

#### REPORT OF SURVEY

BY: AUSTRALIAN HYDROGRAPHIC SERVICES PTY. LTD.

FOR: McARTHUR DEVELOPMENT COMPANY

January - March 1966

#### SHORE CONTROL.



The location of the survey is based on the position of the observation spot on Observation Island obtained from the survey by H.M.A.S. "Moresby" in 1936 namely Latitude 15° 36' 58".5S Longitude 136° 54' 28".9 E.

The orientation of the survey is based on observations by Wild T2 theodolite of sun azimuths. From these observations the accepted azimuth of the line Observation Island to Combes Point was 213° 03' 52".

The remainder of the triangulation stations were co-ordinated by tellurometer distances and theodolite angles. All tellurometer measurements were made in both directions by separate observers.

The triangulation was connected to that of H.M.A.S. "Moresby" through the stations Observation Island and Kedge Point both of which were recovered. Observation Island station is also the same as that used by H.M.A.S. "Geranium" in 1923.

The survey was plotted from plane rectangular co-ordinates.

The triangulation results are recorded in attached lists as follows,

- (a) Diagrammatic Plan of Triangulation
- (b) List of Plane Rectangular Co-ordinates
- (c) List of Observed Angles and measured distances
- (d) Descriptions of Triangulation Stations

#### COASTLINE.

The coastline as plotted on the charts was walked in as no suitable air photos were available.

PR66/29

#### SOUNDINGS.

All soundings were taken by modern precision echo sounders adjusted as necessary for the variation in the speed of sound in sea-water.

These adjustments were made by the bar check method.

#### DATUM.

Soundings were reduced to the Turtle Island Datum namely 17.27 feet below the H.M.A.S. "Geranium" bench mark on Turtle Island.

Datum was transferred to Centre Island by simultaneous readings on the tide gauges at Turtle Island and in Clarke Bay. Datum in Clarke Bay is 1.2 feet on the tide pole and 13.5 feet below bench mark

Number 1 on Centre Island.

The transfer of datum is not considered to be entirely satisfactory for the following reasons,

- (a) The situation of the tide gauge in Clarke Bay is not good because of the very shallow water and the restricted nature of the bay. These factors will undoubtedly lead to a distortion of the tidal range.
- (b) The tides for part of each month during the transfer were semi-diurnal and for the remainder of each month were diurnal.
- (c) There is a known difference of at least 2 feet between the mean sea level in the north west monsoon season, which covered the period of transfer and the south east trade wind season.

For these reasons Turtle Island readings were used for the reduction of all soundings. It is strongly recommended that, as soon as possible, the tide gauge be moved to an open water site in the vicinity of the accepted port location and that one year's observations then be used for analysis. Such analysis would provide a true datum, which it is considered will be higher than the Turtle Island datum thus improving the present depth limitations.

The tidal pattern in the approaches from seaward to Centre Island and in the vicinity of the proposed port sites appeared to follow the Turtle Island pattern more closely than the Clarke Bay pattern.

No significant differences in level were observed over the area from Cape Vanderlin to Ataluma Point.

The attached table shows bench mark values. The locations of all bench marks were shown to the Chief Engineer.

#### TIDAL STREAMS.

Tidal stream measurements were taken at the proposed port sites.

Their velocities were insignificant. The measurements taken are attached in tabulated form. Locations of measurements are shown on the charts.

Stronger tidal streams were observed particularly in the channel between Observation and David Islands Here there is evidence of quite strong eddies at the time of maximum flood and ebb. It is considered however, that these eddies will not represent a danger to the navigation of large vessels provided that reasonable care is taken when passing through this channel.

#### LAND FEATURES.

The attached list shows heights above datum of the various significant points. Bald Hill, which is a conspicuous land mark, was substituted for North Hill, which is a featureless rounded hill of no use for navigational purposes.

### WIND AND WEATHER.

During the period of the survey wind and weather observations were taken from the ship. These are attached in tabulated form.

The prevailing winds during this period were from north to east.

The wind strength generally was insignificant.

Throughout the period there were numerous thunder storms of the line squall type which came from all directions. These squalls were usually narrow in extent and on occasions up to six different storms could be observed at one time. These squalls had a normal duration of 30 minutes to one hour. Generally they brought winds of up to 30 knots with blinding rain and a resultant reduction in visibility

range to as little as 200 yards. On one occasion torrential rain with strong winds shifting to all points of the compass prevailed for a period of 20 hours during which time visibility varied from 200 yards to 2 miles.

It is considered that weather conditions observed over the period would cause no interruption to the operation of large vessels other than that imposed by low visibility.

Observed weather conditions at the port site during the period would not have caused any interruption to loading operations.

Berthing operations would have been interrupted for short periods only during the passage of the squalls.

#### SEA AND SWELL.

Sea conditions were insignificant. In squalls seas became uncomfortable for small craft.

#### HOLDING GROUND.

The bottom generally is thick mud which provides good holding ground for ships anchors.

#### SEA BED MATERIAL.

In various locations, indicated on the charts, where the channel depths were less than 35 feet below datum probes were taken to determine the nature of the sea bed material. These probes were taken using a \frac{3}{4}" water pipe with low pressure water jet. The penetrations achieved are listed on the appropriate charts. In most cases the weight of the pipe was sufficient to achieve the penetration. With the water pump running it was necessary in many cases to hold back the pipe when the required depth was achieved.

Samples of the sea bed material (taken at positions shown on the charts) have been forwarded for analysis.

## SEA TEMPERATURE.

Sea temperatures were taken from time to time by reversing water bottle at 15 feet depth. These results are tabulated in the attached weather records.

## NAVIGATION AND NAVIGATIONAL AIDS.

It is considered that the navigation of the sea approaches, Schofield Channel, Addison Channel, the Gutter and thence to Ataluma Point presents no difficulty provided that the following navigational aids are provided:-

- (a) A light with 15 mile range on Cape Vanderlin.
- (b) A pile beacon on the north western end of Stevens
  Rocks to be lighted for night navigation.
- (c) A pile beacon on the western extremity of the shallow patch extending to the westward of David Island to be lighted for night navigation.
- (d) A pile beacon on the end of the spit running northward from the eastern extremity of Brown Island to be lighted for night navigation.

The recommended tracks are plotted on the appropriate charts.

The main approach light on Cape Vanderlin should have a safe sector limited to the westward by the foul ground lying eastward of Urquhart Island and to the eastward by Vanderlin Rocks.

## PROPOSED PORT SITE.

From the information available it is considered that, from the pure shipping viewpoint, the most suitable location for a berthing site is on the southern extremity of Ataluma Point, to take the form of a finger jetty running in a south easterly direction. This direction should be determined from analysis of the wind records and should be towards the most prevalent wind. This recommendation is based on conditions observed during the survey together with estimates of conditions expected during the season of south easterly winds. It is strongly recommended however that observations should be made by some qualified observer during the period of such wind conditions to confirm this recommendation. The wharf structure should be designed to allow for the maximum observed storm surge height, namely 25 feet above datum.

#### CHANGES SINCE PREVIOUS SURVEY.

There was no evidence of any marked change in depths since the 1923 survey. There is a minor building up of a bank running north westwards from Stevens Rocks. Probing showed this to be loose material.

The old river bar crossing appears to have shallowed and now the best crossing is further eastward than previously. Otherwise the area is basically stable.

#### DREDGING.

Although probes taken showed the sea bed material to be readily dredgeable it is considered that maintenance dredging would certainly be necessary and could present a problem of considerable magnitude.

## CYCLONIC STORM CONDITIONS.

No opportunity arose to enable an assessment to be made of general conditions applying during the passage of a cyclonic disturbance.

Indications were found on Centre Island, of the height reached by the sea surge during a major disturbance. This height has been marked by bench mark and measured as 25 feet above chart datum.

In order to assess true wave conditions in such a storm it would be necessary to install a wave height and period recorder to record during the storm. Since the occurrence of such storms is so rare this could occupy years of recordings. It is recommended however that a suitable wave recorder should be installed to operate for at least one year to assist in the assessment of the limitations if any, in port utilisation caused by the south easterly winds, with the added possibility of achieving records during a cyclonic storm, not necessarily one that passes through the immediate vicinity. There is no evidence of any surge effect higher than that already mentioned.

#### RIVER, RIVER BAR AND APPROACHES.

Limited soundings were taken from the proposed port site to the river bar and across the bar. These are shown on a separate chart.

Rough timber pile beacons were established to mark the best passage to the river mouth. These beacons are marked with square or round topmarks to port on entering or triangular topmarks to starboard on entering. Similar beacons were established in the river as far as the Black Rocks landing to show the best channel. In spite of this marking vessels should obtain the services of the available pilot before attempting the river passage.

Above the Black Rocks landing the river is navigable by boat to BORROLOOLA. Since there are several dangerous stretches, again passage should not be attempted without a pilot. In addition to known hazards there is a known tendency for channel changes caused by floods.

#### PLANE RECTANGULAR CO-ORDINATES

OBSERVATION	0		0		(Adopted)
COMBES POINT	28 057.0	W	43 097.8	S	
BARCLAY POINT	25 251.4	W	27 023.6	S	
WALKER	9 706.8	W	8 697.7	S	
RED BLUFF	1 297.6	W	8 556.0	N	
TURTLE	18 695.2	E	9 145.4	N	
KEDGE	23 662.2	E	7 589.1	S	
DAVID	7 87477	E	5 314.3	S	
BROWN	9 192.0	W	37 029.2	S	
ATALUMA POINT	32 481.7	W	48 363.3	S	
WESTALL POINT	35 410.8	W	48 281.5	S	
FLETCHER ISLAND	38 592.7	W	48 563.0	S	
LITTLE	27 667.1	W	37 891.6	S	
JEAN POINT	37 192.3	W	30 792.7	S	
STUART POINT	38 692.4	W	33 019.0	S	
HI-FIX I (BLACK CRAGGY)	83 058.8	W	4 575.0	N	
BALD HILL	11 384.8	W	31 739.4	N	
B.M.3	32 930.5	W	45 753.1	S	
INVESTIGATOR POINT	30 799.4	W	47 306.4	s	
RED (PAYNE ISLAND)	47 509.5	W	52 405.7	S	
JENSEN POINT	59 209.7	W	54 434.1	S	
LABU	65 551.9	W	55 014.7	S	
BEACH	78 579.7	W	56 517.5	S	
WEST NECK	65 040.0	W	31 148.6	S	
EAST NECK	62 495.3	W	31 929.9	S	
HERVEY	2 082.0	E	34 955.6	N	
PEARCE	3 895.3	E	42 736.6	N	
URQUHART	15 933.3	E	40 499.3	N	
VANDERLIN	29 952.5	E	9 576.2	N	
HI-FIX II (THREE HUMMOCKS)	53 426.4	E	6 045.4	S	

## LIST OF OBSERVED ANGLES AND MEASURED DISTANCES

AT OBSERVATION ISLAND 🛆		
STATION	OBSERVED ANGLE	DISTANCE IN FEET
COMBES POINT	00	51,425.9
BARCLAY POINT	9 <sup>0</sup> 59 <b>'</b> 38''	36,985.2
WALKER POINT	15° 041 27"	13,033.5
RED BLUFF	138° 18' 43"	8,653.8
TURTLE ISLAND	210° 52' 06"	20,812.2
KEDGE POINT	254° 43° 05"	24,849.4
DAVID ISLAND	270° 56° 58"	9,500.2
BROWN ISLAND	340° 52 <b>'</b> 36"	38,153.0
AT TURTLE ISLAND		
OBSERVATION ISLAND	00	20,812.2
BALD HILL	62° 58° 43"	37,620.4
HERVEY ROCKS	83° 17' 57''	30 <b>,</b> 694 <b>.7</b>
PEARCE ISLAND	92 <b>°</b> 17 <b>'</b> 22''	36,707.1
URQUHART ISLAND	111 <sup>0</sup> 01' 59"	31,475.3
CAPE VANDERLIN	203 <sup>0</sup> 52 <b>'</b> 33''	11,265.5
AT BROWN ISLAND 🛆		
OBSERVATION ISLAND	00	<i>3</i> 8 <b>,</b> 153 <b>.</b> 0
ATALUMA POINT	230° 06' 31"	25,901.2
AT COMBES POINT 🛆		
OBSERVATION ISLAND	00	51,425.9
LITTLE ISLAND	331° 13' 06"	5,220.8
AT LITTLE ISLAND 🛆		
COMBES POINT	00	5,220.8

STUART POINT

109° 33' 37" 12,054.0

	STATION	OBSERVED ANGLE	DISTANCE IN FEET	
	AT STUART POINT 🛆			
	LITTLE ISLAND	00	12,054.0	
	JEAN POINT	280° 07° 46"	2,684.5	
	AT ATALUMA POINT 🗻			
•	BROWN ISLAND	00	25,901.2	
•	PAYNE ISLAND	190° 53' 40"	15,562.0	
	FLETCHER ISLAND	204° 04' 42"	6,114.3	
	WESTALL POINT	207 <sup>0</sup> 321 59"	2,930.2	
	BENCH MARK 3	286° 11' 38"	2,648.5	•
	INVESTIGATOR POINT	353° 481 4111	1,986.8	
•	AT PAYNE ISLAND			
	ATALUMA POINT	00	15,562.0	
	JENSEN POINT	185° 131 14"	11,874.7	•
				•
	AT JENSEN POINT 🛆			
	PAYNE ISLAND	00	11,874.7	
	LABU ISLAND	184 <sup>0</sup> 361 1811	6,368.7	*
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	AT LABU ISLAND 🛆			•
	JENSEN POINT	00	6,368.7	
•	BEACH	178° 39° 00"	13,114.2	•
	LABU FALSE STATION	328° a2' 42"	835.0	÷ .
		) ·	<i>□,,,</i> ,,	
	AT LABU FALSE STATION			
	JENSEN POINT	00		
	WEST NECK	00 270 <sup>0</sup> 25 <b>'</b> 19''	27.7(7.7	
	40 TO T 14 EOU	270 251 1911	23,365.7	,
				· ·

STATION	OBSERVED ANGLE	DISTANCE IN FEET
AT WEST NECK 🚣		
LABU FALSE STATION	00	23,365.7
EAST NECK	287° 27° 05"	2,661.9
AT URQUHART ISLAND 🗘		
OBSERVATION ISLAND	00	
HI-FIX II (THREE HUMMOCKS)	301° 08' 51"	59,767.4
AT BALD HILL 🔨		
HERVEY ROCKS	00	
HI-FIX I (BLACK CRAGGY)	172° 40' 31"	76,649.1

#### DESCRIPTIONS OF STATIONS

OBSERVATION A cement block found and inscribed "HMAS GERANIUM 1923" eight feet east of the obelisk on the summit of Observation Island.

KEDGE A brass plate inscribed "HMAS MORESBY 1936" cemented into the drying rock reef off Kedge Point. (The plate was found lying loose among the rocks and using the circular plate imprint in old cement as a guide, it was replaced in its original position.)

DAVID A G.I.P. set in cement on a flat rock shelf approx.

150' from H.W.M. on the most northerly point of David Island.

WALKER A G.I.P. cemented in rock at H.W.M. on the south west point of Walker Point.

#### BARCLAY POINT

A G.I.P. cemented in rock on top of cliff on the most eastern point of Barclay Point.

BROWN A G.I.P. cemented in rock 60' from H.W.M. on the most northerly point of Brown Island.

LITTLE A steel picket cemented into rock near H.W.M. on the south eastern side of Little Island.

JEAN POINT A G.I.P. cemented into rock near H.W.M. on a point at the northern entrance to Survey Bay and inscribed "A.H.S. - 1966"

STUART POINT A G.I.P. cemented into rock near H.W.M. on a point at the southern entrance to Survey Bay.

COMBES POINT A short length of star picket cemented into a rock crevice and surmounted by a cairn of stones about 400° from H.W.M. on the most north easterly point of Combes Point.

INVESTIGATOR POINT A & cut into flat rock about 50ft. inshore from H.W.M. at alternate port site.

ATALUMA POINT A brass plate inscribed "PERMANENT MARK B.M." set in a concrete block on top of a rock knoll at the south-eastern side of Clarke Bay.

B.M. 3. A \( \times \) cut into flat rock with "B.M.3 - A.H.S. - 1966" inscribed in cement located near H.W.M. on a rocky point between two sand beaches on the northern side of Clarke Bay. (B.M.1 and B.M. 2 are similar suitably inscribed marks located on the south-eastern and eastern sides respectively of Clarke Bay.)

WESTALL POINT A short length of star picket cemented into a rock crevice about halfway up the face of the bluff on the south west shore at the entrance of Clarke Bay.

FLETCHER ISLAND

A short length of star picket cemented into rock and covered by a cairn on the eastern shore 50ft. from H.W.M. on Fletcher Island.

PAYNE ISLAND A G.I.P. cemented into the end of a rock reef extending south from Payne Island.

JENSEN POINT A G.I.P. cemented into rock approximately 100ft. inshore from H.W.M. and at the edge of low trees and light scrub on Jensen Point.

LABU A G.I.P. cemented into rock which covers at high water on the southern side of Labu Island near the edge of small mangrove trees.

BEACH A G.I.P. cemented into sand on the eastern side of a large bush at the southern end of a sand beach on the south-eastern side of South West Island.

WEST NECK (SOUTH WEST ISLAND) A G.I.P. cemented into sand and 95ft. north of a steel fence picket found set in cement.

EAST NECK (CENTRE ISLAND) A G.I.P. cemented into sand.

RED BLUFF A cut into flat rock on top of the overhanging cliff at Red Bluff on North Island.

TURTLE A steel fence picket placed in a semi-permanent sandridge near the southern end of Turtle Island. (The mark placed by HMAS MORESBY in 1936 was not found.)

TURTLE ISLAND BENCH MARK. A found cut into the west face of a large square boulder on north end of the beach at south west corner of the island. The boulder is about 20 yards inshore, and about 50 yards from beginning of the H.W. rocks and 17.27 feet above chart datum.

<u>VANDERLIN</u> A star picket driven into sand on the highest summit of Cape Vanderlin.

<u>URQUHART</u> A G.I.P. set in concrete bearing 060° compass at a distance of 1500ft. from sandy beach on south western point of Urquhart Island.

PEARCE A G.I.P. set in concrete bearing 040° compass at a distance of 500ft. from the most westerly point of Pearce Island.

HERVEY A G.I.P. set in concrete 30ft. from H.W.M. on the south west point of Hervey Rocks.

BALD HILL

G.I.P. cemented in limestone outcrop, on the summit vina of a/covered hill on North Island, due west of Hervey Rocks.

HI-FIX I (BLACK CRAGGY) A star picket driven in the sand approx. 100ft. from H.W.M. on the northern end of a sandy beach on the north east end of Black Islet.

#### HEIGHTS OF STATIONS

TURTLE	181.6	above	chart d	datum
KEDGE	101.3	<b>††</b> ·	**	Pf
DAVID	271.1	**	11	? <b>?</b>
OBSERVATION	711.7	**	11	11
URQUHART	311.2	**	9 4	11
VANDERLIN	1501.2	**	11	11
RED BLUFF	891.2	ŧŧ	<b>9</b> 9	11
BALD HILL	1111.8	11	11	11

	VALUES	OF	BENCH	MARKS	ON	CENT	RE	ISLAND		
B.M.1	j	is	141.74	ab <b>o</b> ve	zero	on	Port	McArthur	tide	pole.
B.M.2	i	Ls		ff					11	**
B.M.3	i	is	13'.17	91	? *	11	*1	71	7.9	11
Peg on Rock	t 2	Ls	211.03	11	11	11	tt	11	**	11
Peg in satt	le i	ls	291.83	11	11	11	11	11	11	11
Approx. Sur level near ATALUMA PO	)	Ls	261.0	11	11	11	11	***	11	11

## CHART DATUM AT PORT MCARTHUR

1.2 feet on tide pole

## SIR EDWARD PELLEW GROUP

## APPROACHES TO PORT MCARTHUR

## POSITION A 3rd-4th FEBRUARY, 1966

# FLETCHER ISLAND 27°15' WESTALL POINT 56°54' ATALUMA POINT

	DEPTH	ACCORDINATION AND A SPECIAL PROPERTY.	L STREAM RATE	WIN	RATE	SEA-DIRECTION AND HEIGHT
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION	IN KNOTS	IN FEET
1800	10	Nil	Nil	015	6	Flat
E.S.T.	20	11	11			
3rd.	30	**	**			
	40	ŤŤ	11			
1830	10	Nil	Nil	013	9	Flat
	20	**	71			
	30	279	0.1			
	40	Nil	Nil			
1900	10	Nil	Nil	014	8	Flat
	20	301	0.1			
	30	Nil	Nil		•	
	40	11	11			
1930	10	Nil	Nil	027	8	Flat
	20	11	**			
	30	283	0.1			
	40	Nil	Nil			
2000	10	Nil	Nil	030	8	Flat
	20	156	0.1			
	30	Nil	Nil			
	40	71	**			
2030	10	Nil	Nil	060	8	Flat
	20	250	0.1			
	30	Nil	Nil			
	40	ŧŧ	*1			
2100	10	Nil	Nil	045	6	Flat
	20	17	11			
	30	11	ŧt			
	40	11	<b>11</b>			

		TIDAI	STREAM	WIND		SEA-DIRECTION
TIME	DEPTH IN FEET	DIRECTION	RATE IN KNOTS	DIRECTION	RATE IN KNOTS	AND HEIGHT IN FEET
	Annada ci sun indicidi un gistindi denga colsilarida					ake Managaria (20). At a recognitive to the confidence of the confidence of the confidence of the confidence of
2130	10	Nil	Nil	045	5	Flat
E.S.T.	20	164	0.1			
3rd.	30 !:a	Nil	Nil "			
	40	11	**			
2200	10	Nil	Nil	020	5	Flat
	20	11	11			
	30	1)	11			
	40	11	11			
2230	10	Nil	Nil	060	4	Flat
	20	11	11			
	30	11	11			
	40	11	11			
2300	10	Nil	Nil	055	4	Flat
-	20	Nil	Nil			H.W. 2300
	<b>3</b> 0	Ħ	11			
	40	ŧŧ	ff			
2330	10	Nil	Nil	055	4	Flat
<i>2)</i>	20	11	ff	۵٫٫٫	,	3 200 0
	30	**	<b>!</b> †			
	40	11	11			
		0.55				
0000	10	073	0.3	Calm		Flat
E.S.T.	20	052	0.3			
4th.	30	065	0.3			
	40	050	0.2			
0030	10	070	0.4	Calm		Flat
	20	065	0.5			
	30	075	0.6			
	40	064	0.5			
0100	10	063	0.6	Light Áir	S	Flat
	20	053	0.6			
	30	074	0.7			
	40	074	0.7			

			TIDA	L STREAM	W:	IND	SEA-DIRECTION
	TIME	DEPTH IN FEET	DIRECTION	RATE IN KNOTS	DIRECTION	RATE IN KNOTS	AND HEIGHT IN FEET
	0130	10	061	0.8	Calm		Flat
	E.S.T.	20	056	0.9			
	4th.	30	065	0.9			
•		40	074	0.9			
	0200	10	065	1.0	Calm		Flat
		20	053	1.0			
,		30	060	1.0			
		40	074	0.9			
	0230	10	073	1.0	Calm		Flat
		20	064	1.0			
		30	064	1.0			
		40	075	1.1			
	0700	40	050	4.0	~ 7		
	0300	10	072	1.0	Calm		Flat
		20	053	1.0			
		30 ho	070	1.1			
		40	080	1.2			
	0330	10	062	1.1	Calm		Flat
		20	064	1.1			
		30	083	1.2			
		40	080	1.1			
•							
	0400	10	072	1.2	Calm		Flat
		20	075	1.2			
		30	063	1.1			
		40	077	1.0			
	0430	10	080	1.2	Calm		Flat
		20	080	1.2			
		<b>3</b> 0	062	1.0			
		40	070	1.1			
· · · · · · · · · · · · · · · · · · ·	0500	10	053	1.0	Calm		Flat
		20	068	1.1			
		30	080	1.0			
		40	080	0.85			
			111	estas til est	And the second second		

#### POSITION A

	DEPTH	TIDA	L STREAM RATE	WIND		SEA-DIRECTION
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION	RATE IN KNOTS	AND HEIGHT IN FEET
0530	10	052	0.8	Calm		Flat
E.S.T.	20	080	0.8			
4th.	30	089	0.7			
	40	076	0.6			
0600	10	054	0.7	320	6	Flat
	20	062	0.7			
	30	080	0.5			
	40	075	0.4			
0630	10	044	0.55	Calm		Flat
	20	075	0.4			
	30	100	0.35			
	40	083	0.1			
0700	10	075	0.1	010	5	Flat
	20	Nil	Nil			
	<b>3</b> 0	120	0.25			
	40	Nil	Nil			L.W.0728
0730	10	090	0.35	Calm		Flat
	20	090	0.2			
	30	240	0.3			
	40	245	0.4			
0800	10	108	0.1	Calm		Flat
	20	238	0.2			
	30	240	0.6			
	40	252	0.4			
0830	10	Nil	Nil	Calm		Flat
	20	230	0.55			
	30	239	0.6			
	40	247	0.45	,		
0900	10	Nil	Nil	Calm		Flat
	20	248	0.78			
	30	250	0.9			
	40	257	0.7			

## 3rd-4th February, 1966

	DEPTH	TIDAL S	STREAM RATE	WIND	RATE	SEA-DIRECTION AND HEIGHT
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION ]	IN KNOTS	IN FEET
0930	10	243	0.5	Calm		Flat
E.S.T.	20	249	0.9			
4th.	30	255	0.9			
	40	266	0.45			
1000	10	243	0.9	Calm		Flat
	20	250	1.1			
	30	255	1.0			
	40	256	0.7			
1030	10	246	0.95	Light Airs	5	Flat
	20	250	0.95			
	30	261	0.8			
	40	256	0.6			
1100	10	244	1.3	Light Airs	3	Flat
	20	252	1.1			
	30	256	0.95			
	40	261	0.7			
1 <b>13</b> 0	10	236	1.0	Light Airs	3	Flat
	20	251	1.1			
	30	253	1.0			
	40	254	0.7			
1200	10	240	1.1	Light Airs	5	Flat
	20	255	1.0			
	<b>3</b> 0	260	0.9			
	40	252	0.7			
1230	10	229	1.05	090	6	Flat
	20	243	0.8			
	30	255	0.75			
	40	267	0.4			
1300	10	232	1.0	Calm		Flat
	20	250	0.8			
	30	255	8.0			
	40	260	0.5			

	DEPTH	TIDAL STREAM RATE		WIND	RATE	SEA-DIRECTION AND HEIGHT		
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION	IN KNOTS	IN	FEET	
1330	10	232	0.6	Calm			Flat	
E.S.T.	20	249	0.7					
4th.	30	249	0.5					
	40	248	0.35					
1400	10	238	0.15	Calm			Flat	
	20	234	0.45					
	30	240	0.45					
	40	251	0.4					
1430	10	Nil	Nil	060	8		Flat	
1450	20	251	0.3	000	Ŭ		1 100	
	<b>3</b> 0	260	0.4					
	90 40	265	0.35					
	10	20)	♥ <b>•</b>					
1500	10	Nil	Nil	060	6		Flat	
-	20	265	0.1					
	30	240	0.15					
	40	242	0.2					
1530	10	Nil	Nil	060	8		Flat	
	20	11	17					
	30	**	11					
	40	11	11					
1600	10	Nil	Nil	045	8		Flat	
	20	*1	11					
	30	11	11					
	40	11	11					
4670	40	NT.º 7	እናድ ግ	025	8		T77 - 1-	
1630	10	Nil "	Nil	025	0		Flat	
	20							
	30 40	255	0.15					
	40	248	0.15					
1700	10	250	0.35	000	10	N.E.	1	
	20	260	0.45					
	30	240	0.3					
	40	182	0.1					

		TIDAL S		WIND			SEA-DIRECTION	
m T M T T	DEPTH	DIRECTION	RATE IN KNOTS	DIRECTION	RATE IN KNOT		ND HEIGHT IN FEET	
TIME	IN FEET	DIRECTION	TM WMOTO	DIMEGITOR	7.17 11110 1		iger eft. I in the plant district plant	
1730	10	Nil	Nil	000	9	N.E.	1	
E.S.T.	20	214	0.1					
4th.	<b>3</b> 0	225	0.15					
	40	275	0.1					
1800	10	198	0.1	020	10	N.E.	1	
	20	217	0.1					
	30	252	0.2			*		
	40	272	0.3					
1830	10	268	0.15	045	10	N.E.	1	
	20	235	0.3					
	30	Nil	Nil					
	40	\$ <b>†</b>	***					
1000	40	<b>\Y.</b> * "I	እ <u>የ</u> ፌ ግ	045	8	N.E.	1	
1900	10	Nil	Nil O•2	042	O	1V - 111 0	•	
	20	228	0.1					
	30 40	223 265	0.3					
	40	207	0.5					
1930	10	228	0.1	045	6	N.E.	1	
.,,,,	20	256	0.15	•				
	30	250	0.2					
	40	234	0.15					
		•						
2000	10	Nil	Nil	045	6	N.E.	1	
	20	260	0.2					
	30	205	0.1					
	40	Nil	Nil					
2030	10	Nil	Nil	045	7		Flat	
	20	11	††					
	30	11	11					
	40	11	11					
					_			
2100	10	Nil	Nil	045	8		Flat	
	20	11	11					
	30	11	11					
	40	₹ ₹	††					

### POSITION A

TIME	DEPTH IN FEET	TIDAL ST	TREAM RATE IN KNOTS	WIND DIRECTION	RATE IN KNOTS	SEA-DIRECTION AND HEIGHT IN FEET
2130 E.S.T. 4th.	10 20 30 40	Nil ** **	Nil "	Calm		Flat

## SIR EDWARD PELLEW GROUP

## APPROACHES TO PORT MCARTHUR

## POSITION B 15th-16th FEBRUARY, 1966

# ATALUMA POINT 52°00' TRANSIT Ø TRANSIT

	DEPTH	TIDAL	STREAM RATE	WIND	RATE	SEA-DIRECTION AND HEIGHT		
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION	IN KNOTS	I	N FEET	
1630	10	200	0.3	020	6	N.	1	
E.S.T.	20	Nil	Nil					
15th.	30	205	0.1					
	40	230	0.1					
1700	10	205	0.25	030	6	N.	1	
	20	Nil	Nil					
	30	**	9.9					
	40	192	0.1					
1730	10	212	0.15	045	6	N.	1	
	20	Nil	Nil					
	30	204	0.2					
	40	213	0.2					
1800	10	203	0,2	045	10	N.	1	
	20	Nil	Nil					
	<b>3</b> 0	224	0.1					
	40	230	0.25					
1830	10	210	0.1	045	6	N.	1	
	20	Nil	Nil					
	30	Nil	Nil					
	40	Nil	Nil					
1900	10	Nil	Nil	040	6		Calm	
	20	11	9.7					
	30	<b>f1</b>	99					
	40	235	0.2					
1930	10	Nil	Nil	042	7		Calm	
	20	<b>?</b> †	7 9					
	30	11	<b># #</b>					
	40	ff	fŧ					
2000	10	Nil	Nil	045	8		Calm	
	20	11	81					
	30	11	**					
	40	**	11					

## 15th-16th FEBRUARY, 1966

m T ME	DEPTH IN FEET	TIDAL STREAM RATE DIRECTION IN KNOTS		WIND DIRECTION	RATE IN KNOTS	SEA-DIRECTION AND HEIGHT IN FEET		
TIME	TH EDET	DIRECTION	TH ITHOTO	DITION				
2030	10	Nil	Nil	050	9	N. 1		
E.S.T.	20	**	**					
15th.	30	11	ff					
	40	11	11					
2100	10	Nil	Nil	045	8	Calm		
	20	11	**					
	30	7 7	**					
	40	11	11					
2130	10	Nil	Nil	045	10	Calm		
	20	* 1	11					
	30	8.4	11					
	40	11	**					
2200	10	Nil	Nil	045		N. 1		
	20	îī	<b>8</b> 8			H.W.2200		
	30	11	11					
	40	tt	11					
2230	10	Nil	Nil	045	6	N. 1		
	20	038	0.2					
	30 <sup>-</sup>	Nil	Nil					
	40	11	**					
2300	10	016	0.45	080	6	N. 1		
	20	030	0.6					
	30	022	0.4					
	40	022	0.4					
2330	10	023	0.6	080	8	N. 1		
	20	036	0.7					
	30	026	0.6					
	40	020	0.3					
0000	10	030	0.9	045	6	N. 1		
E.S.T.	20	036	0.9					
16th.	30	034	0.85					
	40	030	0.6					

#### POSITION B

### 15th-16th FEBRUARY, 1966

			TIDAL STREAM		WIND	<b>50</b> A (1717)	SEA-DIRECTION AND HEIGHT		
	mTMT	IN FEET	DIRECTION	RATE IN KNOTS	DIRECTION	RATE IN KNOTS	IN FEET		
•	TIME	TM Lant	DIMBOLLON			z maganda de constituir de la constituir d			
	0030	10	007	0.8	080	6	N. 1		
	E.S.T.	20	024	0.8					
	16th.	30	020	0.7					
	10011	40	007	0.6	•				
•		10	001	- • •					
	0100	10	030	1.1	080	5	Calm		
	0100	20	035	1.3					
•				1.0					
× ×		30 ha	030	0.8					
		40	030	0.0					
					090	<u>-</u>	Calm		
•	0130	10	025	1.1	080	5	Oalm		
•		20	040	1.3				•	
		30	035	1.1		•		*	
•		40	035	1.0					
•								4	
• •	0200	10	035	1.3	080	5	Calm		
		20	038	1.3					
		30	033	1.1					
		40	040	1.0					
•									
	0230	10	028	1.4	135	5	Calm	ķ	
		20	040	1.4					
: .		30	038	1.0					
		40	032	0.75					
		70	0)2	0.17					
	0700	40	000	1 1E	135	5	Calm		
	0300	10	022	1.15	1))		OQZIII		
•		20	043	1.15					
		30	020	0.6				*	
		40	032	0.5					
							4		
	0330	10	019	0.9	090	3	H 2		
		20	034	0.75					
		30	023	0.4					
•		40	002	0.1					
	0400	10	038	0.9	020	5	Calm	<b>b</b>	
•		20	055	0.6					
		30	018	0.2					
		40	N <b>il</b>	Nil				*	
		. 5							
								*	

## POSITION B

## 15th-16th FEBRUARY, 1966

DEPTH		TIDAL S	STREAM RATE	WIND	RATE	SEA-DIRECTION AND HEIGHT		
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION	IN KNOTS	IN FEET		
			0.77	T at an la de A	i na	Calm		
0430	10	035	0.75	Light A	ırs	Oalii		
E.S.T.	20	046	0.2					
16th.	30	Nil	Nil					
	40	11	**					
0500	10	046	0.5	Light A	irs	Calm		
	20	Nil	Nil					
	30	11	11					
	40	11	11					
0530	10	043	0.4	Light !	Airs	Calm		
	20	Nil	Nil					
	30	11	11					
	40	220	0.2					
0600	10	010	0.4	Light .	Airs	Calm		
3000	20	Nil	Nil			L.W. 0605		
	30	1?	<b>\$\$</b>					
	40	234	0.1					
0630	10	Nil	Nil	Calm		Calm		
00)0	20	234	0,2					
	30	Nil	Nil					
	40	91	11					
0500	40	Nil	Nil	045	4	Calm		
0700	10		0.3	0,7	·			
	20	215	0.2					
	30 h0	225						
	40	205	0.2					
0730	10	185	0.3	045	4	Calm		
	20	225	0.35					
	30	225	0.45					
	40	Nil	Nil					
0800	10	186	0.6	090	3	Calm		
	20	223	0.6					
	30	220	0.4					
	40	202	0.2					

### POSITION B

## 15th-16th February, 1966

		TIDAL	STREAM	WIND	SEA-DIRECTION		
TIME	IN FEET	DIRECTION	RATE IN KNOTS	DIRECTION	RATE IN KNOTS	AND HEIGHT IN FEET	
TTPE	TIA L DUIT	DIKECTION				ne O (((()) e (()) e ((	
0830	10	186	0.45	Light Ai	rs	Calm	
E.S.T.	20	210	0.5				
16th.	30	Nil	Nil				
	40	215	0.2				
0900	10	205	0.4	Light Ai	irs	Calm	
	20	209	0.4				
	30	208	0.3				
	40	212	0.1				
0930	10	203	0.4	Light A	irs	Calm	
	20	210	0.6				
	30	215	0.6				
	40	224	0.3				
1000	10	215	0.6	Light A	irs	Calm	
	20	203	0.55				
	30	210	0.4				
	40	223	0.25				

### SIR EDWARD PELLEW GROUP

## GEORGES CHANNEL

# POSITION C 23rd FEBRUARY, 1966

# SAND 76°45' PEG Ø WEST NECK

	DEPTH	TIDAL	STREAM RATE	WIND	To a mire	
TIME	IN FEET	DIRECTION	IN KNOTS	DIRECTION	RATE IN KNOTS	REMARKS
1415	10	188	0.6	N.	3	Sounding 39
E.S.T.	20	Nil	Nil			
	30	11	91			
1445	10	180	1.15	N.	3-4	
	20	180	1.0			
	30	Nil	Nil			
1515	10	180	0.6	N.	6	
	20	180	0.7			
,	30	190	0.05			
1545	10	180	0.5	N.	6	
	20	180	0.5			
	30	180	0.5			

#### METEOROLOGICAL OBSERVATIONS

## AT SIR EDWARD PELLEW GROUP.

Columns Wd. Wind direction

Ws. Wind speed in knots

tw. Wet bulb temperature

td. Dry bulb temperature

Pp. Barometric pressure in mbs.

Sea t. Sea temperature at 15'

cl t Cloud type

Cl a Amount of cloud in tenths of the sky covered. Cla7- means 7/10 of sky covered.

Sea & Swell Description

							31.				
	Jan.	<b>W</b> d	Ws	tw	td	Pp	Sea t	C1 t	1 a	Sea & Swell	Position
	<u>28</u> 0600		(11k)								
	1200	N	For <b>s</b> e 3	77	84	1012		Cu & Cu Nim	9	NE½: 3: Swell	Observation Island
	1800	NE	6.8	77	82	1012		CuCuNim Some FCu	10	E½: 1: Swell	99 17
	<u>29</u> 06 <b>0</b> 0	NE	5•5	76	82	1013		Cu to Cu Nim	9	Calm	Port Site
	1200	N	3.8	78	84	1014		Cu & Cu Nim	7	N15:	Main channel
•	1800	N	5•9	78	85월	1013		Fw Cu Cu Nim	2 4	N² ŧ	Port Site
	<u>30</u> 0600	E	2•9	78	82	1014		Cu Nim	1	Calm	Port Site
	1200	SSE	5•9	78	80½	1014		Some Fc Cu Nim	9	SE2	Port Site
	1800	E	8.0	78	85	1013	86 <sup>0</sup> f	Cu Nim Air Cu	10	Calm	Port Site
	<u>31</u> 0600	SE	NIL	77½	81	1012		CuCuNim Air Cu	3 6	Calm	Port Site
	1200	NE	4.0	76	81	1014	82 <sup>0</sup> F	Cu & Cu Nim	7	$NE_{2}^{1}$ : $\frac{1}{2}$ ! Swell	33 Probe Position
	1800	S to W	Airs to 3.0	77½	80	1013		Cu Scattered Cu Nim	9	SE½	Port Site
	Feb. 1	Calm		76±	81	1014		Cu(high)	10	SE21	Port Site
	1200	N	5•0	-	-	***		Cu (Fw) Air cu	1 3	Calm .	Port Site
<u>.</u>	1800	NNE	8•2	78	86 <del>1</del>	1011날	84 <sup>0</sup> F	Cu Nim Air Cu	3 6	ne <del>l</del>	Port Site
	<u>2</u> 0600	SW	10.8	75½	77	1013		Cu Nim	10	SW±1	Port Site
	1200	SE	9•8	77 <del>½</del>	82	1013		Cu (Fw) Air Cu	1 3	SE½ <sup>†</sup>	Port Site
•	1545	Sharp S	SE squall bl	owing	35 kno	ts Seas	s 41 in	anc. at Port Si	te		
•	1800	SE	16.4	75날	82	1013	83 <sup>0</sup> F	Cu & Cu Nim	9	SE121	Brown Is.
	<u>3</u> 0600	SE	6.0	75½	79½	1013		Cu	10	Calm	Brown Is.
	1200	NE	9.0	71	73	1012날		Cu Nim	10	E2 !	Port Site
	1800	N	5 <b>.</b> 8	76날	83	1012	83 <sup>0</sup> F	Cu	8	NE <sub>2</sub> 1	Port Site
	0600 7	NW	7.0	78	80½	1012		Cu (Fw)	3	Calm	Port Site
	1200	E	5•9	78½	86	1013		Cu Nim	7	Calm	Port Site
	1520						83 <sup>0</sup> F				
	1800	NNE	10.4	78	85	1011		Cu Nim	8	NE1	Port Site
	<u>5</u> 0600	SE	15.6	79	82	1012		Cu Nim	10	SE1½	Port Site
•	1800	NE	17.2	76	79	1013		Cu Nim	10	NE4-5	Turtle Island
	1830						83 <sup>0</sup> F				
	<u>6</u> 0600	SE	8.0	77	82	1013		H Cloud Cu N <b>i</b> m	5 5	Calm	Turtle Island
	1200	SE	2•0	<b>7</b> 9	84	1013		Cu Nim	4	Calm	Port Site
	1330						de <b>rata W</b>	Vinds& Sea accom	panyir	ng	
	1800	E	16•6	76	80불	1012		Cu & Cu Nim	10	SE2 1	Turtle Island
	7 <sub>0600</sub>	ese	4.0	77	80	1012		Cu	3	Calm	Turtle Island
	1200	Scatte					r <b>isi</b> ng j	in afternoon			
	1800	SE	10 <b>-1</b> 5			1012		Cu Nim	10	N3: Swell	Paradise Bay
			-								
•										•	

<u>8</u> 0600	NE										
		17.6	78	82	1012		Cu Nim	10	N12 Swell	Paradise Bay	
1200	NE	25.0	<b>7</b> 8	83	1013		Cl.High Cu Nim	4 3	N3 <sup>‡</sup> Swell	Observation Island	•
1800	SE	4•2	78	81	1011		Cu & Cu Nim	10	E1*	Port Site	
<u>9</u> 0600	SE	4	77½	80	1011		Cu	1	Calm	Port Site	
1200	NE	7.8	77½	84	1011		Cu Nim	10	NE S	Turtle Island	
1800	E	15•6	79	83	1010	81 <sup>0</sup> F	Air Cu Cu Nim	5 5	ESE 1½8	Port Site	
<u>10</u> 0600	NE	11.8	<b>7</b> 8	82	1012		Air Cu Cu Nim	8 1	E 1:	Port Site	
1400	NE	9•4	79½	88	1011		Air Cu Cu Nim	6 2	E 2	Port Site	
1800	NE	6.0	77	83	1010		Cu Nim	10	NE 18	Port Site	
11 0600	SW	4.0	<b>7</b> 5	76	1012		Cu N <b>i</b> m	10	S ½!	Port Site	
1200	Е	3.8	77	82	1012		Air Cu & Cu Nim	10	NAM 15:	Turtle Island	
1800	N	9•8	76	81	1011		FW Cu AssCl High	1 5	NE 1	Port Site	
1 <u>2</u> 0600	NE	4.5	78	81	1012		Cu Nim Air Cu	5 5	Calm	Port Site	
1200	W	11.8	76날	79	1013岁		Cu & Cu Nim	10	M <b>W</b> 1	Observation Island	
1800	N	11.7	78½	82	1012		Air Cu Cu Nim	2	и 1:	Observation Island	
<u>13</u> 0600	W	7.0	78	82	1013		Cu Nim Air Cu	3 1	Calm with slight N.swe	Observation Island	
1200	N							0	NE <b>1</b> *	Port Site	
1800	И	9.0	77날	83	1012		Cu & Ns	8	NE (*	LOIA PIAG	
1 <u>/</u> 0600	400	Calm	78	80	1010		Cu & Ns	8	Calm	Port Site	
1300	N	4•6	80	84	1011		Cu & Ns	7	Calm	Port Site	
1800	N	8.6	78	83	1012	82 <sup>0</sup> F	ACu Cu	8 2	NE ½:	Port Site	
15 0600	NW	6.8	77	80분	1011		Cu	9	Calm	Port Site	
1200	NE	9.8	79½	85	1012		Cs Cu	2 2	Calm	Port Site	
1800	N	7•8	79	86	1010		Cs Cu	<u>4</u> 1	N 1*	Tidal Stream Posn B.	•
<u>16</u> 0600	E	1.0	79	83	1012		Clear		Calm	H II H	
1300	NE	3 <b>.</b> 6	80	88	1013		Cu (Fw)	8	NE ½	Urquhart Island	
1800		7•4	70½	84	1012		Cs	<i>L</i> <sub>‡</sub>	Calm	Turtle Island	
<u>17</u> 0600	W	3•0	<b>7</b> 9	83	1013		Clear		Calm	tt ti	
1300		8.0	80	85	1012		Cu	1		Goo Annuaches	
			00	07	1010		Cs	5	NW ½; Calm	Sea Approaches Observation Island	•
1820	WI	5•0	80	83	1010	•	Clear		Ca <u>r</u> m	Opservation island	

		Feb.	Wd	Ws	tw	td	Pp :	Sea t	C1 t	C1 a	Sea & Swell	Position
		<u>18</u> 0600	SSE	19.6	82	86	1010		Cu	3		
			1GG	19.0					As	3 7	SE 1½t	Observation Island
•		1300	•	Calm	78	85	1008		Cu A/Cu	<b>1</b> 9	Calm	Centre Island
·	•	* N.B.	Barograph	records	fall of	.2 in	ns. from 3/10) wit	1100 to 18	300. rius above.	lov	V	
		1800	N	7.0	77	86	1005		*	9	Calm	Port Site
	:	<u>19</u> 0600	N	4•2	79	82	1007		Cu	10	Calm	Port Site
*: *		1200	N	4•2 3•9	78 <del>1</del>	85	1007		A/Cu	3	NMS <sup>7</sup> •	Stevens Rocks
		1800	ИМ	10.2	74 74	88	1004		A/Cu	10	Calm	Port Site
		<u>20</u> 0600				0.0	1001		07		NW 1	Port Site
•		0600 1200	NW Light A	8.0 inc	75 73	82 88	1004 1005•5		Clear Clear		Calm	Port Site
	•	1200	DIEILO W	11.0								Considerable Haze Vis 2m.
		1800	NE	10•5	71	87	1006.5		Clear		NE 11	Port Site Considerable Haze
	; 	<u>21</u> 0700	NW	<b>6.</b> 6	73	82	1006		Sky obscur by haze	ed	Calm	Port Site
		1230	NE	<b>3•</b> 9	73 <del>½</del>	88	1007		No cloud but haze		Calm	Vis. 4m.Port Site
•		1800	NNE	74	77	89	1006		Clear. Haz lifting.	е	Calm	Port Site
		<u>22</u> 0600	NM	74	77	78	1009		Clear		Calm	Port Site
		1200	SE	5•0	80½	90	1013		Clear.Vis	6m.	SE ½¹	Labu Island
	÷	1930	NE	8.2	79	87	1010		11 11	11	E 1*	Labu Island
· · · · · · · · · · · · · · · · · · ·		<u>23</u> 0600	ИМ	3.0	79½	83	1011		Clear		Calm	Labu Island
÷ .		1200	Calm	-	82	94	1012		Clear			Labu Island
•		1800	MNW	11.8	80	88	1008		Clear		Calm	Labu Island
		<u>24</u> 0600	SW	5•4	79	82	1012		Cu	1	Calm	Labu Island
		1200	SW	7.8	77	91	1010		Clear		Calm	Labu Island
	•	1800	NNW	12.1	79 <del>1</del>	88	1008		Cu	1	NM ₹	Labu Island
	•	<u>25</u> 0600	W	7•8	<b>7</b> 9	81	1011		Clear		Calm	Port Site
		1200	Calm	-	76	90	1014		Clear		Calm	Labu Island
		1800	NNW	12.0	80	91	1011.5		Clear		N 11	Labu Island
•		<u>26</u> 0630	W	6.0	69	84	1012		Clear		Calm	Labu Island
	•	1200	ESE	4.0	73	91	1014		Some haze Clear		SE ½!	Labu Island
·		1800	ENE	4.0	81월	89	1011		Clear		E½! 1'Swell	Labu Island
	•	<u>27</u> 0600	ene	6.0	80	85	1009		Λs	1	Calm	Labu Island
e e		1800	SW	6 <b>.</b> 0	78	89	1008		Λc.	3	SW ½!	Port Site
		<u>28</u> 0600										Dont Cito
•		0600 1400	nne nne	4•0 5•2	80 80½	90½ 84	10 <b>09</b> 1008		Clear Clear		Calm Calm	Port Site Port Site
	_	1800	NW NW	<i>5•2</i> 4•0	81	902	1010		Clear		NE½ 1 1 Swell	Little Island
		1000	7484	4•∪	٠,	וע	.0.10		○∓ GmT		TIPS . L.DMCTT	mader append
		•										
4.	•											
¥												

•	Mar•h	Wd	Ws	tw	td	Pp	Sea t	C1 t	Cl a	Sea & Swell	Position
	1 0600							an.		Clair	Little Island
:		N	7.0	80½	84 91	1010		Clear with		Calm	Little Island
	1300	NW	2•5	79	91	1010		some cu of f	W.	Calm	Little Island
	1800	NW	3 <b>.</b> 0	80	9 <b>1</b>	1009		Clear		NW ½!	Turtle Island
	<u>2</u> 0600	N	9•8	81	85	1009		Clear with s		Calm	Turtle Island
•	1330	N	6.0	<b>7</b> 9	85	1010		Clear with s cu nim on We horizon.		NE ½ t	Observation Island
	<u>3</u> 0600	NE	12.2	79	84	1012		Cu	5	NE ½	Observation Island
	1930	SE	13•6	80	84	<b>1</b> 011		Λ cu Cu•	2 3	E - 11	Observation Island
· · ·	0600 7	E	8.0	76	83	1009		Clear	-	Calm	Observation Island
	1200	E	14.0	80	89	1013		Cu	6	NE 3	Craggy Island
	2000	Light Δi	rs	76	82	1013		(Storms, wi	nds to 2	N.E. 30 knots in Calm	n afternoon). Centre Island
•	<u>5</u> 0600	SSE	11.0	77	82	1013		Cu	2	SE ½!	Centre Island
	1300	ESE	13.0	<b>7</b> 8	86	1013		Air Cu.	2 2	(1500 sharp, s SE 2½:	squall NE) Centre Island
	<u>6</u> 0630	E	10•2	71	83	1009		A Cu Cu	5 2	ENE 3	Fantome Point
(		<b>W</b> an <b>i</b> ng w	inds W to	SW to	25 kno	ts with	driving	air.			n n
•	1800	SW	12	<b>7</b> 5	77	1011		Cu	10	W2! Steady win	nd Fantome Point
•	Z <sub>0600</sub>	SE	3 <b>•</b> 4	76	78	1011		(Storm) Cu	1	Calm	Fantome Point
	1200	E	15.0	78	83	1007		Cu & Acu.	5	E 28	Observation Island
	1800	ENE	5 <b>•2</b>	77	<b>8</b> 5	1006		Cu & Acu.	9	E 2	Brown Island
7 A	<u>8</u> 0600	S	6.0	78	80	1007		Clear	•	Calm	Brown Island
	1200	E	2•6	<b>7</b> 7	86	1009		Cu Nim	2	$N_{Z}^{1}$ ! - 1'Swell	Turtle Island
	1800	NE	Lt.airs	77	82	1007		Cu Nim	8	Calm	Centre Channel
•	<u>9</u> 0600	E	4	78	81	1008		Strata Cu N <b>i</b> m	3	Calm	Centre Channel
	1200			Sou	nding /	lpproach	es				
: :	1800	E	1	77	82	1007		Strata Cu Nim	9	Calm	Turtle Island
	<u>10</u> 0600	S	2•3	77	81	1007		Cu	3	Calm	Turtle Island
	1200			Sou	nding /	Approach	es				
•	1800		5 <b>.</b> 6	78	86	1006		Cu Nim	1	Calm	Centre Channel
•	11 0600	E	Lt.airs	65	71	1007		Clear		Calm	Centre Channel
	1200		Lt.airs	76	90	1006		Clear		Calm	Black Graggy
	1800		4	77	85	1007		Clear		6" chop NE.	Port Site
* * * * * * * * * * * * * * * * * * *	12 0600	Calm		78	81	1007		Clear		Calm	Port Site
	1200	SE	Lt.airs	79	86	1009		Clear		Calm	Centre Channel
•	1800	NE	2	78	86	1006		Clear		Calm	Centre Channel
•											

March	Wd	Ws	tw	td	Pp	Sea	t	C1 t	Cl a	Sea & Swell	Position
13 0600	N₩	Lt.airs	<b>7</b> 5	82	1007			Clear		Calm	Centre Channel
1200			Sound	i <b>i</b> ng	Approache	es					
1800	NE	2•3	78	85	1005		*	Clear		Calm	Wheatley Island
<u>14</u> 0600	NE	Lt.airs	77	82	1006			Clear		Calm	Wheatley Island
1200					Approache	es					
1800					Approache						
			MINOCI	11112	Appi odeni	CD					
15 0600			Sound	ing	Approach	es					
1200		•	Sound	ding	Λpproach	es					
1800			Sound	ding	Approa <b>c</b> he	es					
<u>16</u> 0600			Soun	ding	App <b>roac</b> he	es					
1200			Sound	ding	Approach	es					
1800	NE	9.0	78	86	1006			A Cu	9	E 1:	Port Site
<u>17</u> 0600	SE	9•0	79	82				Clear	•	SE ½!	Port Site
1200	E	15.0	-	***	1008			Cu.	5	E 3!	Centre Channel
1800	E	9•0	74	81	1006			A Cu.	6	E 1	Port Site
<u>18</u> 0 <b>6</b> 30	SE	10.0	74	82	1008			Cirius	9	SE ½!	Port Site
1200	SE	14.0	72	83	1007			Cu N <b>i</b> m Cu	8 1	SE 2	Port Site
1800	E	6•0	<b>7</b> 2	87	1005			Cs A Cu	4 2	SE ½	Port Site
<u>19</u> 0600	Ca <b>l</b> m	•	77	84	1008			Clear	***	Calm	Port Site
1200	Light at	irs	78	85	1009			Cu	1	Calm	Port Site
1800	N	8.0	<b>7</b> 5	<b>8</b> 5	1004			Clear		Calm	Port Site
<u>20</u> 1200	NE	7.0	78	86	1007			Cu	6	Calm	Port Site

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DIAGRAMMATIC PLAN OF TRIANGULATION