

C.S.O.

NAT/GEO/1#16

1 7 1 2

(Formerly)

FIDS 7

1 7 1 2

SUBJECT:

HYDROGRAPHIC SURVEY.

Rm 1112

1712

CONNECTED FILES.

NUMBER AND YEAR.

FIDS 7

Hydrographic Survey

D/16/58

Hydrographic Survey of South Georgia.

119/37
 4 MAY 1955
USE OF M/L "ALERT" FOR SURVEY.

I understand that on their forthcoming cruise H.M.S. "Burghead Bay" hopes to complete a small local survey in the Speedwell Island area. These small surveys are very useful to the local sailors, and I would like to encourage the Royal Navy to undertake more - if one were done by each H.M. Ship visiting the Colony it would be ideal. So far St Austell Bay is the only ship to assist in this way: they surveyed the entrance to Salvador Waters. To do so, the "Alert" was loaned to the survey party for a week, and without it the work would have been virtually impossible.

The "Alert" is again required for the intended survey by H.M.S. "Burghead Bay", although on this occasion I do not consider that her presence is vital: it would merely make the operation easier. The Navigatin Officer has requested that she be loaned by Government, and I have told him that I would let him know by the end of the week what the chances are.

The position is that if we loan the "Alert" for this work I shall have to be away with her for a fortnight while the work is in progress. The Coxswain cannot very well be expected to sail her to Speedwell Island - a distance of 100 miles - he is still very young and relatively inexperienced, and as his wife is at present pregnant, I consider that asking him to do so would be expecting too much from him. The Skipper of the "Philomel" is the obvious choice as his ship is laid up, but unfortunately he is not prepared to undertake the operation as he does not feel capable of carrying it out successfully. I do not consider that the "Alert" should be entrusted to an R.N. crew, who do not possess local knowledge. A similar situation arose during the previous survey, when I had to take the "Alert" out and back to Salvador Waters. But on that occasion the problem of deciding where I was best employed was simplified by the fact that the survey of the entrance to Salvador Waters was of greater potential value than the one now proposed.

In the present case, only the ketch used by the Speedwell Farm will benefit directly: but as mentioned earlier, it would be a good thing to encourage the Navy to do these small surveys for us. If I may suggest a possible line of approach, it would be to encourage the frigate to carry out the work, if possible without the "Alert", but if they regard it as impossible without her, then it is probably worth giving way.

So far as I am concerned, I have no objections to going with the "Alert", and as I have just held the fort with the flying for a fortnight on my own, it could be argued that it is now Kerr's turn. Against this, May is usually a busy flying month - there is a Ball at the end of it - and we already have over 100 bookings for the month. If bookings continue at the present rate it will take both pilots all their time to keep pace with them. The decision therefore must be one thing or the other.

John L. Luchin

Reply 12.0.6

A.C.S.

- 1). The answer is, in the circumstances, no
- 2). I have discussed the matter with Commander House who is in agreement with the decision in view of the facts.
- 3). Commander House is considering alternatives.
- 4). For record purposes p.c. advises Mr. Thurston accordingly.

A.C.S. 5/5

FIDS 7.

16th May,

55.

To: The Harbour Master,

From: The Colonial Secretary,

Stanley.

Loan of m.v. "Alert" for survey purposes.

235 With reference to your Confidential Memorandum on the above subject, I am directed to inform you that the matter has been discussed with Commander Hoare and it has been decided that the "Alert" will not be loaned for the survey. The Commander will consider alternative arrangements if, in the light of the ship's movements, it is decided to undertake a survey.

(Sgd.) A. G. Denton-Thompson

Colonial Secretary.

Suggested Hydrographic Survey Falkland Islands

Lt. Commander Dickson who has been doing survey work in the Antarctic spoke to me about the proposal to buy a replacement for the "Philomel" equipped with an echo sounder.

2. He states that there is a very great need for a hydrographic survey, the charts being completely out of date and that such a survey would be of benefit to mariners and might make it possible to use water ways which they dare not use at present. He says that there is little likelihood that the Navy will send a survey ship to do this job but they might well provide a party if we would provide the vessel.

3. It is difficult at present to say whether, if we had a ship of the size we want, which did not spend so much of her time being beached, we would be able to spare her for long enough to make such a survey possible but it is desirable that the possibility should be kept in mind.

4. I know there is a file about a hydrographic survey but I believe it refers only to the Antarctic and South Georgia and I do not know whether a hydrographic survey of the Falklands have ever been suggested. If not please start a new file and put up with any connected files.

RHDM/LH
2.5.63

4
S/c I seem to remember a survey being carried out on the northern approaches to Falkland Sound during the early 50's (?) - Lt. Com. Penfold - Have we anything on this file?

5
2.5.63

A.C.S.,

Reference 4. I am afraid I cannot find another survey file. Would the correspondence be in FIDS 7, I rang BAS office for the file, they haven't got it and said it probably went to London with Mr. Green.

41 3/5/63

6.

See / think by minute input to B U d
every 6 months. can be submitted to H E for
information in 10 days
R

6/5/63

BW 16.5.63

7.

4. 2 3 for information. N.F. A handle now
R

16/5/63

~~16.5.63~~
R

BW 30.11.63
BW 30.6.64

8

J.H.

Co. 3 for information R

3.7.64

Noted. p.a.

W1 3.7.64

DECODE.

TELEGRAM SENT.

From SECRETARY OF STATE to GOVERNOR

Despatched: 4/2/66

Time :

Received :

Time :

IMMEDIATE

CONFIDENTIAL

No. 16

Foreign Office telegram 89 to Buenos Aires repeated to you.

U.S. Navigational Aids Station.

Ministry of Defence are anxious to reply to United States Navy as soon as possible in view of latter's wish to send survey team before the end of the southern summer and bearing in mind infrequency of transport to and from South America.

Aires

2. Buenos/reply will be repeated to you but if general view including yours were favourable to preliminary survey, at least, grateful suggestions earliest suitable dates in remainder of southern summer.

CYPHER "E": EB



DECODE.

TELEGRAM SENT.

From GOVERNOR to SECRETARY OF STATE

Despatched: 4/2/66

Time :

Received :

Time :

CONFIDENTIAL

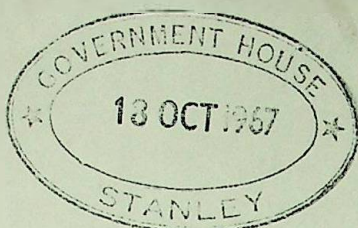
No. 16

9 Your telegram 16. Foreign Office telegram 89 to Buenos Aires no trace here. Grateful repeat.

CYPHER "E": EB



Pa



*CS. Now returned to 12
Secretary for filing
please 6/11/67*

General and Hydrographic Instructions for

Lieutenant P. G. Odling-Smee, RN, HMS PROTECTOR 1967/68

*TV pa
Si
6/11*

You are to embark in HMS PROTECTOR in September 1967, as required by the Commanding Officer of the ship, with the necessary surveying instruments, stores, books and stationery for three months' detached surveying work in the Antarctic.

2. You are to work under the direction of the Commanding Officer, HMS PROTECTOR, in undertaking the attached Hydrographic Instructions and are to assist and advise him as required in the collection of oceanographic and bathymetric data.

3. Appendix IV lists various items of charting information requiring investigation or confirmation, most of them near routes expected to be taken by HMS PROTECTOR. While it is unlikely that time will be available for many methodical investigations, in many cases soundings obtained merely while crossing the reported position of the feature will be of value in assisting to confirm its existence or otherwise. It should be borne in mind that Great Britain has accepted primary responsibility for examining reported dangers in the area southward of the Falkland Islands and between longitudes 30°W. and 75°W., and it is highly desirable that some progress should be reported each year.

4. You are, in general, to take every opportunity of improving Admiralty charts and Hydrographic Department publications, and of assisting the work of the British Antarctic Survey.

5. You are to report your proceedings and intentions to Hydrographer as opportunity offers, submitting your reports through the Commanding Officer, HMS PROTECTOR, when borne in that ship.

6. Receipt of these instructions is to be acknowledged.

G. S. RITCHIE

HYDROGRAPHER OF THE NAVY
(H.23/67)

19 September 1967

Copies to:

- His Excellency The Governor of the Falkland Islands
- The Commander-in-Chief, Western Fleet
- The Director, British Antarctic Survey
- The Commanding Officer, HMS PROTECTOR
- The Master, RRS SHACKLETON
- The Master, RRS JOHN BISCOE

II. When you have noted, would you please pass back to O/C RRS to see.

C.S. As HMS Protector will be engaged in survey work in November & December in Falkland waters, I would be glad if you would arrange to notify farms concerned at an early date, so that news can spread ~~the~~ around. Farms mainly concerned are FIC, Packer, Chantier, Pebble, Port Howard, San Carlos, Port San Carlos. Once managers have had letters, an item could be included in weekly news bulletin. 6/27/10/67

GW/CCB(N)16

*W!
29/10*

General and Hydrographic Instructions for Lieutenant P. G. Odling-Smee, RN

HMS PROTECTOR - 1967/68

H.I. No.	Locality and Name	Pinked Chart	Scale	Remarks	Render as
1	Atlantic and Antarctic Oceans Oceanographic Observations	2127	-	<p>(a) Passage soundings are required whenever possible and, where a choice of route exists, you should offer advice to the Commanding Officer, HMS PROTECTOR, as to where data will most usefully supplement that already shown on the Master Oceanic Sounding Sheets held by you. Appendix IV gives details of some vigias near HMS PROTECTOR's route which are worthy of investigation.</p> <p>(b) You are to be prepared to advise the Commanding Officer on the requirements for the following data and, while on board, assist in its collection. DCI 1131/65 refers.</p> <ul style="list-style-type: none"> (i) Continuous measurement of sea surface temperature. (ii) Bathythermograph dips. (iii) Deep scattering layer observations. (iv) Current observations. (v) Swings for variation. (vi) Secchi Disc observations. (vii) Special observations in the Antarctic and sub-Antarctic convergence as required in Appendix V. 	1/1,000,000 or 1/250,000 Plotting Sheets
2	Falkland Islands - <u>Falkland Sound</u>	1354a	1/50,000	Sounding in the pinked area is to be progressed from the northern end of the area and the fixing of the coastline remaining from 1964/65 is to be completed.	Final Tracing

/H.I. No.3 ...

H.I. No.	Pinked Chart	Scale	Remarks	Render as	
3	Falkland Islands - <u>North-West Passage</u> - <i>Pebble Island</i>	1354a	1/15,000	The pinked area is to be surveyed to make the passage safe for shipping. At least one dangerous rock is known to exist in the passage. Tidal streams of up to 8 or 10 knots may be experienced.	Final Tracing.
4	Falkland Islands - <u>Chartres River</u>	1354a	1/25,000	The river is to be surveyed from its mouth to the settlement at Chartres.	Final Tracing.
5	South Orkney Islands - Approaches to Coronation Island	1775	1/50,000	<p>The inshore areas which cannot be surveyed by ship are to be progressed by boat. In the area just west of Signy Island the basic sounding is complete, but interlines and examinations are outstanding.</p> <p>While helicopter assistance from HMS PROTECTOR is available, priority is to be given to extending survey control round Return Point and connecting Powell and Laurie Islands to Coronation Island.</p>	Final Tracing.
6	South Orkney Islands - Sandefjord Bay	1775	1/25,000	The pinked area is to be surveyed. Sandefjord Bay and the bay north-west of Monroe Island (Larsen Is.) are occasionally used as anchorages.	Final Tracing.
7	South Shetland Islands and Bransfield Strait	3205	-	<p>The following work should be undertaken as opportunity offers, and the Commanding Officer, HMS PROTECTOR, should be advised accordingly:</p> <p>(i) Fixing and delineation, or disapproval of the features (a) to (f) circled in red. Details of these changes are contained in Appendix IV.</p> <p>(ii) Soundings on the scale of chart 3205 anywhere in the southern part of the Bransfield Strait and particularly between Cape Wollaston and Hope Island. Delineation of the 100-fathom line is especially desirable.</p>	<p>1/250,000 Plotting Sheets</p> <p>Tracing to fit chart 3205.</p>
8	Graham Land - Anvers Island - Southern Approach to Arthur Harbour	3572	1/25,000	The pinked area is to be surveyed to provide a safe approach to Arthur Harbour. The anchorage most used is the bay north-east of Torgersen Island. This survey was started in the 1966/67 season.	Final Tracing /H.I. No.9 ...

H.I. No.	Locality and Name	Pinked Chart	Scale	Remarks	Render as
9	Graham Land - (a) Stray Islands to Detour Island (b) Investigations in vicinity of French Passage	3572	1/50,000	(a) The pinked area is to be surveyed to provide an alternative channel parallel to the Lemaire Channel and Penola Strait. (b) Reported rocks circled in red are to be delineated or disproved. These were charted from air photographs used for mapping purposes.	Final Tracing
10	Graham Land - Cape Kater Area Pendleton Strait Area			As far as possible the requirements for connecting triangulation schemes in the Pendleton Strait are to be progressed. Any further triangulation/trilateration work in the Cape Kater area required by the Directorate of Overseas Surveys is to be undertaken as opportunity offers. Data should be rendered to DOS with copies to Hydrographer.	
11	Tristan da Cunha	1769	1/12,500	The pinked area is to be surveyed on the scale indicated. Sketch survey methods may be used and a larger scale chosen if more convenient. If time is short, effort should be concentrated on examining the anchorage area inside the 20 fathom line, where isolated shoals may exist following the 1961 eruption. The limits of the lava flow at the high water line should be delineated. A copy of a recent report by HMS KENT, with photographs, is attached.	
12	Antarctica - Shore Magnetic Observations			H, Z and D observations are required, as opportunity offers, on the following islands:- (i) South Georgia (ii) South Sandwich (iii) The islands off the mainland of Graham Land (iv) Deception (v) <u>Falklands</u> (vi) South Orkneys (vii) Tristan da Cunha (viii) Ascension Island (ix) St. Helena	

/Whenever ...

H.I. No.	Locality and Name	Pinked Chart	Scale	Remarks	Render as
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12 (continued)

Whenever possible, existing stations should be recovered and re-occupied; where this is not possible, a new station should be selected as close as possible to the original station and a new Description prepared. Descriptions of all known stations in the area are attached.

New sites selected should be chosen with the following criteria in mind: repeatability, likelihood of probable visits in future seasons, freedom from artificials etc. In addition, the site should be magnetically flat. A possible test for this is that the central position and four sub-positions at 100 feet radius should lie within 25 gamma in H or 50 gamma in Z or 5 minutes in D. At the central position, Z should be within 10 gamma at heights within one foot of the observing height.

A new station should be established on South Georgia and an effort made to confirm or disprove the 1200 gamma in Z discrepancy found in April 1966.

Stations occupied in the 1965/66 season need not be re-occupied.

Every opportunity should be taken to re-calibrate your instruments at the BAS magnetic observatory in the Argentine Islands. The above programme may be modified in discussion with the Officer in Charge of the observatory if this appears desirable.

Descriptions of stations will be supplied.

Appendix I

Tidal Data

HMS PROTECTOR, 1967/68

- H.I. 2. Chart Datum at Great Island is:-
17.08 ft. below top of bolt set in cement at SE corner of shearing shed close NW of jetty in bay on E. coast of Great Island
or 13.65 ft. below BM cut in NE corner of house 200 yds. SW from jetty.
- H.I. 3. Chart Datum should be established at 4.0 ft. below MSL. See Note.
- H.I. 4. Chart Datum should be established at 4.4 ft. below MSL. See Note.
- H.I. 5. All deep soundings may be arbitrarily reduced by one fathom.
For work in the western sector Chart Datum should be transferred to Sandefjord Bay or Larsen Islands from Borge Bay, Signy Island.
For work in the eastern sector Chart Datum should be transferred to Laurie Island.
Chart Datum at Borge Bay, Signy Island is:-
16.20 ft. below BM cut in NW support of plastic laboratory and Base Hut at Berntsen Point
or 8.71 ft. below top of boulder in beach on HW line 25 ft. NW of Base Jetty. Rock is painted yellow on top with "DATUM" on its side.
- H.I. 6. If practicable, Chart Datum should be transferred to Sandefjord Bay or Larsen Islands from Borge Bay, Signy Island. See H.I. 5.
If this is not practicable, Chart Datum should be established at 4.5 ft. below MSL.
- H.I. 7. All deep soundings may be arbitrarily reduced by one fathom. Shoal soundings should be reduced by predicted tidal heights using form HD 289.
- H.I. 8. Chart Datum was established in March 1967 at Port Arthur as 3.5 ft. below MSL.
- H.I. 9. Chart Datum should be established at Port Circumcision at 3.2 ft. below MSL and at Port Charcot at 3.4 ft. below MSL.
- H.I. 11. Chart Datum should be established at 1.6 ft. below MSL. See Note.
- NOTE. In the areas of H.Is 3, 4 and 11 no tidal data is held in the Department. You should therefore obtain continuous observations for as long a period as possible, not exceeding one month, in these areas. In any other area where no data is given in Admiralty Tide Tables or the data is incomplete, continuous observations are needed, should the opportunity arise. A Foxboro-Yoxall Portable Automatic Tide Gauge should be collected from the Department to enable these observations to be made. The raw observations should in all cases be rendered for analysis in the Department.

APPENDIX II

SAILING DIRECTIONS

VIEWS

There are no specific requirements for views, but opportunity should be taken to check the existing views in Antarctic Pilot, and obtaining any new ones where they are considered useful.

SAILING DIRECTIONS

Particular attention should be given to the dates on which passages become open or closed due to ice conditions.

APPENDIX III

WRECKS

H.I. No. 5

60°42'43"S., 45°39'38"W. TIAGA, whale factory ship, blown ashore in a gale about 1913. Charted as stranded wreck and consists of boilers only.

APPENDIX IV

<u>List No.</u>	<u>Date/Ship</u>	<u>Position</u>	<u>Details</u>	<u>Office Ref.</u> (<u>Largest Scale Chart</u>)	<u>Remarks</u>
1	1962 MV Clyde Crusader	33°47'N 14°23'W	47 fms.) } On Seine } Bank	H.2065/60 (3848)	Additional soundings over Seine Bank would be of value.
	MV Breckon Beacon	33°52'N 14°18'W	66 fms.)		
2	1959 RFA Orange- leaf	29°35'N 28°58'W	147 fms. Clear E/S trace shows separate bank 22 miles 245° from Grosse Meteor Bank.	H.5661/59 (1)	New bank to be delineated/confirmed - position checked.
3	-	13°30'N 59°20'W	Blank area NE of Barbados on chart 2485.	- (2485)	Any soundings through this area would be useful. Render on scale of the chart.
4	1881 "Nichteray"	5°05'N 46°40'W	52 fms. reported. Existence doubtful. 1802 fms. obtained close SW in 1927.	IHB 58 (520)	Further soundings in vicinity would be valuable.
5	1959 US N to M.	0°12'N 41°12'W	60 fms. Reported.	H.3370/59 (3940)	Further investigation & soundings required.
6	1942 PACIFIC STAR	20°34'S 34°50'W	19 fms. (Unexamined) on Davis Bank.	H.3875/42) (529)	Searched for by HMS OWEN in 1960; bank was delineated but least depth was not established.
	1965 Brazilian N to M.	As above	10 fms. 5 feet.	H.2507/65)	
7	1958 Brazilian N to M.	22°34'S 38°20'W	32 fms. The 35 fms. bank charted a few miles ENE was reported in US N to M.	H.902/58 (530)	Further investigation or soundings in vicinity of both banks would be useful.
8	1907 La Jour d'Auvergne	41°53'S 50°25'W	69 fms. (E.D.). Repd. to be part of a large bank surrounded by dis- coloured water. Not found by RRS DISCOVERY II in 1930.	H.815/30 (2202B)	Very doubtful but not yet disproved.
9	1817 & 1884 L'Alerte & others	52°10'S 64°36'W (P.D.)	"Arrecife Aguila". Re- ported reef with sea always breaking over it.	IHB 34 (1284)	Existence doubtful but confirmation required. Any soundings in area would be of use.

<u>List No.</u>	<u>Date/Ship</u>	<u>Position</u>	<u>Details</u>	<u>Office Ref.</u> (<u>Largest</u> <u>Scale</u> <u>Chart</u>)	<u>Remarks</u>
10	1965 Eltanin	57°19'S 66°57'W	Depth of 180 fathoms apparently the top of an extensive bank with depths of less than 1000 fathoms extending 10 miles in a N-S direction.	H2806/65 (2202B)	Research ship report. Soundings on lines about 3 miles apart in N-S direction are desirable to delineate the bank.
11	1965/66 Various	56½° S 70° W	The area within 20 miles either side of a line joining positions 57°00'S., 69°00'W and 56°00'S., 72°00'W is one of rugged topography where existing soundings from different sources disagree markedly.	(539) (1373)	Any soundings within this area would be of great value.
12	1899 French Report	Between 45° & 49°S and 27° & 35°W	Extensive bank with less than 25 fathoms reported.	IHB 37 (2202B)	Very doubtful and already partly disproved. Further soundings would be useful.
13	1966 US Chart	37°27'S 14°22'W	203 fms. reported.	H.3334/65 (2202A)	Investigation required.
14	1965 MV Grinton	34°00'S 2°26'W	127 fms. reported. An apparently good E/S trace indicated a large seamount.	H.3334/65 (2202A)	Further investigation needed.
15	1966 SS Robin Gray	26°08'S 6°30'E	63 fms. reported. There have been three other reports of soundings less than 300 fms. in the vicinity since 1947.	H.399/67 (1013)	Regular examination required but any soundings would be useful.
16	1964 US N to M	13°01'S 6°02'W	80 fms. reported.	H.3436/64 (2202A)	Investigation required.
17	HMS PROTECTOR	08°57'N 21°08'W	375 fms.	-	These banks require to be delineated.
	CS TRANS- MITTER (1928)	7°52'N 21°47'W	567 fms.	H.7059/28	
	HMS JAGUAR	7°10'N 22°30'W	670 fms.	H.2329/65 (367)	Soundings would be useful.
	Various	09°00'N 21°00'W. (approx.)	Various shoal soundings as shown on chart 4011.	-	

<u>List No.</u>	<u>Date/Ship</u>	<u>Position</u>	<u>Details</u>	<u>Office Ref.</u> (<u>Largest Scale Chart</u>)	<u>Remarks</u>
<u>H.I. No. 7 of 1967/68</u>					
18	1928 CHANTI- CLEER	63°32'S 63°05'W	Williams Rock, position approx., repd. originally (3205) as having "a great deal of berg ice about the rock". Not seen by numerous vessels in the vicinity.	14B 39E (3205)	Very doubtful but worth keeping a look out for. H.I. No. 7(a).
19	HMS PROTECTOR	63°26'S 63°27'W	20 fms., echo sounding.	K.3334 (3205)	Bank in vicinity needs to be delineated and least depth established. H.I. No. 7(b).
20	1963 N.K.	62°59'S 63°25'W	Soundings of 23 and 20 fms. Argentine Notice, no details.	(3205)	H.I. No. 7(c).
21	1930 RRS DIS- COVERY	62°10'S 60°11'W	Rock awash, position doubtful. No other details.	IHB 39H (1774)	H.I. No. 7(d)
22	1964 Argentine N to M.	62°17'.1S 59°49'.4W A subsequent report of which further details are awaited	Rock awash with breakers reported. places rock 1° NNE of this position.	H.2492/64 (1774)	No details. H.I. No. 7(e).
23	1953 HMS NEREIDE	61°56'S 56°45'W	Nereide Patch. Repd. as "a steep-to 40 fms. patch, 2 miles across; soundings all round are between 230 and 280 fms. Shelving rapidly within 2-3 cables to 40 fms. with a 10 fm. pinnacle".	(3205)	Least depth requires to be established. H.I. No. 7(f).

APPENDIX V

INVESTIGATION OF ANTARCTIC AND SUB-ANTARCTIC CONVERGENCES

(See pages 1, and 65 to 67 of the Antarctic Pilot)

The very marked change in the water masses passed through on crossing the Convergence Zones causes phenomena which require investigation both for their own sake and for the sake of the knowledge to be gained of basic mechanisms operating in the oceans.

2. The investigation is required by the Director, Meteorology & Oceanographic Services; the detailed planning of the work and recording of the data is the responsibility of the Ship's Meteorological Officer, but the Surveying Party should give active assistance.

3. The work required includes:

- (a) Investigation of the Sub-Antarctic Convergence during passage to and from Montevideo during the period 28 January/13 February. This discontinuity is likely to be encountered in approximate latitude 40° - 41° S., as a meandering line running WNW-ESE. It is suggested that the position be located on the northward passage and investigated on the return voyage.
- (b) Similar location and investigation of the Antarctic Convergence whilst crossing from Port Stanley to South Georgia and Port Stanley to the South Orkneys.
- (c) Attempt to locate Sub-Antarctic Convergence on passage Port Stanley to Cape Town at the end of the season.

4. Should time not allow detailed investigation by zig-zag on any of the above passages, the actual position of the convergences should be recorded on all occasions by keeping a close watch on the sea surface temperature recorder when in the likely positions of these features. The sea surface temperature record is to be carefully notated with times and dates and cross-referenced to positions and navigational fixes in the manuscript record.

5. The following is an outline of the requirements for detailed investigation:

- (a) A broad zig-zag across the Convergence extending 20 to 30 miles either side, taking continuous temperature and B/T dips at intervals of 3 to 6 miles in order to identify and delineate the zone.
- (b) Following (a) a crossing of the Convergence at right angles making a detailed investigation with B/T dips approximately every half mile.
- (c) During (a), and at the two furthest points from the Convergence reached in the course of the zig-zag, if possible an experiment is to be carried out by strewing a mass of pieces of paper from a helicopter. The paper should take up a pattern dictated by the vertical and horizontal water movement, and this will require to be photographed.

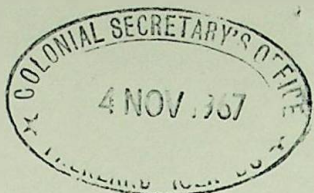
6. The plan below is suggested for a convergence running in direction 080° - 260° ; it should be modified in the light of circumstances at the time:

- (a) 24 miles before expected position of Convergence - Steer 170° ; take B/T dips every 30 mins.
- (b) Note approximate crossing of Convergence from Surface Temperature.
- (c) 30 miles after point (b) - A/c 080° ; carry out paper experiment.
- (d) 12 miles after point (c) - A/c 020° ; reduce B/T timing to every 15 mins.
- (e) 54 miles after point (d) - A/c 080° ; increase B/T timing to every 30 mins; carry out paper experiment.
- (f) 12 miles after point (e) - A/c 170° ; rapid B/T dips approximately every $2\frac{1}{2}$ mins.
- (g) Continue rapid B/Ts on course 170° until 12 miles south of the Convergence.

/7. Records ...

7. Records

- (a) Form H560 B/T Log Sheet, columns 1 to 26 should be completed for all observations.
- (b) Sea Surface Temperature record, fully notated.
- (c) Manuscript report and navigational record with photographs etc.



13

Royal Naval Antarctic Survey
Party,
H.M.S. Protector,
B.F.P.O. Ships.

12th. October, 1967.

51 7/11

Dear Mr. Thomson,

I propose to conduct hydrographic surveys in the Pebble Island and Chartres River areas between 2nd. and 29th. December this year, and my intention is to divide the Survey Party into two groups of five, thus running the two surveys concurrently. ¹² But as the job in the Chartres area is bigger than the other I envisage the two parties joining forces in the Chartres River from about 19th. to 29th. December. The Ship's Flight, consisting of a team of eight, will probably be living ashore in the general area between the approximate dates of 4th. to 8th. and 19th to 29th December, assisting the Survey Party. ¹ x

I am thus writing to you, firstly to let you know our intentions (which can be seen in official form in my General and Hydrographic Instructions, forwarded to His Excellency the Governor) and secondly to enquire about possible accomodation for parties. I understand that Pebble Island is not owned by the Falkland Islands Company but the Chartres River area is, and so I have written separately to Mr. Young about Chartres.

³ x We are capable of living entirely independently, but I wonder if you would be kind enough to find out if it is possible for us to sleep in the Bunkhouse at Pebble Island, or, perhaps, just eat there if sleeping is impossible owing to sheep shearing occurring at that time. I certainly would be most grateful if this could be arranged, but I fully understand if it is difficult, and we certainly do not ⁴ want to inconvenience anybody. x

There is one other point, and that is the Flight were ⁴ wondering if they could be accomodated ashore during the periods they will be detached from the ship. They would prefer to live in the Chartres River area, but a total of eighteen, which we would probably be, is rather a lot of us between 20th. and 29th. and over Christmas. x

Please do not bother to reply to this; the mail being what it is, it will not reach me before we arrive at Port Stanley on November 27th. Perhaps I could call in and see you when we arrive.

Yours

Sincerely

(P.G. ODLING - SMEE)

Lieutenant, R.N.

1712

Ref: ~~0625/XVI~~Colonial Secretary's Office,
Stanley, Falkland Islands.

30 October 1967

Dear Sirs,

Hydrographic Survey in Falkland
Islands Waters by H.M.S. Protector

During November and December H.M.S. Protector will be engaged in survey work locally. The main work will be concentrated in the Falkland Sound, North-West Passage and the Chartres River which, I understand, is to be surveyed from its mouth to the settlement at Chartres.

The number of persons working on the survey will be small and they will be self contained, and I trust that you will have no objection to their appearance upon your local scene.

Yours faithfully,

W. H.

(W.H. Thompson)
COLONIAL SECRETARY

R.G. Vinson Esq., J.P.,
Camp Manager, *Reply at 15.*
Falkland Islands Company Limited,
DARWIN.

The Honourable
Mr. G.C.R. Bonner M.L.C., J.P.,
Manager,
SAN CARLOS.

A.B. Monk Esq., J.P.,
Manager, *Reply at 14.*
PEBBLE ISLAND.

A.C. Miller Esq.,
Manager,
PORT SAN CARLOS.

W.R. Luxton Esq.,
Manager,
CHARTRES.

R. Cockwell Esq.,
Manager,
FOX BAY EAST.

D.M. Pole-Evans Esq., J.P.,
Manager, *Reply at 16.*
PORT HOWARD.

pmc.

fa

14

DEAN BROTHERS LIMITED

CHAIRMAN: A. G. BARTON. DIRECTORS: H. C. HARDING, D. M. POLE - EVANS, D. BARTON.

TELEGRAMS: "MITERJACK PORT STANLEY"

PEBBLE ISLANDS.
W. FALKLAND ISLANDS.
November
4th ~~OCTOBER~~ 1967.

W.H.Thompson Esqre.,
Colonial Secretary.

Dear Mr Thompson,

With reference your letter 0625/XV1, ¹¹ dated 30th Octr and concerning forthcoming Hydrographic Survey work by H.M.S. Protector.

Reply 18

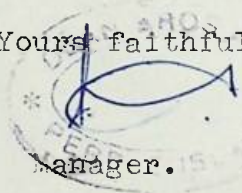
I have absolutely no objections to a party coming to these Islands for that purpose, indeed, subject to the intense demands which might be made upon our labour at that time caused by Lambmarking and shearing, I would be prepared to assist them in any way possible.

I notice you say the party will be small and self contained, so I suppose that means they either Camp out with their own Stores Etc., or, return to the Ship every night. I would ask you to particularly impress upon the all concerned of a/ The very great danger of severe damage being done if any fires are kindled on the Tussac Islands at North West Passage and infact on any of our ground at all. The soil even on the Larger Islands is composed of a fibrous dry mat of Peat dust and vegetable matter and once alight burns underground to the clay subsoil or bedrock: b/. If they do wish to land large parties for recreation purposes for any reason I would prefer to know about their intentions in advance as Camps with Ewes and lambs are not suitable for this sort of thing.

If Protector herself were going to be in the vicinity while the Survey is taking place they might be interested in getting some Beef. If they wanted this and at the time we were not too involved with shearing, the operation would be very much simplified if they used their Helicopters to assist. The Beef is located on the Outer Islet (Government Island, so called); this has a very great deal of Heavy Tussac and as the Cattle are quite wild after 4 years of freedom it would likely prove impossible to drive them to the beach for killing and loading by Malvinas. If they used their Helicopters we could go there in Malvinas, land a party and shoot the Animals ~~where found~~ where found and the Helicopters could lift them onto Malvinas.

I dont know how many Beef Protector would want, if they wanted any, but if they co-operated in this way we would be prepared to let them have 5 Carcasses for £7-10/- a piece provided they also lifted 3 or 4 for us aboard Malvinas. The Beef should be very good, but as I have not now seen them closeto for over a year I cannot guarantee this. The Island however being thickly covered with Tussac could be expected to produce very fat animals. The ideal time for this operation would of course be just before Christmas but that might not fit in with their schedule of work.

Yours faithfully

 (A.B. Monk)
Manager.

THE FALKLAND ISLANDS COMPANY LIMITED.

Your Ref. 0625/XVI.

DARWIN HARBOUR,
6th. November, 1967.



The Colonial Secretary,
Colonial Secretary's Office,
STANLEY.

Dear Sir,

With reference to your ^{11.}letter dated 30/10/67 re
Hydrographic Survey in local waters, we will be very pleased
to help in any way we can.

Yours faithfully,

A handwritten signature in blue ink, which appears to read "P. W. Ince".

Camp Manager.

A handwritten mark in blue ink, resembling a stylized letter 'A' or the number '4'.

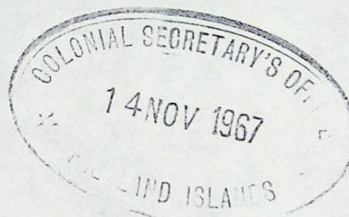
16.
JAMES LOVEGROVE WALDRON.
LIMITED.

Telegraphic Address:
HOWARD. FOXBAY, FALKLANDS.
BENTLEY'S CODE USED.

Port Howard.
West Falkland Islands.

November 13th. 1967.

The Colonial Secretary,
Stanley.



Dear Sir,

11.
Thank you for your letter of 30th. October explaining the survey work to be undertaken by H. M. S. Protector.

The survey parties will be welcome to work from any of this firms land.

Thank you for forwarding Mr. M. C. Waldron and the writer copies of Mr. Guillebaud's report, this is most interesting and will take a while to digest.

Yours faithfully,

JAMES LOVEGROVE WALDRON LTD.

John Pole-Evans FALKLAND MANAGER

14
Ackd
JA
14.11.67

17 November

67

Dear

I have received an enquiry from Lieutenant Odling-Smee of the naval survey party aboard H.M.S. Protector. He says that he proposes to conduct his surveys in the Pebble and Chartres areas between the 2nd and 29th of December.

He then goes on to say:-

"But as the job in the Chartres area is bigger than the other I envisage the two parties joining forces in the Chartres River from about 19th to 29th December, assisting the Survey Party.

I am thus writing to you, firstly to let you know our intentions and secondly to enquire about possible accommodation for the parties.

We are capable of living entirely independently, but I wonder if you would be kind enough to find out if it is possible for us to sleep in the Bunkhouse at Pebble Island, or perhaps, just eat there if sleeping is impossible owing to sheep shearing occurring at that time. I certainly would be most grateful if this could be arranged, but I fully understand if it is difficult, and we certainly do not want to inconvenience anybody.

There is one other point, that is the Flight were wondering if they could be accommodated ashore during the periods they would be detached from the ship."

This is to put you in the picture and test your reactions, but it seems to me that a visit to you from Odling-Smee might well be the best way of tying all this up.

(W.H. Thompson)

A.B. Monk Esq., J.P.,
Manager,
PEBBLE ISLAND.

W.R. Luxton Esq.,
Manager,
CHARTRES.

Yrco.

— Reply at 19

17 November

67

Dear Mr. Monk,

Thank you for your letter of the 4th November upon which I have been sitting waiting for a radio link with H.M.S. Protector. 14

By this same mail you will see another letter from me about the survey party and I think you will agree with me that the best thing is for the officer in charge to pay you a visit on arrival. 17

I will read all the usual riot acts about fires, ewes and so forth.

Your offer of beef will be transmitted.

Yours sincerely,

(W.H. Thompson)

A.B. Monk Esq.,
Manager,
PEBBLE ISLAND.

Reply at 21.

pmc.

R

DECODE.

TELEGRAM.

From Luxton, Chartres

To Colonial Secretary, Stanley

Despatched : 25th November, 19 67 Time : 0900

Received : 25th November, 19 67 Time : 1200

Your letter 1712 17th. Only too pleased to be of any assistance but know you will appreciate that we are in midst of shearing. Agree with your suggestion that visit from Odling-Smee would be the most satisfactory way of finalising arrangements

Luxton

P/L : ER
Intld. H.L.B.

19

C.W.I.
27/11

PUBLIC NOTICE

Survey by H.M.S. Protector

It will be of interest to persons living in the area of the Falkland Sound, North West Passage and Chartres River to know that this year's survey in Falkland Islands' Waters will be organized as follows:-

It will commence on the evening of the 1st of December in the area of the North West Passage, with a party of eight based on Pebble Island. They will be erecting survey flags on Rabbit, Golding and Pebble Islands. During the period 1st to 4th of December H.M.S. Protector will remain in the area.

On the 4th of December a move will be made to the Falkland Sound and on either the 4th, 5th or 6th of December (according to the weather) the party will move to Chartres. Flags will be planted along both sides of the Chartres River in the area of the harbour and on Gidds Island.

On the 20th of December it is expected that both survey parties will concentrate at Chartres, remaining there until the survey ends on the 28th of December.

Colonial Secretary's Office,
Stanley, Falkland Islands.

28 November 1967

Ref: 1712
pmc.

To Be Broadcast to Camp :
Morning and Evening on
Wednesday 29th November and
Thursday 30th November.

pa

DEAN BROTHERS LIMITED

CHAIRMAN: A. G. BARTON. DIRECTORS: H. C. HARDING, D. M. POLE - EVANS, D. BARTON.

TELEGRAM "MITERJACK PORT STANLEY"

PEBBLE ISLANDS.
W. FALKLAND ISLANDS.

28th November 1967

W.H.Thompson Esqre.,
Colonial Secretary,
Secretariat,
Stanley.

SW
4/12

Dear Mr Thompson,

With reference your ¹⁸letter No 1712 dated 17th Inst;
thank you for your information and I note what you say.

I wrote you a detailed reply to the above mentioned letter but as there was no way to get it away from here until now it has become out of date in view of the fact that Lt. Odling Smith will be on the plane which takes this away in. I have therefore destroyed the letter and will make all my points to Odling-Smith when he arrives. There is just one point however which he may not be able to answer, though I imagine the Captain of Protector and Captain Keelan will be able to when they visit by Helicopter shortly. This is the 'Flight' you mention; presumeably they are sepearate to the Survey party.

Reply at 22
As I mentioned in my previous letter, we could accomodate 6 Ratings in the Cookhouse and feed them but they would have to bring their own bedding, we might be able to accomodate 1 Officer and 1 Petty Officer elsewhere in addition; we could not accomodate or board ~~ANYONE~~ from December 21st to December 31st.

Yours sincerely

(A.B.Monk)

5th December, 1967.

21

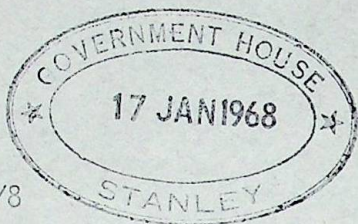
Thank you for your letter of the 28th November: events have now overtaken the correspondence but, even so, your help is much appreciated.

(W.H. THOMPSON)
COLONIAL SECRETARY

pa

A.B. Monk, Esq., J.P.,
PEBBLE ISLAND.

ER



YC 7/8

COMMONWEALTH OFFICE,
Dependent Territories Division,
Curtis Green Building,
London, S.W.1.

28th December, 1967.

Dear Sir,

I have been informed by the Hydrographic Department of the Navy that they are considering the long-term survey programme for 'Endurance' who is to replace 'Protector' for the next southern summer season and they would like to know whether you have any work which you would give high priority. The Hydrographic Department have apparently heard that the Master of the 'Darwin' might have some work he would like done.

I understand that there is no immediate urgency about obtaining this information but the Navy would like to know about any work you have for them before June next year.

Yours sincerely,
A. St. J. Sugg

A. St. J. Sugg

Sir Cosmo Haskard, K.C.M.G., M.B.E.,
Stanley,
Falkland Islands.

Reply at 29.

*C.S. would you please consult Capt Miller
and Lieut Odling-Lums i.d.c*

LA 22/1

27th January, 1968.

The Hydrographic Department of the Navy are now considering the long-term Survey programme for 'Endurance' and would like to know whether you have any work which you would like done together with a note on priorities.

Would you be so good as to let me know.

By copy of this letter I am asking Lieutenant Odling-Smee for anything he would like to say on the subject.

(W. H. THOMPSON)
COLONIAL SECRETARY

Copy to: Lieutenant Odling-Smee R.N.

Captain H. Miller,
R.M.S. Darwin,
STANLEY.

AA

Pa
1

R.M.S. "Darwin".
At Sea.
31st January. 1968.

Chief Secretary.
Secretariat.
Stanley.

Your Ref: I7I2. Dated 27/1/68.

Hydrographic Survey. Falkland Is.

Dear Sir,

I thank you for your letter above.

I append below list of localities where I consider a survey would be desirable. This is in addition to work at present in hand on West Falklands.

Items I should like to see given priority are marked '*'. I would suggest that the most important item be the correction of the north coastline of East Falkland. Possibly this might be done in the Hydrographic Offices in the United Kingdom by utilising the aerial survey and ordnance maps.

Chart Nos. I6I4 & I354b.

Correct coastline Seal Point and insert small tussac Islet.

- * Chart radio masts and indicate lighted ones @ Stanley.

Chart Nos. I326 & I354b.

- * Correct position Cochon Island.

- * Correct position Uranie rock.

Correct coastline in vicinity Green Patch settlement.

Correct coastline in vicinity Johnson Hr. settlement.

Chart Nos. I956 & I354b.

Correct position Patterson Point bridge.

Re-chart isolated patch and limits of main reefs off Kelp Isl.

Chart isolated kelp shoal southward of Little East Island.

Chart Nos. 267I & I354b.

An extension southward of about 2 miles of chart 267I to the approaches to Lively Sound would be useful.

Correct limits of reef off Sal Point (Lively Sound).

Verify positions and limits of reefs off Centre Island.

Insert Bodie Creek bridge.

Insert isolated reef off Goose Green settlement, southward of island in middle of Darwin Harbour.

Chart No. I354b.

Correct coastline of Motley Island.

Correct kelp limit and reefs off Triste Islands.

Insert passage through Triste Islands (approx. 5 fms).

Verify isolated shoal southeastward of Sandy Bay Island.

Correct charting of Halt Island and Bleaker Island and

Chart isolated kelp reefs offshore between Driftwood

Charts Nos. I935 & I354b.

Verify position & limits of Middle Shoal.

Correct reef & coastline vicinity North Arm settlement.

Chart I354a & HMS "Protector" survey chart Eagle Pass

- * Owen Roads, reef from point eastward of George Island settlement to insert.

Soundings to insert in Owen Roads.

Coastline to correct in relation to each other, both

Eagle Channel southward of Annie Island.

Reefs extending northward from Elephant Cays to corre

Chart I345.

Port Edgar. Pinnacle rock (depth 11ft in 12 - 15 fms) to insert approx. 5 cables SSW of Sea Lion Is.

continues

a.

Chart No. I354a.

Isolated kelp reef about 1 mile south of Swan Island Passage to insert.

Smylie Channel. Western entrance. Soundings and reefs to verify.

Chart I874.

Port Albemarle. Insert site of last sealing station in W. Arm.

Delete old sealing settlements.

Port Stephens. Correct reef limits extending eastward from Stephens Bluff.

Chart I354b.

- * North coast of East Falkland to correct for position and distance, from westward of Cape Bougainville to eastward of MacBride's Head. Coast between MacBride's Head and Salvador Water entrance is about 2 - 3 miles longer than charted.

A larger scale plan of Salvador Water entrance would be useful.

Falkland Island Approaches:

For the 100 fathom line, chart No. 2202b is the only current chart available for this, and is not the best scale for use when approaching the Falklands.

"Darwin" uses an obsolete copy of a 'blue-back' chart, issued circa 1939, for this. Over the years we have corrected the position of the 100 fathom line north of the Falklands, between longitudes 57 30 W. to 58 00 W., finding it about 7 miles south of its charted position on this old chart.

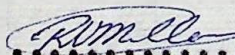
I would also dispute the charting of the 100 fathom line on the route to Montevideo, between latitudes 40 - 41 degrees south and longitudes 56 - 57 degrees west.

Note:

I understand that this may be done, or may have been done, during the current "Protector" survey programme.

I am enclosing an additional copy of this letter also a copy of radar navigational notes for local waters, which Lieutenant Odling-Smee may find useful.

Yours faithfully,


.....
Captain.



26
Royal Naval Antarctic Survey
Party,
Signy Island,

South Orkneys.

16th. February, 1963.

The Colonial Secretary,
Falkland Islands.

Si
28/2

LEADING MARKS FOR NORTH-WEST PASSAGE

a
Enclosed is a form giving the description of the two leading marks on Broken Island. It is recommended that the rear mark is recovered within a year otherwise it may be lost.

2. Copies of this form have also been sent to the Harbour Master, Port Stanley and to the Manager, Pebble Island.

A handwritten signature in dark ink, appearing to read "P.G. ODLING-SMEE", with a long horizontal stroke underneath.

(P.G. ODLING-SMEE)

Lieutenant, Royal Navy.

DESCRIPTION OF TRIGONOMETRICAL STATION

Name of Station Front and Rear Leading Letter _____
Marks.
 General Locality North-West Passage, Broken Island, West Falklands.
 H.M. Surveying Ship Protector Date 5th. January, 1968.

Rectangular Co-ordinates — Units in Metres.
 (not yet computed) E/W (not yet computed) N/S

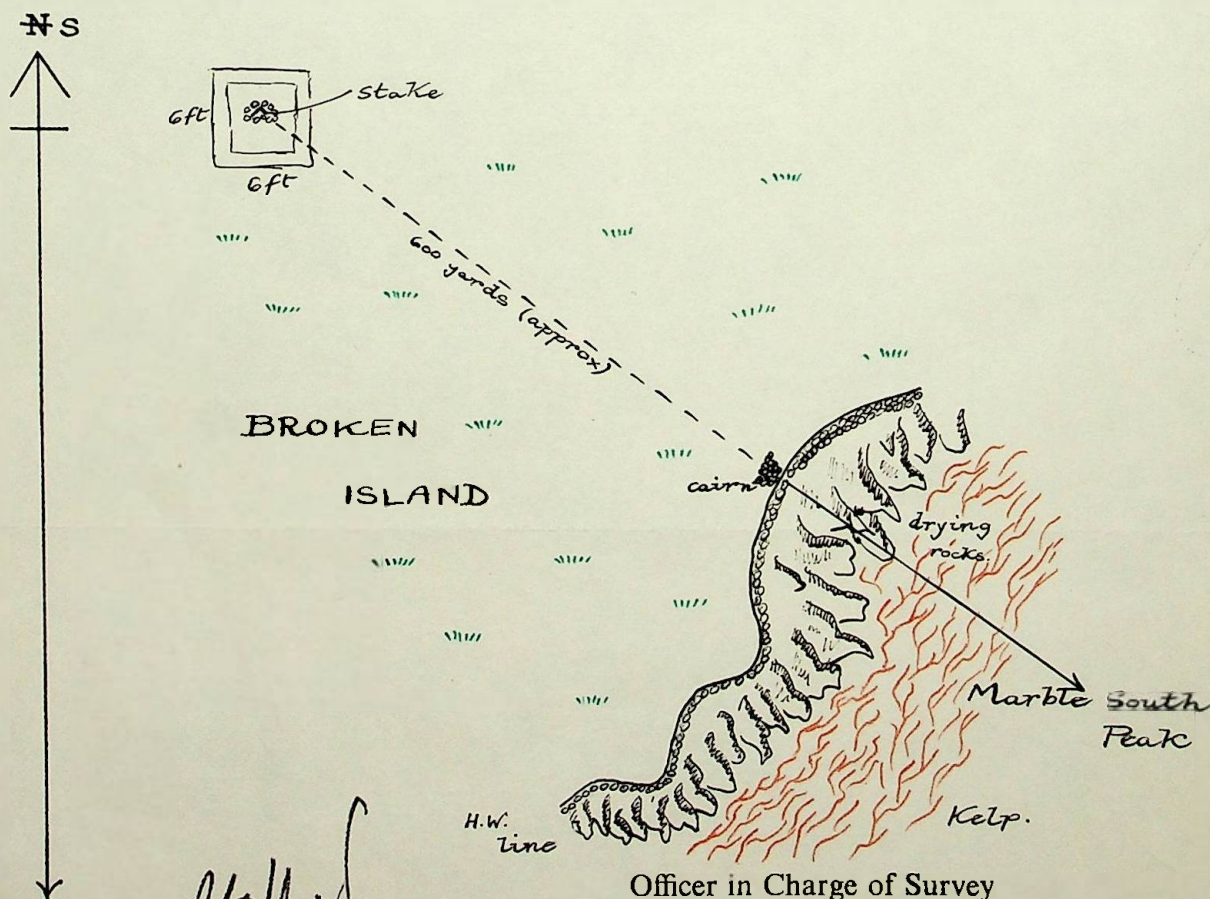
Projection U.T.M. International Spheroid.

Height of Mark in Feet above		Probable life of Mark
Land Survey Datum	M.H.W.S.	Front 10
-----	Front Rear	Rear 1
	0 about 80years

Description Front Mark. The mark is an iron stake driven into the ground, surmounted by a 4 foot cairn, situated on the high water line close to the North-west corner of Broken Island. The cairn is plainly visible from seaward but heavy kelp necessitates a landing 400 yards further south-east.

Rear Mark. The mark is an iron stake driven into the ground and surmounted by a pile of peaty earth. The mound is surrounded by a trench six feet square and about nine inches deep. It is necessary to recover the front mark first and then walk on a line produced from Marble South Peak (Pebble Island) to the front mark for approximately 600 yards. The rear mark is situated close to the ill-defined summit of the island.

Diagram



Described by P.G. ODLING - SNEE

Officer in Charge of Survey
Lieutenant, Royal Navy.

Date 5th. February, 1968.

1712

27

30th April, 68.

Harbour Master.

Colonial Secretary.

c.c. Captain J. Sallis,
R.V. "Forrest".

Leading Marks for North-West Passage.

26A

What is now the situation concerning the recovery of these marks?

(W.H. THOMPSON)
COLONIAL SECRETARY.

Your Excellency,

Please see folios 23, 24 and 25.

Do you wish to reply or shall I deal through routine channels?
I have discussed Captain Miller's letter with Mr. Sollis who agrees with the
suggestions. He has nothing more to add.

51

30th April, 1968.

(W.H. THOMPSON)
COLONIAL SECRETARY.

C.S.

51
11/1

11 May 1968

23.

Would you please refer to your letter YC 7/8 of 28th December 1967 on the subject of hydrographic survey work in Falkland Islands waters.

I now forward the list prepared by Captain R.N. Miller, master of R.M.S. Darwin. This list has been seen by the master of M.V. Forrest, who has no additional points to raise. I am sorry that there has been a time lag in sending the list to you but I see from your letter that you did not expect a reply until about now anyway.

64

A. St.J. Sugg Esq., C.M.G.,
Commonwealth Office

B. 30. 5. 68 (26-7)

CS. for Secretariat filing please

Ln 14/7/70

30A

HYDROGRAPHIC INSTRUCTIONS FOR
LIEUTENANT COMMANDER J.B. DIXON, ROYAL NAVY
HMS ENDURANCE - 1968/69

As officer appointed in charge of surveys in HMS ENDURANCE, you are to undertake the attached Hydrographic Instructions as and when directed by the Commanding Officer, to whom you are to act as advisor in all matters concerning hydrographic and oceanographic surveying.

2. You are to ensure that the necessary equipment, instruments, stores and books required for this work are held onboard.
3. HI No. 10 is the main task of the season, but HIs Nos. 1 and 4 should also be given priority. If ice conditions prevent HI No. 4 being attempted, surveys further north should be progressed as seems most appropriate.
4. In general, every opportunity should be taken to obtain information for the improvement of Admiralty Charts and Hydrographic Department publications, and to further the work of the British Antarctic Survey.
5. When circumstances require and as opportunity offers, you should submit brief reports to Hydrographer, through the Commanding Officer, on progress and intentions with regard to the hydrographic work.
6. Available triangulation data and copies of previous surveys will be supplied separately. You should obtain additional triangulation data from the Director of Overseas Surveys as required.
7. Receipt of these instructions is to be acknowledged.

G. S. RITCHIE

Hydrographer of the Navy
(H. 3026/68)
5th July 1968

Copies to:

The Commanding Officer, HMS ENDURANCE
The Commander-in-Chief, Western Fleet
His Excellency, The Governor of the Falkland Islands
The Director, The British Antarctic Survey
The Master, RRS SHACKLETON
The Master, RRS JOHN BIGSCE

HYDROGRAPHIC INSTRUCTIONS FOR

HMS ENDURANCE 1968/69

<u>H.I. No.</u>	<u>Locality</u>	<u>Pinked Chart</u>	<u>Scale</u>	<u>Remarks</u>	<u>Render as</u>	<u>Quote</u>
1	Deception Island	3202	1/25,000 (but see proviso)	The northern part of Port Foster, in which the main effects of the 1967 volcanic eruption are showing, and where a new island has been reported, is to be surveyed in detail on the scale indicated. Check lines of soundings are to be run over the remainder of Port Foster, and any areas showing appreciable differences from the published chart are to be surveyed in detail. If detailed examinations are made in areas covered by the two inset plans on the chart, the scale of 1/12,500 is to be used.	Tracings	-
2	Western Approaches to the Argentine Islands	3573 & 3572	1/25,000	The object of the Survey is to give a safe approach for big ships to the anchorage 1 mile west of the base, by entering both from the south and west. The area of survey should be extended as necessary to chart a safe approach. Cruise ships as well as Antarctic supply ships are likely to visit this area in the future.	Final Tracing	-
3	South Orkney Islands	1775	(a) 1/50,000	The inshore areas, which cannot be surveyed by the ship, are to be progressed by boat on the scales indicated. In general, priority should be given to the eastern area	Final Tracing	-
			(b) 1/25,000	The pinked areas is to be surveyed. Sandefjord Bay and the bay north-west of Monroe Island are occasionally used as anchorages	Final Tracing	-

<u>H.I. No.</u>	<u>Locality</u>	<u>Pinked Chart</u>	<u>Scale</u>	<u>Remarks</u>	<u>Render as</u>	<u>Quote</u>
4	Marguerite Bay	3571	1/75,000	The pinked area is to be surveyed, priority being given in the order of the numbered sections. Where areas of rock or shallow water are found, the scale of the survey should be increased at the Officer in Charge's discretion.	Final Tracing	-
5	North West Approaches to Grandidier Channel	3572 & 3573	1/75,000	The pinked area is to be surveyed on the scale indicated. Many dangers have been reported to exist in these waters	Final Tracing	-
6	Detour Island to Herald Reef	3572	1/50,000	(a) The object of this survey is to find an alternative channel west of the Lemaire Channel and Penola Strait which are often blocked by ice. The limits of the survey may be varied as necessary to find a channel, and if it materialises that no such channel exists the survey should be abandoned	Final Tracing	-
			As requisite	(b) The rocks (E.D.) circled in red, which were charted from air photographs, require to be accurately fixed, or their existence disproved.	Tracings	-
7	Wilhelm Archipelago	3572	As requisite	The shoal areas indicated are to be examined. Details are as follows: (a) Examination outstanding from 1965 survey, should be extended to 5 cables from the shoal sounding. (b) Isolated sounding, to be examined for least depth. (c) Reported by Argentine N to M, and may indicate lesser depth over (a) above. (d) Reported by Argentine N to M. Isolated depth of 24 fathoms found by RNASP in 1965 about half a mile southwards (e) (f) Not examined by RNASP in 1964-65	Tracings	H4249/65

<u>H.I. No.</u>	<u>Locality</u>	<u>Pinked Chart</u>	<u>Scale</u>	<u>Remarks</u>	<u>Render as</u>	<u>Quote</u>
8	Anvers Island - Southern Approaches to Arthur Harbour	3572	1/25,000	The survey of this area was started by the RNASP in 1966/67 and requires to be completed.	Final Tracing	-
9	South Shetland Islands and Bransfield Strait	3205	-	<p>The following should be undertaken on an opportunity basis:</p> <p>(i) Soundings are required in the Southern part of Bransfield Strait, particularly between Cape Wollaston and Hope Island. Delin of the 100 fathoms line is particularly desirable Lines run by H.S. PROTECTOR in 1965-66 are shown in blue.</p> <p>(ii) The shoals, rocks and vigias circled in red require to be examined. Details are as follows:-</p> <p>(a) "Williams Rock" reported in 1928 as having "a great deal of berg ice about the rock". Not seen since (63°32'S; 63°05'W)</p> <p>(b) 20 fathoms obtained by "PROTECTOR"</p> <p>(c) Reported by Argentine N to M in 1963</p> <p>(d) Reported by "DISCOVERY" in 1930. Position doubtful but no other details</p> <p>(e) Rockwash and breakers reported by Argentine N to M in 1964</p> <p>(f) The least depth is required over this shoal, reported by H.S. NEREIDE in 1953</p>	Tracings	-

<u>H.I. No.</u>	<u>Locality</u>	<u>Pinked Chart</u>	<u>Scale</u>	<u>Remarks</u>	<u>Render as</u>	<u>Quote</u>
10	Graham Land - Cape Kater and Pendleton Strait	-	-	(a) The requirements for connecting triangulation schemes in the Pendleton Strait are to be progressed. (b) Any further triangulation/ trilateration required by the Directorate of Overseas surveys in the Cape Kater area is to be undertaken if opportunity offers.	Data to DOS (Copy to Hydrographer)	-
11	Falkland Islands - Falkland Sound	1354A	1/50,000	Sounding in the pinked area is to be progressed from the north-eastern end. Surveying of the coastline outstanding from 1964/65 (RNASP) is to be completed	Final Tracing	-
12	Atlantic, Pacific and Antarctic Oceans Oceanography and soundings on Passage	-	-	(a) Soundings should be obtained on passage, and routes should as far as possible be chosen to pass through areas where collected soundings on the Master Ocean Sounding sheets are sparse. (b) Appendix I gives details of some vigias near HES PROTECTOR's route which would be worthwhile investigating if opportunity offers. These positions are also shown on the pinked charts. (c) Oceanographic and other observations should be made on passage on an opportunity basis, in accordance with DCI155 of 1968	1/1,000,000 Plotting Sheets 1/250,000 Plotting Sheets As required by DCI155/68	H3232/68 -

<u>H.I. No.</u>	<u>Locality</u>	<u>Pinked Chart</u>	<u>Scale</u>	<u>Remarks</u>	<u>Render as</u>	<u>Quote</u>
13	Antarctic:- Shore Magnetic Observations	-	-	<p>H, Z and D observations are required as opportunity offers, on the following islands:- South Georgia South Orkneys Falklands Deception Any other islands off Graham Land.</p> <p>Whenever possible, existing stations should be recovered and re-occupied; where this is not possible, a new station should be selected as close as possible to the original station and a new Description prepared.</p> <p>New sites selected should be chosen with the following criteria in mind: repeatability, likelihood of probable visits in future seasons, freedom from artificials etc. In addition, the site should be magnetically flat. A possible test for this is that the central position and four sub-positions at 100 feet radius should lie within 25 gamma in H or 50 gamma in Z or 5 minutes in D. At the central position, Z should be within 10 gamma at heights within one foot of the observing height.</p> <p>A new station should be established on South Georgia and an effort made to confirm or disprove the 1200 gamma in Z discrepancy found in April 1966.</p> <p>Stations occupied in the 1965/66 season need not be re-occupied.</p> <p>Every opportunity should be taken to recalibrate your instruments at the BAS magnetic observatory in the Argentine Islands. The above programme may be modified in discussion with the Officer in Charge of the observatory if this appears desirable.</p> <p>Description of stations are attached as Appendix V</p>	Reports to the Royal Greenwich Observatory (Copy to Hydrographer)	H3218/68

<u>H.I. No.</u>	<u>Locality</u>	<u>Pinked Chart</u>	<u>Scale</u>	<u>Remarks</u>	<u>Render as</u>	<u>Note</u>
14	Antarctic and Sub- Antarctic convergence zones	-	-	<p>Investigations are required by the Director, Meteorology and Oceanographic Services, into the phenomena caused by the very marked change in the water masses on crossing the Convergence Zones. (See Antarctic Pilot, pages 1 and 65 to 67). Any work should be carried out on an opportunity basis; detailed planning and the recording of the data should be the responsibility of the Ship's Meteorological Officer</p> <p>The work required includes:-</p> <p>(i) Investigation of the Sub-Antarctic Convergence during passage to and from Monte Video. This discontinuity is likely to be met as a meandering line running WNW-ESE in approximate latitude 40°-41°S.</p> <p>(ii) Similar location and investigation of the Antarctic Convergence on passage from Stanley or Punta Arenas to the South.</p> <p>The actual position of the Convergence should be recorded on all occasions, by keeping a close watch on the sea surface temperature record when in the likely position of these features. The Kent Recorder should be annotated with times and dates, and cross-referenced to positions and navigational fixes in the manuscript record. Should time allow, a detailed investigation by zig-zag should be made as follows:</p> <p>(a) A broad zig-zag across the convergence extending 20 to 30 miles either side, with B/T dips at 3 to 6 miles and continuous temperature recordings, to identify and delineate the zone.</p> <p>(b) Following (a), a crossing of the Convergence at right angles taking B/T dips at approximately half mile intervals.</p>	<p>MS Report and Navigational Record.</p> <p>Kent Recorder record</p> <p>Forms H560</p>	

HYDROGRAPHIC INSTRUCTIONS
FOR HMS ENDURANCE

APPENDIX I

Note If time on passage does not allow of a thorough search being carried out for a vigia a line of soundings run through the reported position will always be of use.

<u>List No.</u>	<u>Date/Ship</u>	<u>Position</u>	<u>Details</u>	<u>Office Ref.</u> (Largest Scale Chart)	<u>Remarks</u>
1	HMS PROTECTOR	08°57'N 21°08'W	375 fms.	-	These banks require to be delineated, but any soundings in the area would be useful.
	CS TRANS-MITTER (1928)	7°52'N 21°47'W	567 fms	H.7059/28	
	HMS JAGUAR	7°10'N 22°30'W	670 fms.	H.2329/65 (367)	
	Various	09°00'N 21°00'W (approx.)	Various shoal soundings as shown on chart 4011	-	
2	1942 PACIFIC STAR	20°34'S 34°50'W	19 fms (Unexamined) on Davis Bank	H.3875/42 (529)	Searched for by HMS OWEN in 1960; bank was delineated but least depth was not established
	1965 Brazilian N to M	As above	10 fms. 5 feet	H.2507/65	
3	1958 Brazilian N to M	22°34'S 38°20'W	32 fms. The 34 fms. bank charted a few miles ENE was reported in US N to M	H.902/58 (530)	Further investigation or soundings in vicinity of both banks would be useful.
4	1907 La Jour d'Auvergne	41°53'S 50°25'W	69 fms. (E.D.) Repd. to be part of a large bank surrounded by discoloured water. Not found by RRS DISCOVERY II in 1930	H.815/30 (2202B)	Very doubtful but not yet disproved.
5	1920 SS SUBRA	44°00'S 47°30'W (P.D.)	8 fms. Bottom reported seen through kelp	IHB 31 H.4795/63 (2202B)	Unsuccessfully searched for in quoted position, but other shoals have been reported 100 to 150 miles further westward
6	1817 & 1884 L'Alerte & others	52°10'S 64°36'W (P.D.)	"Arrecife Aguila". Reported reef with sea always breaking over it.	IHB 34 (1284)	Existence doubtful but confirmation required. Any soundings in area would be of use.

<u>List No.</u>	<u>Date/Ship</u>	<u>Position</u>	<u>Details</u>	<u>Office Ref.</u> (<u>Largest Scale Chart</u>)	<u>Remarks</u>
7	1965 ELTANIN	57°19'S 66°57'W	Depth of 180 fathoms apparently the top of an extensive bank with depths of less than 1000 fathoms extending 10 miles in a N-S direction	H2806/65 (2202B)	Research ship report. Soundings on lines about 3 miles apart in N-S direction are desirable to delineate the bank.
8	1965/66 Various	56 $\frac{1}{2}$ ° S 70° W	The area within 20 miles either side of a line joining positions 57°00'S., 69°00'W and 56°00'S., 72°00'W is one of rugged topography where existing soundings from different sources disagree markedly.	(539) (1373)	Any soundings within this area would be of great value.
9	1885 PACTOLUS	56°36'S 74°20'W	67 fms. White Sand, rock (61 SR on charts)	IHB263 (539)	US report states "not found within a radius of 27 miles 1962"
10	1938 Mr. Dawes (2nd Officer) (PA)	52°15'S 77°00'W	Bank 40-60 fathoms, 20-30 miles across	CBIII letter (561)	Position indefinite; 52°00'S, 76°40'W also suggested. Further soundings required in general area.
11	1962 MORMACDAWN	36°22'S 76°36'W	16 fms. reported	H.343/63 (3074)	PROTECTOR found 65 fms 10 miles to NE in 1967
12	1884 PARIS N to M	32°24'.5S 72°15.5'W	28 fms	H.3266/67 (786)	PROTECTOR found no shoaling 20 miles eastward in 1967
13	1967 US N to M	25°49'S 77°10'W (P.A.)	350 fms. reported	H.3266/67 (786)	-
14	1945	9°05'S 79°52'W	14 fathoms	H.364/46 (1782)	-
15	1919 CALLAS N to M	4°58'S 82°15'W	23 fathoms (discoloured water)	IHB 254 H.5643/19 (1782)	Bottom cast gave sand and shells. Not found by USS CINCINNATI in 1924
16	1919	5°00'S 83°02'W	32 fathoms	IHB 253 H.7013/19 (1782)	Not found by USS CINCINNATI in 1924
17	1958 FV WHITE STAR	4°00'N 82°12'W	68 fms. reported; flat topped sea mount 4 miles across	H.6981/50 (786)	-

<u>List</u> <u>No.</u>	<u>Date/Ship</u>	<u>Position</u>	<u>Details</u>	<u>Office Ref.</u> <u>(Largest</u> <u>Scale</u> <u>Chart)</u>	<u>Remarks</u>
18	-	13°30'N 59°20'W	Blank area N.E. of Barbados on chart 2485		Any soundings here would be useful to be rendered on the chart scale (see PROTECTOR's soundings for 1968)
19	1877 MARSALA	33°53'N 34°17'W	8 fms. reported	IHB 64	-

HYDROGRAPHIC INSTRUCTIONS FOR
HMS ENDURANCE - 1968/69

APPENDIX II

TIDES

- H.I. No. 1. Chart Datum is 31.19 ft. below B.M. cut in seaward face of tallest tombstone in centre of cemetery, close N. of old Whaling Station. As a check observations, are to be made for Mean Sea Level which should be 3.9 ft. above Chart Datum.
- H.I. No. 2 Chart Datum should be established at 3.5 ft. below M.S.L.
- H.I. No. 3. All deep soundings should be arbitrarily reduced by one fathom. For work in the western sector Chart Datum should be transferred to Sandefjord Bay or Larsen Islands from Borge Bay, Signy Island.
For work in the eastern sector Chart Datum should be transferred to Laurie Island from Borge Bay.
- Chart Datum at Borge Bay, Signy Island is:-
16.20 ft. below B.M. cut in N.W. support of plastic laboratory and Base Hut at Berntsen Point
or 8.71 ft. below top of boulder in beach on H.W. line 25 ft. N.W. of Base Jetty. Rock is painted yellow on top with "Datum" on its side.
- If the above is not possible Chart Datum should be established at 4.1 ft. below M.S.L.
- H.I. No. 4. All deep soundings should be arbitrarily reduced by one fathom. For work in shoal water, Chart Datum should be established at 3.0 ft. below M.S.L.
- H.I. No. 5 Chart Datum should be established at 3.5 ft. below M.S.L.
- H.I. No. 6 Chart Datum should be established at Port Circumcision at 3.2 ft. below M.S.L. and at Port Charcot at 3.4 ft. below M.S.L.
- H.I. No. 7 Chart Datum should be established at 3.5 ft. below M.S.L.
- H.I. No. 8 Chart Datum is established at Port Arthur, Anvers Island as follows:-
12.04 ft. below top of brass Astronomical Station mark at Norsel, on nearest promontory to Humble Island and 100 yds. W.N.W. of living accommodation hut at old American Base.
If the above datum cannot be found, Chart Datum should be established at 3.5 ft. below M.S.L.
- H.I. No. 9 All deep soundings should be arbitrarily reduced by one fathom. Shoal soundings should be reduced by predicted tidal heights using Form H.D. 289.
- H.I. No. 11 Chart Datum at Great Island is as follows:-
17.08 ft. below top of bolt set in cement at S.E. corner of shearing shed close N.W. of jetty in bay on E. coast of Great Island.
or 13.65 ft. below B.M. cut in N.E. corner of house 200 yds. S.W. from jetty.

HYDROGRAPHIC INSTRUCTIONS FOR
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APPENDIX III
List of Wrecks

<u>No.</u>	<u>Lat.</u>	<u>Long.</u>	<u>Sunk</u>	<u>Remarks</u>
<u>H.I. 1/68-9</u>				
1	63-30-02	60-33-35	1956	SOUTHERN HUNTER. Whale catcher. (Position Approximate).
<u>Uncharted</u>				
Nil				
<u>H.I. 2/68-9</u>				
Nil				
<u>H.I. 3/68-9</u>				
2	60-42-43	45-39-38	1913	TIOGA. Whale factory ship blown ashore in a storm. Only the boilers reported to be left.
<u>Uncharted</u>				
Nil				
<u>H.I. 4, 5, 6, 7, 8, 9/68-9</u>				
Nil				
<u>H.I. 11/68-9</u>				
<u>Charted</u>				
Nil				
<u>Uncharted</u>				
3			1880	DAVID LAW. British iron barque total loss on Elephant Cays September 1880.
4			1903	CLARENCE S BEMENT. U.S. Iron Ship of 1900 tons caught fire off Staten Island, put back and anchored off Fox Bay. Burnt out Xmas Day, 1903.
5			1860	SEA RANGER. U.S. 600-ton ship stranded in Ruggles Bay in 1860.
6			1886	GENESTA. 99-ton Falkland Island. Government schooner wrecked on 20th May 1886 on Port Elephant Cay. Floated off and disappeared.
7			1874	ANNE BROOKE. 88-ton local schooner wrecked at or off Fox Bay.
8			1906	FORTUNA. Local schooner lost on West Island.
9			1869	COQUIMBANG (?). Swansea barque wrecked on Tyssen Patch.

HYDROGRAPHIC INSTRUCTIONS FOR
HMS ENDURANCE - 1968/69

APPENDIX IV
SAILING DIRECTIONS

H.I. No. 1

A view of Deception Island from the south-eastward is required showing the entrance to Neptune's Bellows.

Other H.I.s

There are no specific requirements for views in the other HIs, but suitable views together with SD Amendments should be forwarded with each survey in accordance with GIHS.

General

The charting in general in Antarctic waters is poor owing to lack of surveys and mariners must rely much more on written information than is necessary in well charted areas.

It is therefore of the greatest importance that the SDs are carefully checked while on passage in the area as well as on the survey ground. Particular attention should be paid to dates when passages become open or closed due to ice, and cautions about hazards which may not be apparent from the charts.

Written navigational information in a poorly charted area should in general be fuller than in well charted areas.

Slavish following of the existing text in SDs is not necessary and the officer in charge is invited to forward any information of a general as well as that of a navigational nature which it is considered will be of use to ships visiting the area (particularly for the first time).

HYDROGRAPHIC INSTRUCTIONS FOR HMS ENDURANCE

APPENDIX V

DESCRIPTIONS OF MAGNETIC STATIONS

DECEPTION ISLAND 62°42'15" S, 60°42'24" W

(See also Argentine Station on Deception Island on page 3)

Station C - 330 metres NNE of observation hut. The exact position can be obtained from diagrams (Figs 3 & 4) already supplied to RN Antarctic Survey Party.

1966 - Occupied by HMS PROTECTOR to within 5 metres. Observation hut no longer exists.

Buon - Near Bahia I^o de Mayo, 120 metres NNE of the beacon and 3
Sucesa metres from the edge of the coastal cliff. It lies 1300
Beacon metres N of the observation hut. The position is marked
Station by a tiller standing 1 metre above the ground. There
are numerous fumaroles in the vicinity.

Punta - On the coast S of Puerto Foster, on the point; 250 metres
Casco WNW of Grumete beacon and 50 metres from the low water
Station line. The wreck of a wooden vessel lies stranded on the
shore 150 m WNW. It lies 1700 m E of the observation
pillar. Only observations for declinational and
horizontal force, and none for inclination, were taken.
The magnetic hut stands at 10 m above sea level, the
cross at 116 m.

SOUTH GEORGIA

Edwards Point, King Edward Cove (54°18' South, 323°34' East) 1916

On the south east side of Edwards Point, about 6 feet above water, on flat piece of ground, about 30 to 50 yards wide, bordering sloping beach between Edwards Point Light and English magistrate's office, at a point between path and beach about 90 paces from light and about 1 pace south east of line from light in magistrate's flagpole; marked by 3-inch stub projecting about 4 inches above ground, with brass screw marking centre. True bearings: south one of two ranges, prominent squared and painted poles, set by Captain Shackleton for convenience of vessels testing their compasses, 40°35'.0; north range, 43°41'.5; Edwards Point Light 71°06'.4; Spire of Lutheran +, 112°32'.2; base British FS, 250°01'.7.

1966

Occupied by HMS PROTECTOR to within 3 m (3" stub not found). Station marked by brass bolt set in cement.

See also 1967 observations and station descriptions attached.

FALKLAND ISLANDS

Station A, Port Stanley, East Falkland Island (51°41'.2 South, 302°10' East) 1913

A, the 'variation station' of British Admiralty, is on top of ridge at Navy Point across harbour from town of Stanley, in saddle between two clusters of out-cropping rocks, marked by square stone projecting about 1 foot above

/ground, with

ground, with piece of marble set in top, with word 'variation' engraved and hole to mark centre. True bearings: flagstaff above town, $41^{\circ}56'.2$; station B, about 1.5 miles, $63^{\circ}09'.3$; wireless mast, $302^{\circ}27'.0$.

1925

Exact reoccupation of CIW station of 1913. True bearings: gable of slaughterhouse, 2 miles, $8^{\circ}42'.4$; cathedral spire, $43^{\circ}44'.5$; lighthouse, 5 miles, $242^{\circ}52'.8$, left wireless mast of two, 4 miles, $300^{\circ}55'.9$; right wireless mast of two, 4 miles, $302^{\circ}27'.9$.

1965

Exact reoccupation by HMS PROTECTOR.

Station B, Port Stanley, East Falkland Island ($51^{\circ}41'.8$ South, $302^{\circ}08'$ East)

1913

B is on hillside across bay from A, southwest of governor's residence and south of quarters of naval surgeon; in slight depression north of clump of gorse bushes, 212 metres south of wire fence enclosing paddock. True bearings: A, $243^{\circ}10'.5$; cathedral spire $270^{\circ}48'.5$.

1925 ($51^{\circ}41'.7$ South, $302^{\circ}07'$ East)

Exact reoccupation of CIW station B of 1913. True bearings: right wireless mast of seven, 3 miles, $103^{\circ}45'.2$; weather vane on town hall, $\frac{1}{2}$ mile, $264^{\circ}21'.1$; cathedral spire, $\frac{1}{2}$ mile, $270^{\circ}49'.6$.

Station C, Port Stanley, East Falkland Island ($51^{\circ}48'.8$ South, $302^{\circ}08'$ East)

1913

C is 50.5 metres true south $182^{\circ}51'.4$ West of B, 45.0 metres North of eastwest fence.

1925 ($51^{\circ}41'.7$ South, $302^{\circ}07'$ East)

Probably an exact reoccupation of CIW station C of 1913 as a wooden stake was found corresponding to its position by measurement; it is South $2^{\circ}51'.4$ West of station B distant 50.5 metres and higher up on hillside, 45.0 metres North of south fence of paddock. True bearings: right wireless mast of seven, 3 miles, $104^{\circ}34'.4$; weathervane on town hall, $260^{\circ}41'.6$; cathedral spire, $268^{\circ}17'.1$.

Stations B and C were left unmarked by 1925 expedition. Both were to be marked by Colonial Engineer with brass bolts set in concrete posts, and record made in his office.

Between-the-Rocks, East Falkland Island ($51^{\circ}48'.2$ South, $301^{\circ}40'$ East)

1925

Also called 'Half-Way Rocks', on camp of pampa owned by Falkland Islands Company, about 5 miles north-west of Fitzroy, south-west of track from Mount Pleasant to Fitzroy, on clear space near centre of group of small rocks; marked by cross cut in top of rough native stone. True bearings: right edge of rock, $\frac{1}{4}$ mile, $14^{\circ}07'.4$; Mount Pleasant peak, 8 miles, $104^{\circ}21'.1$.

/Port Louis,

Port Louis, East Falkland Island (51°33' South, 301°53' East)

1925

Exact reoccupation of British Admiralty station, EREBUS and TERROR, 1842, and CHALLENGER, 1876; on point between two bays, north of farm buildings of Falkland Islands Company, about $\frac{3}{4}$ miles south-east of farmhouse of Mr J. Robson, about 100 metres south-east of ruins of old French fort; marked by stone monument, 8 by 12 inches, projecting one foot above ground, protected by a copper cover upon which is inscribed the following: "Magnetic Observing Station, HMS EREBUS and TERROR, 1842, dip 52°26', also of HMS CHALLENGER, 1876, dip 40°00'. True bearings: extreme west point of island, 4 miles, 232°29'.2; east gable of farmhouse, 4 miles, 359°50'.1.

1965

Occupied by HMS PROTECTOR. Found as described but azimuth marks described above could not be identified.

ARGENTINE ANTARCTIC INSTITUTE

DESCRIPTION OF STATIONS

MELCHIOR ISLANDS

- I I° de Mayo light. 64°18'.15 S, longitude 62°58'.6 W.
The magnetic observation station is on Cabo Nordeste, Isla I° de Mayo, about 100 metres NE of the lighthouse. It stands on the coastal escarpment on rock which is clear of snow in summer. Ascending from the indentation on the coast S of the cape, proceed 40 metres N to the station, which is marked by a cross cut in the rock surface; the cross is orientated roughly north. The letters PM mean "Punto Magnetico". See figure 9.

Azimuths of references

- 1) Sanaviron beacon: centre of lantern: 144°01'.6 E of N distant 2.1 Km.
- 2) I° de Mayo light: centre of lantern: 127°11'.4 W of N distant 100 m.

- II Isla Kappa. 64°19'.25 S, longitude 63°00'.05 W.
This station lies on the low rocks N of the island and abreast the Cape. The station is marked by a cross cut in the rock, 8 metres S of the N edge of the above detached rocks, which are generally free of snow in summer.

Azimuth of reference

- 1) Sanaviron beacon: centre of lantern: 83°18'.5 E of N, distant 2.4 Km from Station II.

- III Punta Gallows: 64°19'.6 S, 62°59'.1 W.
This station lies on high rocks, which are usually free of snow in summer, separated by a deep and narrow channel from the Cape at the extremity of Isla Observatorio and directly opposite Gallows beacon. The station is marked by a cross cut in the rock.

Azimuth of reference

- 1) Sanaviron beacon: centre of lantern: 58°50'.1 E of N distant 1.9 Km.

- IV Islote Tripode: 64°18'.6 S, longitude 62°57'.1 W.
This station lies at the SE end of the islet, 5 metres from the shore line on rocks free of snow in summer. It is marked by a cross cut in the rock.

Azimuths of reference

- 1) I° de Mayo light: centre of lantern: 54°37'.5 W of N distant 1.5 Km.
- 2) Sanaviron beacon: centre of lantern: 172°28'.4 E of N distant 0.8 Km.
- 3) Gallows beacon: centre of top of lantern: 220°25'.1 E of N distant 2.4 Km.

/DECEPTION ISLAND

DECEPTION ISLAND (See also other stations on Deception Island, described on page 1)

V Isla Decepcion: $62^{\circ}59'.3$ S, $60^{\circ}43'.4$ W.

The station lies on a ridge SSW of the Argentine Naval Detachment base, at a distance of about 700 m, between the brackish lagoon which connects the waters of Port Fosta and those of the "lake of greenish waters". The ridge has an elevation of about 12 m, and in summer its central peak is covered by green lichen. The station is marked by a wooden post with a bronze plate. The letters PM indicate "Punto Magnetico".

Azimuths of references

- 1) Unnamed beacon: centre of top: $8^{\circ}59'.3$ E of N distant 3.8 Km.
- 2) Stone pyramid recording establishment of base: $29^{\circ}47'.8$ E of N distant 700 m.
- 3) Cross on hill. As it leans slightly, its lowest point was used as observing point: $86^{\circ}38'.5$ E of N distant about 1 Km.

Stations - Season 1953-4

HOPE BAY

Ia Bahia Esperanza: $63^{\circ}22'.07$ S, $56^{\circ}59'.68$ W.

The station lies about 200 metres from the Argentine Naval Detachment base, in the direction of the British base, 120 metres from the shore line measured from a small bay lying between two rocky hummocks, and abreast Islote Jagged. The station is marked by a 3-inch square wooden post with a bronze plate inscribed "PM 1953".

Azimuth of reference

Antarctico lighthouse: centre: $71^{\circ}26'.5$ E of N

Ib Bahia Esperanza: $63^{\circ}22'.55$ S, $56^{\circ}59'.65$ W.

This station lies 66 m NE of Station Ia and in line with the two radio towers standing W of the Argentine Naval Detachment base, 100 metres from the latter farther tower. It is marked by a wooden post with a bronze plate inscribed "OALP-PM 1953".

Azimuth of reference

Antarctico lighthouse: centre: $74^{\circ}01'.5$ E of N.

DANCO COAST

II Cabo Primavera: $64^{\circ}09'.0$ S, $60^{\circ}57'.2$ W.

The station lies 30 metres from the shore line in a hollow in the ground. Isla Pinguino is a small island lying NW of it. A bronze plate of Instituto Geografico Militar is sited 19 m NNE. The station is marked by a square wooden post 6 cm x 6 cm showing 20 cm above the ground. The post carries an aluminium plate.

GERLACHE STRAIT

III Isla Cobalescou: $64^{\circ}10'.5$ S, $61^{\circ}39'.0$ W.

On the N side of the island is a series of small coves orientated NE-SW. Proceeding southward the first cove is broad; this is the landing place. After crossing a narrow cove, the station is reached, lying about 4 metres from the latter cove and 17 m from the sea. The station is marked by a round wooden post, 5 cm in diameter and 40 cm high.

/IV Isla Delaite:

- IV Isla Delaite: $64^{\circ}33'.0$ S, $62^{\circ}12'.0$ W.
There are no features on the island useful as reference marks.
The station is reached by scaling the northern cliff, and it is marked by a small, round, wooden stake.

Azimuth of reference

Left-hand peak of island: $23^{\circ}36'.7$ E of N

- V Islote Buls: $64^{\circ}25'.4$ S, $62^{\circ}19'.0$ W
The islet lies N of Isla Buls and is divided into two by a gully inundated by the sea. The station is in the middle of the western part. The Argentine flag will be seen painted north-eastward on the seaward side. The station is marked by a round wooden post, 5 cm in diameter and 50 cm in height.

SOUTH SHETLAND Is

- VI Caleta Potter: $62^{\circ}13'.6$ S, $58^{\circ}36'.1$ W.
The station stands on the S shore of the cove on a ridge lying halfway between the mouth of the glacier and a small salient on the shore westward, and about 110 metres from the shore line. It is marked by a square post 5 cm x 5 cm and 20 cm in height.

Azimuth of reference

Rocky peak of a point on the righthand extremity of a group of rocks westward: $261^{\circ}47.8$ E of N

- VII Peninsula Ardley: $62^{\circ}12'.4$ S, $58^{\circ}54'.5$ W.
The station lies 46 m NE of the Argentine refuge and 45 metres from the HW line. It is marked by a post 5 x 7 cm and 50 cm long, showing only 20 cm of its length.

Azimuths of references

Flagstaff: $196^{\circ}53'.4$ E of N
Gravimetric station
close to Argentine refuge: $211^{\circ}46'.4$ E of N
righthand edge of refuge: $214^{\circ}26'.6$ E of N

Stations - Season 1954-5

- I Isla Petermann: $65^{\circ}11'.3$ S, $64^{\circ}08'.75$ W.
The station lies 160 m SW of the refuge on a ridge which was free of snow when it was occupied. A mark, presumably left by Doctor Charcot during his expedition in 1908-10, lies 3 m E; this mark may be that named Pilar Sud, and it consists of a baked clay pipe with glazed surface 20 cm in diameter, cut obliquely so as to terminate in a point. The magnetic station was marked in the rock by a small hole and by a large arrow in red paint which points roughly N. Also by the legend "PM 1955".

Azimuth of reference

Junction of roof of refuge and its front wall: $340^{\circ}16'.5$ E of N.

- II Almirante Brown: $64^{\circ}52'.1$ S, $62^{\circ}50'.45$ W.
The station lies 200 m E of the Argentine Detachment base, on a shingle beach below the ice and snow cliff, and close to a wooden hut called "Refuge" at a place named Punta Beatriz; it is 2.5 m above sea level and 10 m SE of the refuge. The station is marked on the rock, which is bare in summer, in red paint. The direction of the mark arrow is roughly N (Mag).

Azimuth of reference

Punta Juana beacon: $54^{\circ}24'.3$ E of N

/X Isla Audrey:

- X Isla Audrey: $68^{\circ}08'.4$ S, $67^{\circ}06'.2$ W.
Close to General San Martin base, Bahia Margarita. The magnetic station is on the SE side of Isla Audrey, 50 m ESE of the pyramid beacon and 20 m from the SE point of the island. It is marked by a wooden post painted blue-white-blue with an aluminium plate inscribed "PM Obs Astr La Plata". The words "Punto Magnetico 1956, Com del Obs Astr de la Plata" and indicator arrows pointing towards the station, were painted on the rock close to the point in red paint.

Azimuths of reference

- 1) General San Martin base flagstaff: $3^{\circ}42'.0$ E of N
- 2) Cross on a distant hill in the direction of the base: $8^{\circ}04'.0$ E of N
- 3) Isla Audrey pyramid beacon: $296^{\circ}26'.0$ E of N

- XIII Isla Liard: $66^{\circ}55'.3$ S, $67^{\circ}41'.8$ W.
On a nunatak on the SW side of Isla Liard. The magnetic station lies 24 m E of the astronomical station, and is marked by a cross and a circle painted in white on the rock. The legend "PM 1956" was also painted on the rock.

Azimuth of reference

Cerro Velain, on Cabo Norte of Isla Adelaida: $335^{\circ}32'.3$ E of N.

- XV Isla Stonington: 25 m NE of the mast of the East Admiral Byrd Base. Close to this mast is a bronze plate set in the rock with the inscription "General Land Office Surveying, Station 1, East Base, Antarctic Meridian 1941".

Hydrographic
Survey

6.0 on

file

W. 10/12

H.M.S. Drake
Devonport 30
8th September

Dear Mr Thomson,

Herewith some charts which are
forwarded for your information. I have sent
copies ~~also~~ also to Darwin, Forrest &
the Harbour Master, and a N-W. Passage
one to Mr. Monk who is now at San
Carlos, I believe.

I hope you managed to get the
leading marks erected at North-West
Passage!

Yours Sincerely

Fitz Olling-Smee



31.

ADMINISTRATIVE OFFICER,
SOUTH GEORGIA.

19th September 1968.

Your Ref: H 189/68.

Dear Sir,

Since the cessation of South Georgia whaling and sealing, the number of vessels calling here are relatively few and these mainly vessels of the British Antarctic Survey with adequate stocks of charts. In addition there is to be a complete change in the method of local administration. This is scheduled to take place in 1969.

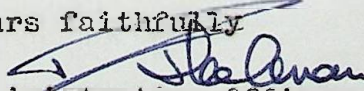
I have discussed these matters with the Colonial Secretary of the Falkland Islands Government. We are both agreed, that under the circumstances, this appears to be an opportune time to transfer the South Georgia agency to the Harbour Master, Stanley. At the present time there is no chart agent in the Falkland Islands.

I propose, therefore, to close the South Georgia agency at the end of December 1968. At that time I will send you the annual statement of account and any amount due to your department. The stock held as shown on that statement will be the stock available for transfer to the Harbour Master, Stanley.

I have now received the charts as listed on your invoice No. 189/01779, but not the disposal instructions for the stock already held, mentioned in your letter of 28th Feb.

Finally, may I say whilst I regret terminating an agency of such long standing, under the circumstances, I feel that the needs of mariners will best be served by the proposed transfer. I await your instructions on that matter.

The Hydrographer
of the Navy,
Hydrographic Supplies
Establishment,
Taunton, Somerset.

Yours faithfully

Administrative Officer.

✓ c.c. The Colonial Secretary,
Stanley,
Falkland Islands.

12th December,

68.

Thank you very much for the charts sent with your letter of the 8th September.

Leading marks have been located at North-West Passage and we kept our promise to you that they would be put up quickly.

Endurance brought Lord Chalfont and his party and we were so busy dealing with them that we hardly had time to look at our new ship. All I know about her is that she is painted red. She is now steaming about the southern oceans trying to assist a B.A.S. aircraft which has made a forced landing but we expect to see her back at the end of the year.

This will not leave here until after Christmas but at least allow me to wish you a somewhat belated Happy New Year.

Lt. P.G. Odling-Smee, R.N.

SC

DECODE.

TELEGRAM.

From... ADMINISTRATIVE OFFICER SOUTH GEORGIA

To... COLONIAL SECRETARY, STANLEY

Despatched : 20th December, 19 68 Time : 1230

Received : 21st December, 19 68 Time : 0950

3037

Please refer to my letter to Hydrographer dated 19th September copied to you reference transfer of chart agency. Following telegram received from Hydrographer begins your letter 19th Sept received today. Please destroy old stock and forward certificate of destruction to me. I accept your proposal to transfer new stock to Harbour Master Stanley under same arrangements as were operated by you. Kindly confirm when transfer completed thanks. Ends first opportunity I will transfer stock and relevant files and instructions to Harbour Master

ADMINOFF

34.

C.S. I wonder if I.P.C. are already Admined, Chart Agents in Stanley?

P/L : AA

1/10

P.I.O.

33.

J.M.
Amy Conn
W.
23/12

35

C.S.

Spoke F.I.C. by telephone. They do not really know whether they are Admiralty Secret Agents, but, subject to approval of their Head Office, would be willing to take over the Agency.

§

1.1.69

36

Fic are not agents Agreed that will be change agents.

W1.

20/1

37

GOVERNMENT TELEGRAPH SERVICE

FALKLAND ISLANDS

SENT

P2538 P4776/32/401381 500 11/66 R. Ward 843

Number	Office of Origin	Words	Handed in at	Date
	STANLEY			20.1.69
To	ETAT ADMINOFF ZBH		SCA/C	

No 6 Admiralty charts stop ³³ Your unnumbered tel of 20
December stop Noted

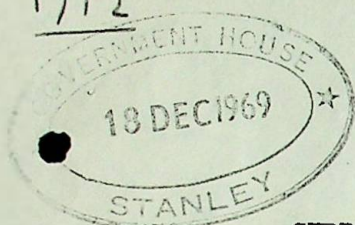
Secretary

Time

AA

1.5.69

1712



*CS. Please initiate matters of Darwin and
Foreser to support priorities. Comdr
Campbell is not expected in from
Salvador until mid-January 69*

SUPPLEMENTARY HYDROGRAPHIC INSTRUCTIONS NOS 20 AND 21 OF 1969 FOR

LIEUTENANT COMMANDER R. J. CAMPBELL, ROYAL NAVY

HMS ENDURANCE

18/12/69

SUPPLEMENTARY HI 20/69 - ISLAS ILDEFONSO AND ISLAS DIEGO RAMIREZ

44

As opportunity permits during passage round Cape Horn you are to endeavour to fix on chart No 1373 the groups of islands listed below in relation to the islands fringing Tierra Del Fuego and if possible in relation to fixes obtained by Satellite Navigation:

- a. ISLAS ILDEFONSO (Lat $55^{\circ} 46'S$, Long $69^{\circ} 21'W$, approx)
- b. ISLAS DIEGO RAMIREZ (Lat $56^{\circ} 31'S$, Long $68^{\circ} 44'W$, approx)
- c. The "conspicuous twin peak" referred to in paragraph 4 of MV HERTFORD's letter dated 11th July 1969.

2 Copies of reports on their incorrect charting and a print of part of chart No 1373 showing work by MV HERTFORD are enclosed.

3 The islands were fixed by traverse by Captain Fitzroy in BEAGLE in about 1830 and prints of his Fair Sheets are being forwarded separately. It is suggested that these will be of general interest to the Ship's Company.

4 Your report should quote H4559/69

SUPPLEMENTARY HI 21/69 CHARTING PRIORITIES

Additionally to the normal reports on surveying and charting priorities in the Antarctic, you are to obtain local opinion on the proposed new charting scheme for the Falkland Islands, together with surveying priorities there. The report should be forwarded as early as convenient with a view to it being received in the Hydrographic Department by mid February 1970 at the latest, even if by the date necessary for despatch it is incomplete.

The receipt of these instructions is to be acknowledged.

[Signature]
for HYDROGRAPHER OF THE NAVY
7th October 1969 (H1125/69)

*S/C
11/12/69 CS. For filing
at Secretariat place
13/12/70*

Copies to: The Commanding Officer, HMS ENDURANCE
The Commander in Chief, Western Fleet
His Excellency The Governor of the Falkland Islands and Dependencies

Y.E.

On enquiry I found Harbourmaster already had the matter in hand. I saw also Messrs. Mather & Pollock. The intention of all three is, after having given time for thought, to meet with a view to concerting recommendations to be made to Comdr. Campbell. Harbourmaster has been in touch with Comdr. Campbell, I understand.

J
1/9/12

Hubbardsmaster

Pp. 25-a

Thank you for having these pp. looked up in connection with your forthcoming get-together with Lt. Cmdr. Campbell.

2 Can you indicate to me how much of the work recommended in pp. 25-a has been carried out? Presumably not a great deal, & pp. 25-a are therefore likely to be put forward, substantially unmodified, to Lt. Cmdr. Campbell, or a selection from them only?

45

J
30/12

Col. Sec.

As far as I am aware the only work attempted from pp 25 is the present survey in the Salvador Waters Area. Admittedly, items such as Positions of Bridges, Lights on Wireless Masts, Old Sealing Stations etc. etc. are errors but certainly do not constitute hazards to navigation and there is no urgent need for their correction. Both Captain Miller and Jack Sollis would be pleased to see extensive work in Smylie's Channel. Incidentally this area is one of the most difficult in the islands to chart.

J
3/12

BU 13/1

45

HM

Para. 1 of my minute p. 44. Grateful if
you will let me know the position.

J
13/1

46.

6.5.

Lt. Comm. Campbell, Capt. Millen and Jack Tallis met and had a
general discussion regarding I. I. charts and forthcoming surveys.

During the next 15 years it is proposed to convert all existing
charts to metric soundings, incorporating the Aerial Survey and any
new work completed. A priority publication list was agreed upon.

At present we have 2 main charts of the Falklands and 9
of various other harbours, anchorages etc. Four other areas
(including Bahada Water) have been surveyed during the past
few years but charts relating to these surveys have not been
published. When published these will presumably be in the metric system?

X | A priority list for new work was also agreed upon, top of this
list was the sandstone entrance to Smyth's Channel and the correct position
of Chanis Rock.

JH
19.1.70

47

HM

T.Y. A copy of the priority list mentioned at X
of your minute above can be made available for this file?

M
19/1

DECODE.

40
TELEGRAM.

From H.M.S. ENDURANCE

To GOVERNOR FALKLANDS

Despatched : 1st November 1969 Time : 1620Z

Received : 2nd November 1969 Time :

ROUTINE 011620Z NOV

From H.M.S. Endurance to Governor Falklands information N.P. 8901
N.P. 8902. Governor Falklands pass to all.

1. Hydrographic instruction number 2 of 1969 survey of Port Salvador and approaches intend detached party undertake this task period 13 December to 12 January party would consist of six officers and twenty ratings with survey boat two helicopters and landrover.
2. Your agreement in principal and that of land owners concerned is requested for
 - A. establishing base in vicinity either Salvador or Rincon to be decided after recce of area. Also tide camp at entrance to Port Salvador.
 - B. Erection of poles with flags followed by observations in area Malo Hill to Blackpoint to Campa Menta Bay.
 - C. Operation of helicopters in area.
3. Helicopter recce of area and establishing tide camp would be done as ship passes 10 December.
4. Although ^{any} help with accommodation would be appreciated only essential assistance is one covered room for theraping charts otherwise party would live in tents and be entirely self supporting A.
5. In addition grateful confirmation
 - A. Tide change in Port Stanley is operative
 - B. No objection to landing small amount dutiable stores for personal use of survey party.

P/L : SJS

Cs. For Secretariat file.

*I discussed with Captain Macleod
+ Lt Col Peckles on 8/11/69 and
they are fully in the picture.*

MS 10/11

7th November, 69.

1712

Dear Sir,

Information has been received from H.M.S. Endurance that one of the hydrographic tasks for the coming season is to be a survey of Port Salvador and its approaches.

It is intended that a survey party of six officers and twenty ratings with a survey boat, two helicopters and a Land Rover should undertake this task between 13th December and 12th January.

The survey party would plan to establish a base in the vicinity either of Salvador or Rincon Grande, the site to be decided after a reconnaissance of the area which would take place by helicopter on 10th December when H.M.S. Endurance is approaching the Falkland Islands.

A subsidiary camp for measurement of tides would be required at the entrance to Port Salvador.

Poles with flags would need to be erected followed by observations in the area of Main Hill to Blackpoint to Campa Menta Bay.

Although any help with accommodation would be appreciated, the only essential assistance is one covered room for working on charts otherwise the party would live in tents and be entirely self supporting.

It would be appreciated if you could say whether you would be willing for a base camp and a subsidiary camp to be established on your land and whether you are agreeable to the erection of poles and the operation of surveyors including the use of helicopters.

If there are particular conditions you would wish to have observed perhaps you would indicate what these might be.

Details of this survey became available while Mr Fitaluge was in Stanley this week and have already been conveyed to him verbally. I am, however, sending him a copy of this letter for his information.

Yours faithfully,



for Colonial Secretary

The Manager,
Rincon Grande.

DECODE.

41
TELEGRAM.

From GOVERNOR FALKLANDS

To H.M.S. ENDURANCE

Despatched : 8th November

1969

Time : 1215Z

Received :

19

Time :

ROUTINE 081215Z

40
Your 011620Z. Regret reply delayed. Salvador survey welcomed by Government. Pitaluga happy for Salvador land to be used. Reaction other landowners awaited. Pitaluga can provide room for charts. This being sheep shearing season tented camps excellent arrangement. Stanley tide gauge operative. No objection landing dutiable stores.

P/L : SJS

C.S. for Secretariat file.
Please do again ^{when} this Turner replies re
Lincoln Islands. LK 10/11

~~Y.G.~~ CA 10/11

39

Manager, Rincon Grande letter is in the post & will be delivered on today's flight.

I have discussed with Managers, F.I.C., Geaculet & Douglas. All are happy about the exercise & raise no objection to the points raised.

8.11.69

42

66
12/11

J.G.

we spoke.

Rincon Grande wd. welcome the unit but
 wd. wish a firm instruction issued regarding the
 needless destruction of birds. The geese on the
North coast are apparently the same one can hardly
 miss although they have no objection to birds
 being taken for the pot, they wd. not want them set
 up as targets.

J.G. 11.11.68

DECODE.

TELEGRAM.

CS

43

OK
12/11

From GOVERNOR FALKLANDS

To H.M.S. ENDURANCE

Despatched : 12th November 19 69 Time : 1530Z

Received : 19 Time :

ROUTINE 121530Z

40

Your 011620Z. All landowners agreeable subject limitation
on bird shooting.

P/L : SJS

FA

But ~~20 11 69~~ (C.S. to see)

"Salvador House"



Gibraltar Station
Port San Salvador
Falkland Islands

48

CS
Acknowledged in
agreeing
15/1/71

14th Jan. 1970

Dear Sir Cosmo,

Because of the great interest shown in and the number of visits made to view the wrecked Helicopter, I felt that the proposed action indicated in the enclosed copy of my letter to Lt. Cdr. Peebles is justified. In its present distant and concealed position, it is too much of a temptation to those inclined to be light fingered.

I hope you will approve of my decision
With kind regards

S/C F. PA J 24/1

Yours sincerely
Brian Pitsheya

R. M. PITALUGA & COMPANY

(SHEEP FARMING)

49

TELEGRAMS
"GIBSTAY PORTSTANLEY"

OUR REF.
YOUR REF.



GIBRALTAR STATION,
PORT SAN SALVADOR,
FALKLAND ISLANDS,
SOUTH ATLANTIC.

14th January 1970

Lt. Cdr. A. M. Peebles, R.N.,
Moody Brook,
EAST FALKLANDS.

Dear Sir,

This is to advise you, as Officer-in-Charge of Naval operations in the Falklands, that in view of the very considerable responsibility I feel for the safety of the ditched Helicopter No. 448 at present lying on Shiela's Point which is part of my farm and in the absence of any indication from H.M.S. Endurance what its future is to be, I have decided to lift it onto a sleigh tomorrow and bring it into the settlement for safekeeping until a decision is made by those who decide its fate.

Every care will be taken to avoid any further damage and I do not anticipate any difficulty in carrying out this operation. If you should wish to inspect it at any time, you will be most welcome.

A copy of this letter is enclosed and I would be most grateful if you would kindly hand it to Captain Buchanan on his return from Antarctica.

Yours faithfully,

A handwritten signature in blue ink that reads "R.M. Pitaluga".

(R.M. Pitaluga)

MANAGER

c. c. His Excellency the Governor.

Captain Buchanan, R.N.

(47) BU to HM 8/3/70

- 1 Party will arr. 1600 Fri. 30.1.70.
- 2 Lt. Maggee will fly ashore to see Clifton, & myke Pearson at "Darwin."
- 3 Sat. 31.1. Party starts being in. 8 men. Lunch. Use same blg. as on prev. occasion.

Rest of day helicopter will be planting 14 flags all over. T. 7 and Sat. p.m. "Endurance" will sent.

- 4 Party probably be relieved on 20.2.70. & will take couple of days to leave.