anyone interested in the geography of the Solomon Islands.

Scale: 1:100,000. The map is printed on a standard sheet of paper and is suitable for use as a reference map. The map is a high-quality reproduction of the original and is a valuable addition to any collection of maps of the Pacific region.

FLIGHT TO SOLOMON ISLANDS

SEAKEN-TILPOI SECTON

