

付 属 資 料

沿岸国からの要請書

プロジェクト形成調査団派遣時作成M/Mレポート(1995年1月)

第一次事前調査団派遣時作成M/Mレポート(1995年12月)

第二次事前調査団派遣時作成S/W及びM/Mレポート(1996年5月)

収集資料リスト

沿岸国からの要請書

(///) Terms of Reference



UNIT PERANCANG EKONOMI
Economic Planning Unit
JABATAN PERDANA MENTERI
Prime Minister's Department
JALAN DATO' ONN
50502 KUALA LUMPUR
MALAYSIA

KL 8664 01

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往電第 319 号別FAX信

Ref. Tuen:
Your Ref:

Ref. Kami:
Our Ref:

Tarikh:
Date:

(5)dim.IJPE(S)40/240/186

23 February 1995

BY HAND

Mr. H. Sawayama,
First Secretary,
Embassy of Japan,
No.11, Persiaran Stonor,
off Jalan Tun Razak,
50450 KUALA LUMPUR.

Dear Sir,

"Re-Survey of One Fathom Bank and
Investigation of Dangerous/Unconfirmed
Wrecks in the Straits of Malacca and Singapore"

With reference to the above, I am pleased to inform you that the Government of Malaysia has agreed to implement the above mentioned project in collaboration with Indonesia, Singapore and Japan. The objectives of the project are to identify the fathom banks and dangerous/unconfirmed shoals and wrecks which have been reported and to reconfirm the position of fathom banks and unconfirmed wrecks that were surveyed in 1960s and 1970s to ensure as to whether their positions had changed.

2. To facilitate the project, we would like to request that the Japanese Government could provide technical assistance to implement this project in collaboration with Indonesia and Singapore.

3. Your kind consideration in the matter is much appreciated.

Thank you.

Yours faithfully,

(Suraya Woon Abdullah)
for Director General,
Economic Planning Unit

KL 8664 02

c.c.:

Resident Representative,
JICA Malaysia Office,
Suite 18.1W, 18th Floor,
Wisma Sime Darby,
Jalan Raja Laut,
50350 KUALA LUMPUR.

(3)



MFA/721/94 往電第 1414 号別 F A X 信

SN.590401

The Ministry of Foreign Affairs of the Republic of Singapore presents its compliments to the Embassy of Japan and has the honour to refer to the meeting of the Working Group of the Tripartite Technical Experts Group on Safety of Navigation in the Straits of Malacca and Singapore held in Langkawi, Malaysia from 18-20 January 1994.

The meeting agreed that the project on resurvey of the One Fathom Bank Area and investigation of dangerous/unconfirmed shoals and wrecks in the Straits of Malacca and Singapore would be implemented jointly by the three littoral states of Indonesia, Malaysia and Singapore. The meeting discussed the scope of survey proposed by Japan and agreed on some revisions. The revised scope of work has been conveyed to the relevant authorities in Japan.

The Ministry has been informed that the Government of Japan will consider assistance to implement the project under the Japanese Overseas Development Assistance (ODA) Programme. The Ministry has also been informed that the Governments of the Republic of Indonesia, Malaysia and the Republic of Singapore are each required to submit bilateral official requests for funding assistance.

In this regard, the Ministry requests the Embassy to notify the relevant authorities in Japan of Singapore's request for assistance from the Japanese Overseas Development Assistance Programme for implementation of the above project within the territorial waters of the Republic of Singapore.

SN.590407

The Ministry of Foreign Affairs of the Republic of Singapore avails itself of this opportunity to renew to the Embassy of Japan the assurances of its highest consideration.

SINGAPORE

25 November 1994

Embassy of Japan
Singapore



(3)

往電第 1270 号別FAX信



DJ: 8188-1

REPUBLIC OF INDONESIA
NATIONAL DEVELOPMENT PLANNING AGENCY
JAKARTA, INDONESIA

Our Ref.: 2990/WK/5/1995

Jakarta, 24 May 1995

Mr. Z. Kaminaga
Minister
Embassy of Japan
Jakarta

Dear Mr. Kaminaga,

Referring to your Embassy's letter dated May 4, 1995 addressed to the DG of Sea Communication, Ministry of Communication and further to my letter No. 1224/WK/2/1995 dated February 24, 1995, we would like to propose "Hydrographic Survey of Shoal Patches and Wrecks in the Malacca and Singapore Straits" as an additional Development Study project proposal for 1995/96.

Looking forward to your government's favourable consideration and thank you for your kind cooperation.

Sincerely yours,



[Signature]
Z. Baharri Ramelan
Chairman of Bappenas

Cc:

1. Minister of State for National Development Planning/
Chairman of Bappenas
2. Head, Bureau for Foreign Technical Cooperation,
Cabinet Secretariat

(3)

MEETING OF THE TECHNICAL SUB-WORKING GROUP
ON HYDROGRAPHIC SURVEYING OF WORKING GROUP
OF THE TRIPARTITE TECHNICAL EXPERT GROUP ON
THE SAFETY OF NAVIGATION IN THE
STRAITS OF MALACCA AND SINGAPORE

18TH - 20TH JANUARY, 1994, LANGKAWI, MALAYSIA.

1. Terms of Reference (TOR)

The TOR of the Sub-Working Group are to arrive at a consensus to decide on the areas to be jointly surveyed in order of priority and prepare a preliminary scope of works.

2. On the basis of the Original Proposal Paper (Appendix 1) and Working Group Report (Appendix 2) of the Fifteenth TTEG in 1987, the Sub-Working Group considered the further proposals made by Japan (Appendix 3) together with Indonesia (Appendix 4) and Malaysia (Appendix 5).
3. The Sub-Working Group considered and made the following recommendations.

4. Survey (Study) Area

The survey areas in order of priority are :

a. Category 1

(1) Area A (Enlarged)

- (a) 02° 51'.4N, 100° 57'.2E
- (b) 02° 48'.3N, 101° 03'.4E
- (c) 02° 45'.0N, 101° 03'.4E
- (d) 02° 45'.0N, 101° 01'.3E
- (e) 02° 48'.9N, 100° 54'.1E

(2) Area E

- (a) 01° 13'.3N, 103° 24'.3E
- (b) 01° 13'.3N, 103° 27'.4E
- (c) 01° 09'.3N, 103° 27'.4E
- (d) 01° 09'.3N, 103° 24'.3E

(3) Area F

- (a) 01° 06'.7N, 103° 40'.6E
- (b) 01° 06'.7N, 103° 43'.6E
- (c) 01° 03'.7N, 103° 43'.6E
- (d) 01° 03'.7N, 103° 40'.6E

(4) Area G

- (a) $01^{\circ} 09'.1N, 103^{\circ} 43'.9E$
- (b) $01^{\circ} 09'.1N, 103^{\circ} 46'.9E$
- (c) $01^{\circ} 06'.1N, 103^{\circ} 46'.9E$
- (d) $01^{\circ} 06'.1N, 103^{\circ} 43'.9E$

(5) Area H

- (a) $01^{\circ} 12'.0N, 103^{\circ} 47'.4E$
- (b) $01^{\circ} 12'.0N, 103^{\circ} 50'.4E$
- (c) $01^{\circ} 09'.0N, 103^{\circ} 50'.4E$
- (d) $01^{\circ} 09'.0N, 103^{\circ} 47'.4E$

(6) Area I

- (a) $01^{\circ} 17'.5N, 104^{\circ} 13'.5E$
- (b) $01^{\circ} 17'.5N, 104^{\circ} 16'.5E$
- (c) $01^{\circ} 14'.5N, 104^{\circ} 16'.5E$
- (d) $01^{\circ} 14'.5N, 104^{\circ} 13'.5E$

b. Category 2

(1) Area B

- (a) $02^{\circ} 36'.7N, 101^{\circ} 24'.4E$
- (b) $02^{\circ} 36'.7N, 101^{\circ} 27'.5E$
- (c) $02^{\circ} 32'.4N, 101^{\circ} 27'.5E$
- (d) $02^{\circ} 32'.4N, 101^{\circ} 24'.4E$

(2) Area C (Enlarged)

- (a) $02^{\circ} 23'.4N, 101^{\circ} 40'.2E$
- (b) $02^{\circ} 23'.4N, 101^{\circ} 45'.0E$
- (c) $02^{\circ} 21'.8N, 101^{\circ} 45'.0E$
- (d) $02^{\circ} 21'.8N, 101^{\circ} 40'.2E$

(3) Area D

- (a) $01^{\circ} 57'.6N, 102^{\circ} 12'.6E$
- (b) $01^{\circ} 57'.6N, 102^{\circ} 16'.9E$
- (c) $01^{\circ} 54'.0N, 102^{\circ} 16'.9E$
- (d) $01^{\circ} 54'.0N, 102^{\circ} 12'.6E$

(4) Area J (Shallow Patch)

- (a) 02° 17'.6N, 101° 48'.2E
- (b) 02° 17'.6N, 101° 49'.6E
- (c) 02° 15'.0N, 101° 51'.1E
- (d) 02° 15'.0N, 101° 49'.6E

(5) Area K (Shallow Patch)

- (a) 02° 18'.2N, 101° 52'.8E
- (b) 02° 18'.8N, 101° 53'.4E
- (c) 02° 17'.0N, 101° 55'.4E
- (d) 02° 16'.0N, 101° 54'.8E

(6) Area L (Shallow Patch)

- (a) 01° 46'.2N, 102° 42'.8E
- (b) 01° 42'.6N, 102° 50'.0E
- (c) 01° 42'.0N, 102° 49'.8E
- (d) 01° 45'.8N, 102° 42'.6E

(7) The following wrecks and shoals :

- a. Shoal (No. 21) 02° 10'.3N, 101° 51'.3E
- b. Wreck PA (No. 26) 01° 46'.4N, 102° 43'.3E
- c. Wreck PD (No. 33) 01° 33'.9N, 103° 05'.1E
- d. Wreck (No. 38) 01° 12'.2N, 103° 34'.7E
- e. Wreck (No. 42) 01° 06'.1N, 103° 45'.0E
- f. Wreck PA (No. 52) 02° 28'.0N, 101° 35'.2E
- g. Shoal Repd (No. 53) 02° 15'.9N, 101° 47'.7E
- h. Wreck (No. 54) 01° 54'.3N, 102° 04'.6E
- i. Wreck (No. 55) 01° 10'.8N, 103° 32'.9E
- j. Wreck (No. 56) 01° 07'.2N, 103° 46'.5E

(Numbers referred above are in accordance with Appendix 1. Numbers 52-56 are new wrecks/shoals not previously identified.)

5. Horizontal Datum

WGS 84 Datum shall be adopted as horizontal datum throughout the entire survey.

6. Tidal and Current Observations

A pressure or float tide gauge is to be established at location previously established during the last Joint Survey (or nearest to it) for observation of 30 days for the sounding datum to be determined by analysis. A tide pole is also to be erected to relate the datum to the benchmark and to check the tide gauge. Current observation is also required at a suitable position for 30 days.

7. Sounding

A single or multi beam echosounder shall be deployed for sounding generally at intervals 50 metres. Sounding lines will be intensified as necessary on detection of any shoal/wreck. If a heave compensator is to be used, they are to be deployed continuously. Echo sounders are to be calibrated by bar check in accordance with normal surveying standards. Orientation of sounding lines are to be decided in the field. The conduct of sounding shall conform with IHO standards. For disproving of shoal/wreck, the criteria in accordance with SP 44 is to be adhered. For further confirmation, contact wire sweeps or divers may be deployed.

8. Positioning Fixing

Electronic Positioning Fixing System/Differential Global Positioning System (DGPS) from coordinated geodetic station ashore (better than 3rd Order) will be used.

9. Bottom Sampling

Bottom Sampling shall be carried out at regular intervals for bottom classification and sonar interpretation.

10. Data Processing

Initial data processing should be carried out in the field. Final data processing shall be carried out at a convenient common location to be decided later.

11. Expenses

Each coastal state is recommended to provide a hydrographer-in-charge (supervisor) and survey ship. Japan will make available the following :

- a. Study Team
- b. Survey ship (survey boat only)
- c. Vehicles
- d. Assistant Survey Engineers
- e. Survey and other necessary equipment.

**LIST OF MEMBERS SUB-WORKING GROUP
ON HYDROGRAPHIC SURVEYING OF TECHNICAL WORKING
GROUP OF THE TRIPARTITE TECHNICAL EXPERTS GROUP
ON THE SAFETY OF NAVIGATION IN
THE STRAITS OF MALACCA AND SINGAPORE**

- | | | |
|----|--|-------------|
| 1. | Commodore Mohd. Rasip b. Hassan | - Malaysia |
| 2. | Datuk Capt. Hamzah b. Mohd Noor | - Malaysia |
| 3. | Capt. P.J. Thomas | - Singapore |
| 4. | Mr. Parry Oei | - Singapore |
| 5. | Capt. Haji Abd. Rahim b. Abd. Aziz | - Malaysia |
| 6. | Mr. Makmur Sulaiman | - Indonesia |
| 7. | Mr. Wisnu Suwarsono | - Indonesia |
| 8. | Lt. Cdr. Abd. Razak b. Abu Hassan, RMN | - Malaysia |

MALAYSIAN PAPER
INVESTIGATION OF WRECKS AND SHOALS IN
THE STRAITS OF MALACCA AND SINGAPORE

1. Wreckage or artificial obstructions which stand significantly proud of the surrounding seabed may constitute a hazard to shipping navigating over continental shelf areas, and all must be located, examined and recorded. The criteria for their examination, in accordance to the International Hydrographic Organization standard are as follows:

(a) POSITION

B.1.5 - The position of soundings, dangers and all other significant features should be determined with an accuracy such that any probable error, measured relative to shore control, shall seldom exceed twice the minimum plottable error at the scale of the survey (normally 1.0 mm on paper). It is most desirable that whenever positions are determined by intersection of lines of position, three such lines be used. The angle between any pair should not be less than 30 degs.

(b) DEPTH

C.2.1 - Wrecks and obstructions which may have depths less than 40 metres and may be dangerous to surface navigation must, whenever possible, be physically examined by diving or sweeping to determine the least depth over them. The same standard of accuracy should be attained, where equipment permits, as for soundings specified in C.1.1.

2. Other factors which should be considered are:

a. So long as a wreck or obstruction continues to be a hazard to navigation or other marine activity (such as anchoring or fishing) it must appear on the chart.

b. In addition to wrecks and obstructions which are charted, any

objects which have been described as giving 'non-sub'* echoes or which may constitute a 'foul' on the seabed must be found, fixed and recorded whether dangerous to shipping or not, or, they must be disproved.

c. The onus is on the hydrographer to confirm or disprove every charted wreck, obstruction or contact previously classified as 'non-sub', unless disproved beyond doubt, they must remain on the chart and/or in records.

d. Newly located wrecks which are dangerous to navigation, or charted wrecks which are significantly different in position or depth must be reported without delay.

e. The examination of all shoal indications whether new or already charted, is one of the most important aspects of any survey. No surveying can be considered complete until all such shoals have been examined, and any charted shoals which have not been located have been disproved.

3. Annex A to this paper is a list of wrecks, obstructions and shoals currently to be found in the Straits of Malacca and Singapore. It is by no means exhaustive and is compiled only to give an idea of the large extent of dangers that abound the Straits of which accurate records of position and depth are lacking. They are a danger to the safety of navigation within the Straits.

4. For any country to take up a comprehensive survey to either confirm or disprove the existence of these dangers will constitute an enormous task. The task however remains and is in fact increasing as the number of reported wrecks and shoals grows. At the same time reports cannot be ignored but will have to be put on the charts making the Straits appear

* Non-sub- Unconfirmed, cannot be substantiated, having no proper records of how depths or positions were obtained.

to be a more hazardous area to navigate.

5. It is therefore recommended that the issue be discussed and proposals be made to overcome the problem in the interest of safety for international shipping using the Straits. A four - nation joint investigation would likely be the appropriate and required solution.

15th TTEG
Kuala Lumpur.

Serial	Lat./Long. (DMS)	Wreck or Sidel	Chart No.	Remarks
(a)	(b)	(c)	(d)	(e)
1	03 29N 100 52E	Wreck	3945	Depth over wreck unknown but thought to be < 20m. Average depth in area is 60m. Considered dangerous.
2	03 27N 100 53E	Wreck	3945	Position approximate. Reported 1968. Depth over wreck unknown but thought to be < 28m. Average depth in area is 70m. Considered dangerous.
3	03 26N 100 53E	Wreck	3945	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 35m. Considered dangerous.
4	03 26N 100 53E	Wreck	3945	Position approximate. Depth over wreck unknown but thought to be < 29m. Average depth in area is 50m. Considered dangerous.
5	03 25N 100 53E	Wreck	3945	Unsurveyed wreck. Position approximate. Considered to have safe clearance of 35m.
6	03 25N 100 53E	Shoal	3945	Reported (1962) unconfirmed shoal; sounding of 36m in area of average depth of 70m.
7	03 25N 100 53E	Shoal	3945	Reported (1966) unconfirmed shoal; sounding of 29m in area of average depth of 70m.
8	03 25N 100 53E	Shoal	3945	Reported (1962) unconfirmed shoal; sounding of 33m in area of average depth of 70m.
9	03 25N 100 53E	Obstruction	3945	Obstruction. Nature unspecified. Considered dangerous.
10	03 25N 100 53E	Wreck	3945	Unsurveyed wreck. Exact depth unknown. Considered to have safe clearance at depth of 70m.
11	03 25N 100 53E	Wreck	3945	Unsurveyed wreck. Exact depth unknown. Considered to have safe clearance at depth of 30m.
12	03 25N 100 53E	Wreck	3945	Unsurveyed wreck. Exact depth unknown. Considered to have safe clearance at depth of 40m.
13	03 25N 100 53E	Wreck	3945	Wreck lies on bank of average depth of 10m. Sounding of 3m over wreck obtained.

(a)	(b)	(c)	(d)	(e)
14	02 58 10N 101 49 13E	Wreck	3945	Position approximate. Depth over wreck unknown but thought to be 20m. Average depth in area is 21m. Considered dangerous.
15	02 55 00N 100 55 23E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 30m in area of average depth of 25m.
16	02 50 59N 101 11 26E	Wreck	3946	Position approximate. Depth over wreck unknown but thought to be 20m. Average depth in area is 30m. Considered dangerous.
17	02 50 59N 101 11 26E	Wreck	3946	Position approximate. Reported 1972. Depth over wreck unknown but thought to be 28m. Average depth in area is 30m. Considered dangerous.
18	02 50 10N 101 24 52E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 17.0m in area of average depth of 30m.
19	02 50 10N 101 24 52E	Shoal	3946	Reported (1972) unconfirmed shoal sounding of 15.0m in area of average depth of 30m.
20	02 50 10N 101 24 52E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 19.0m in area of average depth of 23m.
21	02 50 10N 101 24 52E	Shoal	3946	Reported (1972) unconfirmed shoal sounding of 19.0m in area of average depth of 22m.
22	02 50 10N 101 24 52E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 10m in area of average depth of 25m.
23	01 51 04N 100 50 06E	Wreck	3947	Position approximate. Depth over wreck unknown but considered to have safe clearance at 15m. Average depth in area is 16m.
24	01 51 04N 100 50 06E	Wreck	3947	Reported (1975) unconfirmed depth of 17m over wreck. Average depth in area is 20m.
25	01 50 00N 100 51 04E	Shoal	3947	Reported (1984) unconfirmed shoal sounding of 17.0m in area of average depth of 30m.
26	01 50 00N 100 51 04E	Wreck	3947	Position approximate. Depth over wreck unknown but thought to be 28m. Average depth in area is 30m. Considered dangerous.
27	01 50 00N 100 51 04E	Wreck	3947	Position approximate. Depth over wreck unknown but thought to be 28m. Average depth in area is 13m.

(a)	(b)	(c)
28	01 46 06N 102 50 52E	Wreck Depth over wreck unknown but thought to be < 28m. Average depth in area is 25m. Considered dangerous.
29	01 43 12N 102 49 15E	Wreck Depth over wreck unknown but thought to be < 28m. Average depth in area is 35m.
30	01 25 48N 102 44 32E	Wreck Position approximate. Wreck only visible.
31	01 20 18N 102 52 10E	Wreck Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 15m. Considered dangerous.
32	01 26 00N 103 04 02E	Wreck Depth over wreck unknown but thought to be < 23m. Average depth in area is 15m. Considered dangerous.
33	01 25 30N 103 05 04E	Wreck Position doubtful. Depth over wreck unknown but thought to be < 28m. Average depth in area is 20m. Considered dangerous.
34	01 22 54N 103 04 43E	Wreck Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 11m. Considered dangerous.
35	01 24 02N 103 08 23E	Shoal Reported (1973) unconfirmed shoal sounding of 29m in area of average depth of 35m.
36	01 23 48N 103 11 12E	Shoal Reported (1973) unconfirmed shoal sounding of 27m in area of average depth of 35m.
37	01 16 02N 103 10 24E	Wreck Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 20m. Considered dangerous.
38	01 13 10N 103 34 18E	Wreck Position approximate. Reported. Depth over wreck unknown but thought to be < 28m.
39	01 11 20N 103 37 12E	Wreck Depth over wreck unknown but thought to be < 25m. Average depth in area is 30 m. Considered dangerous.
40	01 04 42N 103 30 24E	Wreck Position approximate. Depth over wreck unknown but thought to be < 28m. Considered dangerous.
41	00 55 12N 103 35 30E	Wreck Position approximate. Reported. Depth over wreck unknown but thought to be < 28m. Considered dangerous.

(a)	(b)	(c)	(d)	(e)
42	01 07 34N 105 35 35E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be (28m. Average depth in area is 30m. Considered dangerous.
43	01 08 14N 105 35 34E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be (28m. Average depth in area is 30m. Considered dangerous.
44	01 08 34N 105 35 33E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be (28m. Average depth in area is 20m. Considered dangerous.
45	01 08 14N 105 35 32E	Obstruction	CDC Sheet 6	Obstruction: Nature unspecified. Considered dangerous.
46	01 08 50N 105 35 34E	Wreck	CDC Sheet 6	Depth over wreck unknown but thought to be (28m. Average depth in area is 50m. Considered dangerous.
47	01 09 14N 105 35 33E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be (28m. Average depth in area is 30m. Considered dangerous.
48	01 09 34N 105 35 32E	Wreck	CDC Sheet 6	Position approximate. Reported. Depth over wreck unknown but thought to be (28m. Average depth in area is 30m. Considered dangerous.
49	01 09 14N 105 35 34E	Wreck	CDC Sheet 6	Reported. Depth over wreck unknown but thought to be (28m. Average depth in area is 30m. Considered dangerous.
50	01 09 34N 105 35 33E	Wreck	CDC Sheet 6	Position approximate. Reported. Depth over wreck unknown but thought to be (28m. Average depth in area is 30m. Considered dangerous.
51	01 09 32N 105 35 30E	Wreck	CDC Sheet 6	Depth over wreck unknown but thought to be (28m. Average depth in area is 13m. Considered dangerous.

WORKING GROUP REPORT

The Working Group considered and made the following recommendations:-

A. Harmonization of Aids to Navigation

1. Batu Berhanti Light Beacon - no change, earlier decision stands.
2. Takong Area - No change.
3. Buffalo Rock Lt. Beacon - to be changed to North Cardinal mark with light characteristic Q.
4. Nipa Lt. Beacon - to be changed to general mark and the characteristic of the light to be different from all other lights in the Takong area.

B. Problem of the Knocking Down of Aids to Navigation

To crop the shoals.

C. Wrecks and Shoals Investigation

For the purposes of investigations, wrecks and shoals should be classified into the following categories:-

Category I : those inside the TSS or direct approaches to the TSS.

Category II : those outside the TSS but inside the general shipping route.

Category III : Those outside the general shipping route.

List of wrecks and shoals (Refer to Annex O of the main report).

Category I : Nos.: 6, 7, 8, 9, 10, 11, 12, 14, 15, 17, 35, 36, 38, 39, 40, 42, 43, 46, 48, 50, S1, S2, S3, S4, S5, S6 (as attached).

Category II : Nos.: 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 33, 41.

Category III : Nos.: 1, 2, 3, 4, 5, 13, 27, 28, 30, 31, 32, 34, 37, 44, 45, 47, 49, 51.

The Working Group recommended that a joint investigation of the relevant charts and the physical location of the wrecks and shoals be carried out.

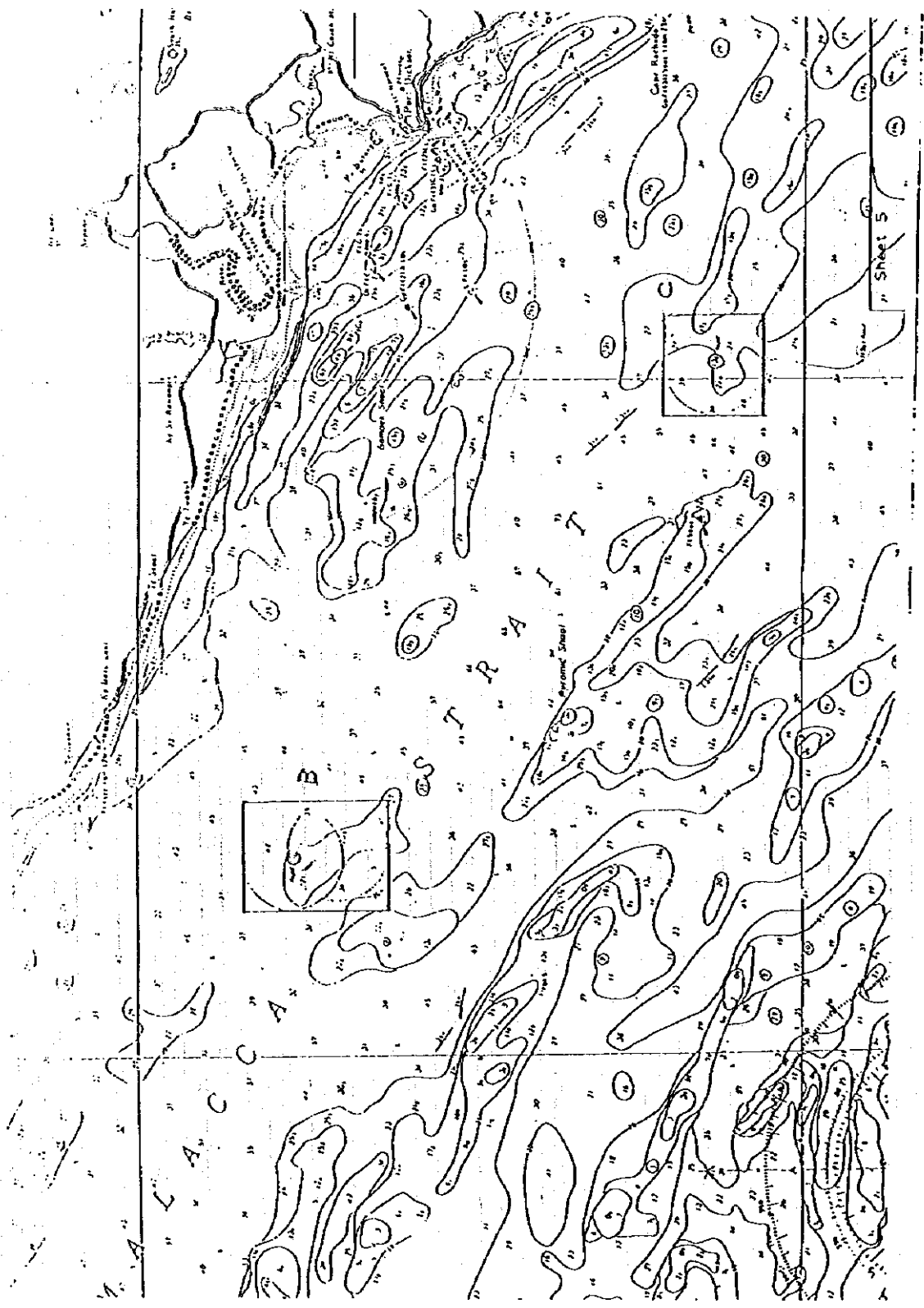
LIST OF WRECKS AND DANGERS IN MALACCA & SINGAPORE STRAITS ROUTING SYSTEM
 REPORTED AFTER IMPLEMENTATION OF TSS ON 1.5.81

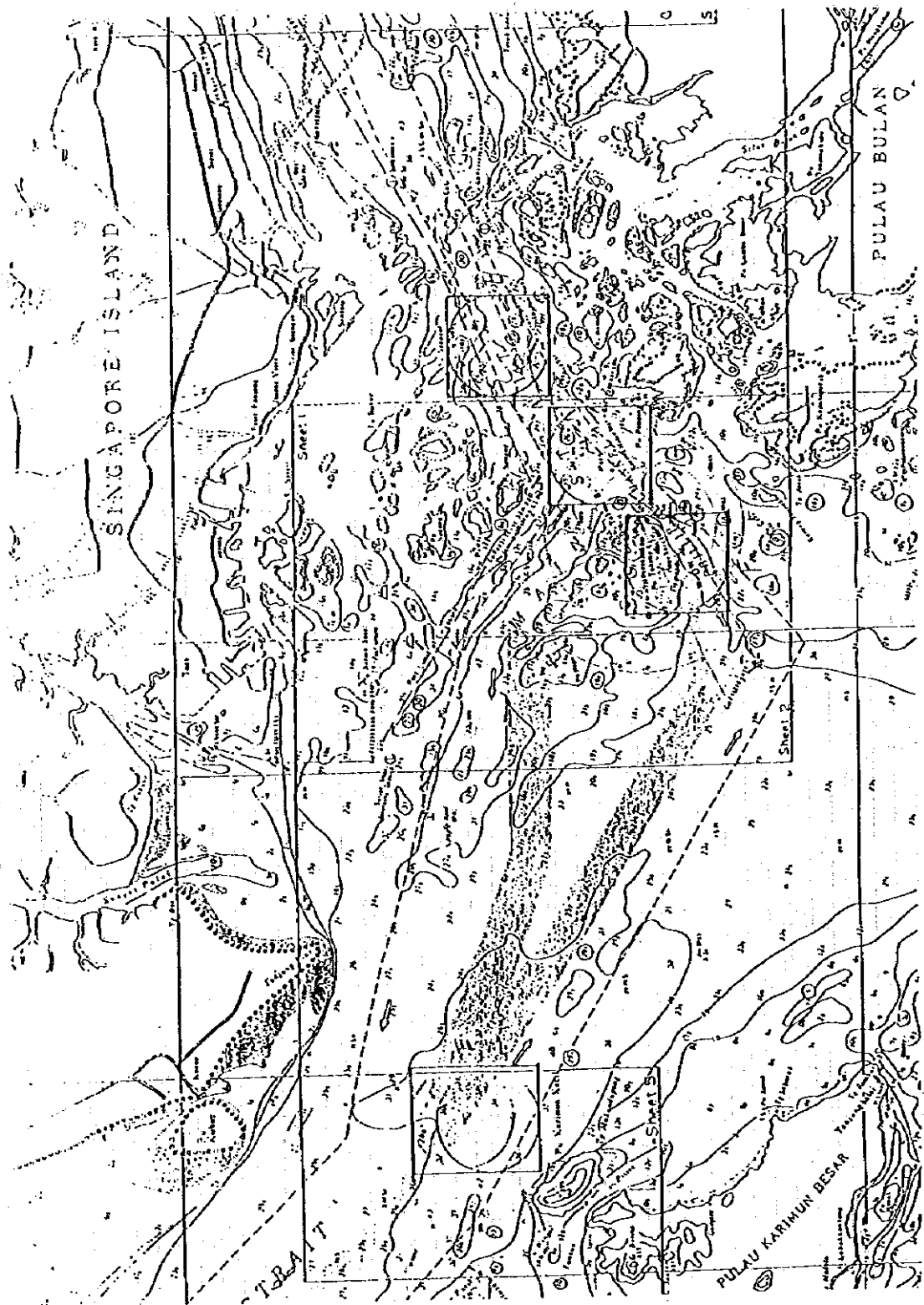
	Name of Wreck	Position	Locality	Remarks
S1	M V NIACA 40	1° 11.803' N 103° 25.886' E (PA) (RK Datum)	Off The Brothers (in Traffic Separation Zone)	Reported by DG Sea Comm, Indonesia 2684 Ton (or 834 GRT) reported sunk following a collision on 7 Sep 86. Charted with safe clearance depth of 15 metres.
S2	Unknown	1° 10'.84' N 103° 25.78' E (RK Datum)	Off The Brothers (within the East bound lane).	Reported by Navarea XI 964/86 834 Tons. Charted as non dangerous wreck.
S3	MV "BRASTAGI" /YCVQ	1° 06.8' 103° 41.1' E (RK Datum)	West of Pulau Takong Besar on TSS Zone.	Reported by Indonesia NM 24/198/82 in 1982. Stranded Wreck.
S4	M.S. "SINAR LAUT" Nr 289	1° 07.6' N 103° 45.3' E (RK Datum)	Off Raffles Lighthouse (in eastbound lane).	Reported by Indonesian NM 31/335/81 in 1981. 100 Tons. Charted as dangerous wreck. Position Approximate Repd 1981. Indonesian NM 40/418/81 mentioned wreck name as "Sinar Harapan".
S5	A depth of 21 metres	1° 10.50' N 103° 48.94' E (RK Datum)	North of Buffalo Rock in east bound lane.	Reported by K V World Diplomat ref BA NM 3190/84 in 1984. Charted 21 metres with danger circle legend "Repd (1984)".
	Transter "THAI BAUN NO. 1"	1° 14.71' N 103° 57.60' E (RK Datum)	Northeast Ward of Batu Berhent1 in Eastbound lane.	GRT 499. (Ref. Jakarta Telex no. 61/1984. Navarea XI, BA NM 15/1114/86, SM 12/157/86). Charted dangerous wreck with depth 27.5 metres over it. Date of sinking 30 Nov 84.

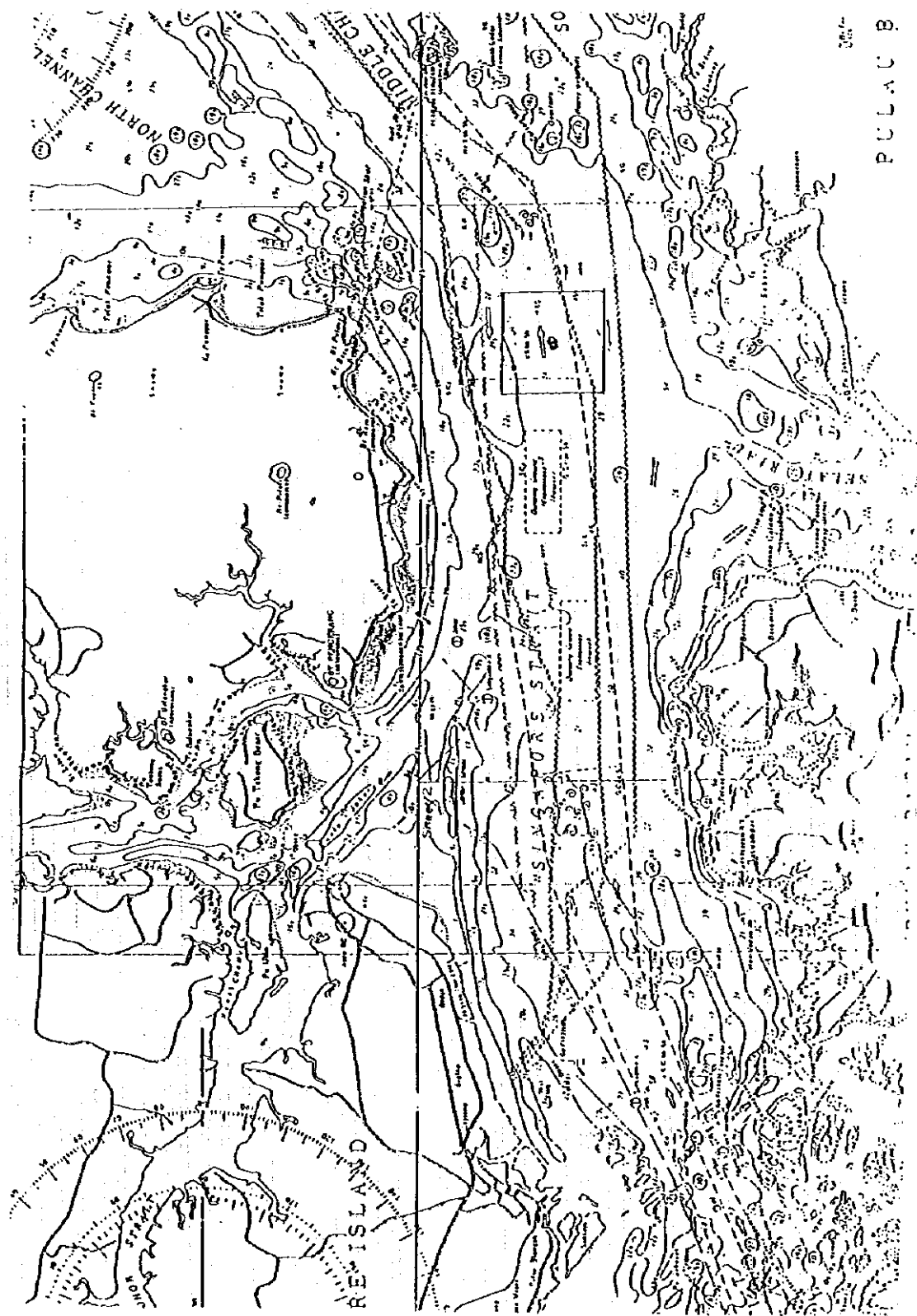
Hydrographic Survey of the Malacca-Singapore Straits (Location of 9 areas)

Area	1	2	3	4	Remarks
A	2°-50' 2 N 100°-59' 3 E	2°-50' 2 N 101°-03' 6 E	2°-44' 5 N 102°-03' 6 E	2°-44' 5 N 100°-59' 3 E	(15°) 2°-48' 7 N 101°-00' 8 E (17°) 2°-47' 0 N 101°-02' 1 E (17°) 2°-46' 0 N 101°-02' 1 E
B	2°-36' 7 N 101°-24' 4 E	2°-36' 7 N 101°-27' 5 E	2°-32' 4 N 102°-27' 5 E	2°-32' 4 N 101°-24' 4 E	(18°) 2°-35' 2 N 101°-25' 9 E (18°) 2°-33' 9 N 101°-26' 0 E
C	2°-24' 1 N 101°-39' 1 E	2°-24' 1 N 101°-42' 1 E	2°-21' 1 N 102°-42' 1 E	2°-21' 1 N 101°-39' 1 E	(19°) 2°-22' 5 N 101°-40' 6 E
D	1°-57' 6 N 102°-12' 6 E	1°-57' 6 N 102°-16' 9 E	1°-54' 0 N 102°-16' 9 E	1°-54' 0 N 102°-12' 6 E	(23°) 1°-56' 1 N 102°-14' 1 E (24°) 1°-55' 5 N 102°-15' 4 E
E	1°-13' 3 N 103°-24' 3 E	1°-13' 3 N 103°-27' 4 E	1°-09' 3 N 103°-27' 4 E	1°-09' 3 N 103°-24' 3 E	(S1°) 1°-11' 8 N 103°-25' 9 E (S2°) 1°-10' 8 N 103°-25' 8 E
F	1°-06' 7 N 103°-40' 6 E	1°-06' 7 N 103°-43' 6 E	1°-03' 7 N 103°-43' 6 E	1°-03' 7 N 103°-40' 6 E	(43°) 1°-05' 2 N 103°-42' 1 E
G	1°-09' 1 N 103°-43' 9 E	1°-09' 1 N 103°-46' 9 E	1°-06' 1 N 103°-46' 9 E	1°-06' 1 N 103°-43' 9 E	(42°) 1°-07' 6 N 103°-45' 4 E
H	1°-12' 0 N 103°-47' 4 E	1°-12' 0 N 103°-50' 4 E	1°-09' 0 N 103°-50' 4 E	1°-09' 0 N 103°-47' 4 E	(S5°) 1°-10' 5 N 103°-48' 9 E
I	1°-17' 5 N 104°-13' 5 E	1°-17' 5 N 104°-16' 5 E	1°-14' 5 N 104°-16' 5 E	1°-14' 5 N 104°-13' 5 E	1°-16' 0 N 104°-15' 0 E

Note : (1~4) shows the 4 corners of each area (Area).
Longitude and latitude in a remarks column shows the points where sunken ships or shallows are confirmed.







1. Resurvey And Investigation of The Navigational Hazards

Basically Resurvey and Investigation of dangerous/unconfirmed shoals and wreck at One Fathom Bank area, Malacca and Singapore Straits is one of the basic needs in supporting the safety of navigation in those straits; the results should be officially announced through notice to mariners and the new navigational hazards which have been founded should be published in nautical documents and printed in nautical chart. To obtain good result in supporting the safety of navigation, to indicate those hazards visual aids to navigation is necessary. The draft scope of work which has been forwarded by the government of Japan to the Ministry of Transport and which has been informed to us is adequate i.e :

- a. Area "A", Area "B" and Area "F" are acceptable.
- b. Area "C" is o.k but is should be noted to confirm to a shallow water in position 02-10-20N /101-51-22E (Indonesian chart Nr. 351, 1985).
- c. Area "D" is agreeable but please confirm to one wreck in position 01-54-20N/102-04-38 E (Indonesian chart Nr, 351, 1985).
- d. Area "E" is o.k. but please check 2 (two) wrecks in position 01-12-11N/103-34-20E and 01-10-48N/103-32-52E (Indonesian chart Nr. 352, 1985).
- e. Area "G" is acceptable but please confirm one wreck in position 01-06-06N/103-45-00E and a shallow water in position 01-06-06N/103-45-00E and a shallow water in position 01-07-12N/103-46-30E (Indonesian chart Nr. 352, 1985).
- f. Area "H" is o.k. please confirm 2 (two) wrecks in position 01-13-40N/2103-56-24E and 01-11-05N/103-57-20E and also a 14 mtrs water depth in position 01-09-30N/103-48-18E (Indonesian chart Nr. 352, 1985).
- g. Area "I" please check the existing submarine cables.

We also suggest an interval sounding of 10 mtrs should be done at the location of the founded wreck.

We wish that the execution of the survey shall employ the survey vessel of the government of Republic Indonesia with the joint team of the four countries (Indonesia, Malaysia, Singapore and Japan) and all expenses should be donated by the government of Japan.

Proposal for Hydrographic Survey and Investigation of
Dangerous/Unconfirmed Wreck and Shoal

1. Proposed area to be re-surveyed

1.1 Area 1

i.	02° 51.4' N.,	100° 57.2' E.
ii.	02° 48.3' N.,	101° 03.4' E.
iii.	02° 45.0' N.,	101° 03.4' E.
iv.	02° 45.0' N.,	101° 01.3' E.
v.	02° 48.9' N.,	100° 54.1' E.

1.2 Area 2

i.	02° 23.4' N.,	101° 40.2' E.
ii.	02° 23.4' N.,	101° 45.0' E.
iii.	02° 21.8' N.,	101° 45.0' E.
iv.	02° 21.8' N.,	101° 40.2' E.

1.3 Area 3

i.	02° 17.6' N.,	101° 48.2' E.
ii.	02° 17.6' N.,	101° 49.6' E.
iii.	02° 15.0' N.,	101° 51.1' E.
iv.	02° 15.0' N.,	101° 49.6' E.

1.4 Area 4

i.	02° 18.2' N.,	101° 52.8' E.
ii.	02° 18.8' N.,	101° 53.4' E.
iii.	02° 17.0' N.,	101° 55.4' E.
iv.	02° 16.2' N.,	101° 54.8' E.

1.5 Area 5

i.	01° 46.2' N.,	102° 42.8' E.
ii.	01° 42.6' N.,	102° 50.0' E.
iii.	01° 42.0' N.,	102° 49.8' E.
iv.	01° 45.8' N.,	102° 42.6' E.

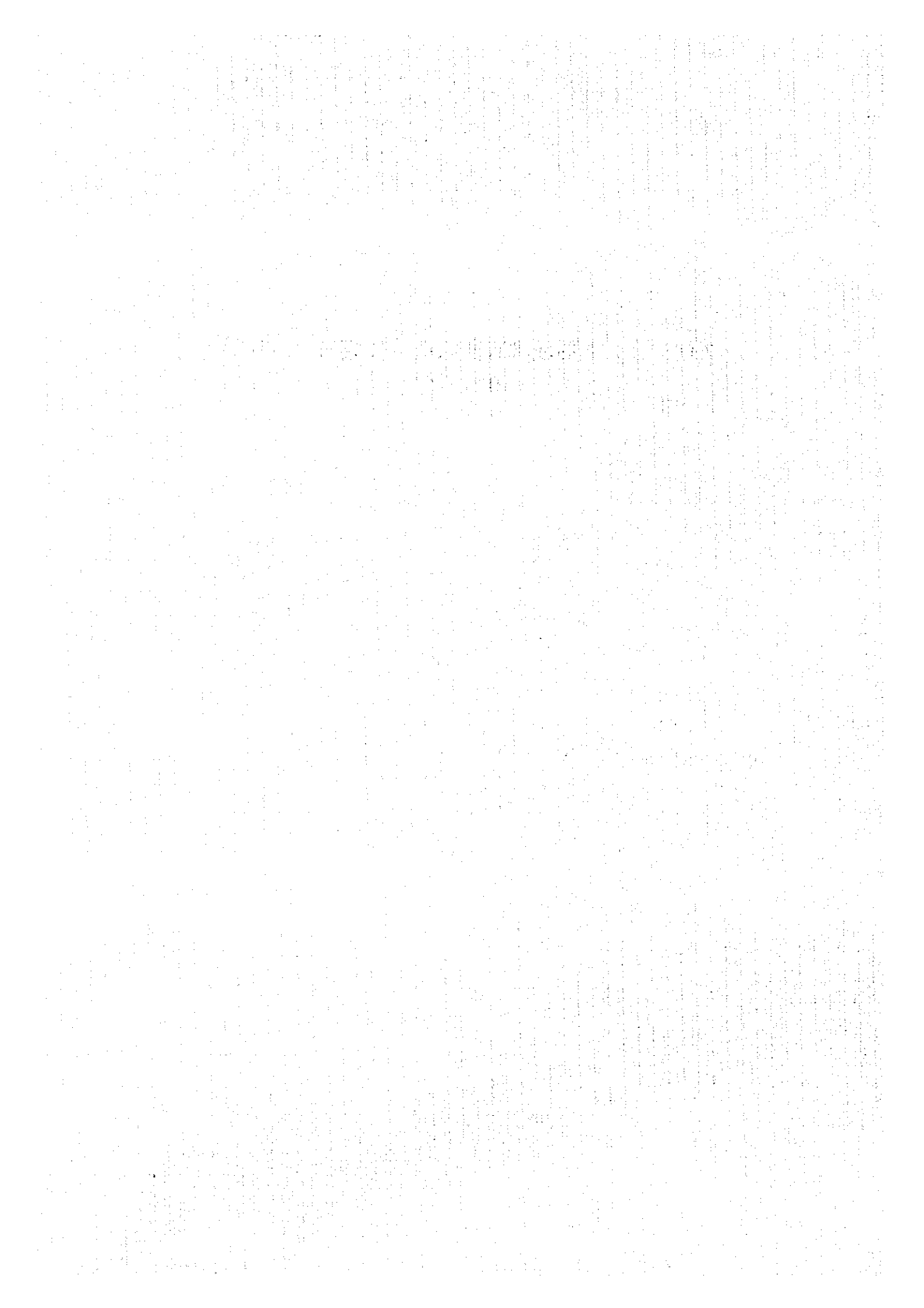
2. Proposed investigation of dangerous/unconfirmed wreck

i.	Wreck (1972)	02° 46.0' N.,	101° 02.1' E.
ii.	Wreck (PA)	02° 28.0' N.,	101° 35.2' E.
iii.	Wreck (PD)	01° 33.9' N.,	103° 05.1' E.
iv.	Wreck (PA)	01° 46.4' N.,	102° 43.3' E.

3. Proposed investigation of dangerous/unconfirmed shoal

i.	Shoal (1972)	02° 22.6' N.,	101° 40.6' E.
ii.	Shoal (1975)	02° 15.9' N.,	101° 47.7' E.
iii.	Shoal (1987)	02° 34.0' N.,	101° 25.8' E.

プロジェクト形成調査団派遣時作成M/Mレポート
(1995年1月)



**REPORT OF THE MEETING ON THE RE-SURVEY
OF ONE FATHOM BANK AREA AND INVESTIGATION
OF DANGEROUS/UNCONFIRMED SHOALS AND WRECKS
IN THE STRAITS OF MALACCA AND SINGAPORE**

BETWEEN

**THE WORKING GROUP OF THE TRIPARTITE TECHNICAL
EXPERTS GROUP ON THE SAFETY OF NAVIGATION
IN THE STRAITS OF MALACCA AND SINGAPORE**

AND

THE GOVERNMENT OF JAPAN

**ON 13 JANUARY 1995
KUALA LUMPUR, MALAYSIA**

**THE MEETING ON THE RE-SURVEY OF ONE FATHOM BANK
AREA AND INVESTIGATION OF DANGEROUS/UNCONFIRMED
SHOALS AND WRECKS IN THE STRAITS OF
MALACCA AND SINGAPORE BETWEEN THE
WORKING GROUP OF THE TRIPARTITE
TECHNICAL EXPERTS GROUP ON THE SAFETY OF
NAVIGATION IN THE STRAITS OF MALACCA AND
SINGAPORE AND THE GOVERNMENT OF JAPAN
12 - 13 JANUARY 1995
KUALA LUMPUR, MALAYSIA**

CONTENTS

1. Letter of Transmittal.

2. Report of The Meeting on the Re-survey of One Fathom Bank Area and Investigation of Dangerous/Uncolirmed Shoals and and Wrecks in the Straits of Malacca and Singapore Between the Working Group of the Tripartite Technical Experts Group on the Safety of Navigation in the Straits of Malacca and Singapore and the Government of Japan.

3. Annexes:
 - A: List of Delegates

 - B: Agenda

 - C: Extract of the Report of the Meeting of the Working Group of the Tripartite Technical Experts Group on the Safety of Navigation in the Straits of Malacca and Singapore, 18 - 20 January 1994, Langkawi, Malaysia.

 - D: Indonesian Position Paper - Indonesian Proposal For The Commencement of Re-Survey of One Fathom Bank And Investigation of Dangerous/Uncolirmed Wrecks in the Malacca and Singapore Straits.

 - E: Scope of Work (Draft) for Hydrographic Survey Of Shoal Patches And Wrecks in The Malacca and Singapore Straits Agreed Upon Between The Government of Malaysia, The Government of the Republic of Indonesia, The Government of The Republic of Singapore and Japan International Cooperation Agency.

LETTER OF TRANSMITTAL

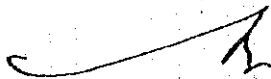
**REPORT OF THE MEETING ON THE RE-SURVEY
OF ONE FATHOM BANK AREA AND INVESTIGATION
OF DANGEROUS/UNCONFIRMED SHOALS AND
WRECKS IN THE STRAITS OF MALACCA AND SINGAPORE
BETWEEN THE WORKING GROUP OF THE TRIPARTITE
TECHNICAL EXPERTS GROUP ON THE SAFETY OF
NAVIGATION IN THE STRAITS OF MALACCA AND
SINGAPORE AND THE GOVERNMENT OF JAPAN**

The Meeting on the Re-Survey of One Fathom Bank Area and Investigation of Dangerous/Unconfirmed Shoals and Wrecks in the Straits of Malacca and Singapore between the Working Group of the Tripartite Technical Experts Group on the Safety of Navigation in the Straits of Malacca and Singapore and the Government of Japan hereby submits its Report as attached.

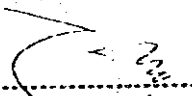
Dated this 13th day of January 1995



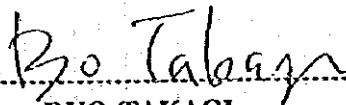
O. C. PHANG
HEAD OF THE MALAYSIAN DELEGATION



CAPT. SYAHWIN HAMID
HEAD OF THE INDONESIAN DELEGATION



PARRY OEI
HEAD OF THE SINGAPORE DELEGATION



RYO TAKAGI
HEAD OF THE JAPANESE DELEGATION

**REPORT OF THE MEETING ON THE RE-SURVEY
OF ONE FATHOM BANK AREA AND INVESTIGATION
OF DANGEROUS/UNCONFIRMED SHOALS AND
WRECKS IN THE STRAITS OF MALACCA AND SINGAPORE
BETWEEN THE WORKING GROUP OF THE TRIPARTITE
TECHNICAL EXPERTS GROUP ON THE SAFETY OF
NAVIGATION IN THE STRAITS OF MALACCA AND
SINGAPORE AND THE GOVERNMENT OF JAPAN**

INTRODUCTION

1. A Meeting to discuss the deliberations of the Working Group on the Re-Survey of One Fathom Bank Area and Investigation of Dangerous/Unconfirmed Shoals and Wrecks in the Straits of Malacca and Singapore was held in Kuala Lumpur on 12th - 13th January 1995.
2. The Meeting was attended by delegates from Indonesia, Singapore, Malaysia and Japan. The list of delegates appears as ANNEX A.

WELCOME REMARKS

3. The Head of the Malaysian delegation welcomed the delegates from Indonesia, Singapore and Japan to Kuala Lumpur and introduced the members of the Malaysian delegation. Accordingly, the Head of the Indonesian, Singaporean and Japanese delegation introduced members of their delegation.

ELECTION OF CHAIRMAN AND VICE-CHAIRMAN

4. In accordance with the decision of the Working Group that Malaysia coordinates this re-survey project, Mdm. O.C. Phang, Head of the Malaysian delegation was unanimously elected chairman of the Meeting.

5. Mr. Parry Oei, Head of the Singapore delegation was unanimously elected Vice-Chairman of the Meeting.

ADOPTION OF THE AGENDA

6. The Meeting adopted the Agenda which appears as ANNEX B.

BUSINESS ARRANGEMENT

7. The Meeting discussed all agenda items in Plenary.

PROCEDURAL REQUIREMENT FOR THE RE-SURVEY WORKS

8. The Japanese delegation explained the procedural requirement with regard to the need for an official request by Malaysia, Indonesia and Singapore to Japan for bilateral aid assistance to carry out the re-survey project in the Straits of Malacca and Singapore. The Meeting was informed that this is a normal procedure in any of JICA's bilateral assistance and that it is a formality. The Meeting was informed that Malaysia, Indonesia and Singapore have taken the necessary action with the relevant agencies in the respective countries with regard to the official request and that the matter is being processed by the relevant agencies in the respective countries.
9. The Meeting having deliberated on the subject matter agreed to use the 'Scope of Works' as agreed by the Tripartite Technical Experts Group's (TTEG) Working Group which met in Langkawi in 1994 and which was subsequently transmitted

to Japan. The Meeting further agreed that Malaysia, Indonesia and Singapore should actively pursue the matter.

BRIEFING ON THE SCOPE OF WORK ON THE RE-SURVEY OF ONE FATHOM BANK AND INVESTIGATION OF DANGEROUS/UNCONFIRMED SHOALS AND WRECKS IN THE MALACCA AND SINGAPORE STRAITS

10. The leader of the Working Group briefed the Meeting on the subject matter. He clarified that a Working Group of the TTEG was formed to specifically look into the Terms of Reference (TOR) and the Scope of Works of the Study. The Working Group in its deliberation on the matter agreed to the TOR and the Scope of Works which was subsequently endorsed by the respective Governments. The TOR and the Scope of Works appears in ANNEX C.

11. In his briefing he explained the reasons for categorising the various Areas and Points to be surveyed which was based on priority of works to be carried out. It was explained that Category I contains those Areas that are directly in the present Traffic Separation Scheme (TSS) or the proposed new TSS. Category II consists of Areas and Points which are adjacent to the present and proposed TSS. He further explained the peculiarities of the various Areas and Points. The Meeting took note of the briefing given by Commodore Rasip.

CONSIDERATION OF THE INDONESIAN POSITION PAPER

12. The Indonesian delegation introduced a paper given in ANNEX D which reflected the Indonesian position with regards to the re-survey project. The Meeting was

informed that the paper is in line with what had been agreed upon in Langkawi in January 1994.

DISCUSSION

13. The Meeting under the agenda item discussed the draft Scope of Work submitted by Japan which appears as **ANNEX E**.

i) **Scope of the Full Scale Study (Study Objective and Items)**

13.1 The Japanese delegation which introduced Annex E explained that the draft Scope of Work is meant to be studied and commented upon by the three Littoral States. The Meeting was informed that after the receipt of the official request from the three Littoral States by the Japanese Government, a preparatory study will be conducted to determine the framework of the Study. The preparatory study will also look into all aspects including the budget. This will be followed by the selection of a consultant who will visit the Littoral States for the commencement of the Study.

ii) **Survey Areas & Points**

13.2 The Japanese delegation introduced Appendix I to Annex E and informed the Meeting that the Japanese proposal as contained in their paper reflects the decision of the Langkawi Meeting with regard to the Areas and Points to be surveyed. Two additional points namely **Points k** and **l** were

recommended. The two points were included based on the assessment of the Japanese.

13.3 The Japanese delegation further explained that all the Areas and Points will be surveyed within the estimated three years period of the Study according to the latest technology available.

13.4 The Meeting took note of the explanation given by the Japanese delegation and agreed to the 24 Areas and Points as contained in Appendix I of Annex E. The Meeting also agreed that prioritisation of the Areas and Points if necessary will be discussed at the implementation stage.

13.5 The Meeting agreed that the venue of the final data processing will be in Japan. The Meeting further agreed that the Littoral States could consider the possibility of sending their personnel to Japan to participate in the said work. The Meeting also agreed that there is no necessity for a tidal current study to be conducted because a similar study had been carried out in 1978.

iii) Study Process & Phases

13.6 The Meeting was informed by the Japanese delegation that based on the draft Scope of Work discussed, the duration of the Study is approximately three years.

iv) **Undertaking of Each Government**

13.7 The Meeting considered the proposed draft and agreed as follows:-

a) paragraph 1(1) to 1(8) in principle is acceptable to the three Littoral States. With regard to paragraph 1(9), the Japanese delegation explained that the telecommunication facilities include:-

- i) Differential Global Positioning System; and
- ii) communication equipment for the survey.

Based on the explanation given, the Littoral States will pursue the matter with the relevant authority in their respective countries when details are made available.

- b) the appointment of Malaysia as the coordinator for the Study;
- c) relevant data and information related to the Study will be made available to the Study Team;
- d) the Littoral States will make every effort to ensure the presence of counterpart personnel for the Study;

- e) the Littoral States will each provide a mother vessel for survey with crew including fuel expenses;
 - f) the Littoral States will make available a supervisor to the survey;
 - g) the provision of office space and equipment in the Littoral States or the mother vessel;
 - h) the Littoral States will provide credentials and identification cards to the Study Team;
 - i) the Littoral States will make every effort to provide vehicles and drivers to the Study Team; and
 - j) the schedule for the implementation will be discussed by the Littoral States with the Preparatory Study Team.
- v) **Undertaking of JICA**

13.8 The Meeting agreed that Japan will revert to the Littoral States with regard to the provision and supply of survey and other necessary equipment for the Study.

vi) **Steering Committee & Technical Group
for the Full Scale Study**

13.9 The Meeting agreed that each of the Littoral States will form a Technical Group to work together with the Study Team and to review all reports and progress of work. It was agreed that the TTEG as the Steering Committee will be kept informed of the progress of the Study.

14. The Meeting having considered Annex E agreed that each Littoral State will revert to their respective agency on the draft Scope of Work and to inform Japan accordingly.

OTHER MATTERS

15. No subject matter was raised under this agenda.

ADOPTION OF THE REPORT

16. The Meeting considered and adopted the Report.

ACKNOWLEDGEMENT

17. The delegations from Indonesia, Singapore and Japan expressed their sincere appreciation to the host country for the hospitality extended to them and the excellent arrangements made for the Meeting.

18. The Meeting was held in the traditional spirit of goodwill and mutual understanding.

ANNEX A

LIST OF DELEGATES

MALAYSIA

1. Ms. O.C. Phang,
Under Secretary,
Maritime Division,
Ministry of Transport.

2. Commodore Mohd. Rasip b. Hassan,
Hydrographic Directorate,
Department of Navy,
Ministry of Defence.

3. Mr. Roslee b. Mat Yusof,
Marine Officer,
Marine Department of Peninsular Malaysia.

4. Mr. Zulkurnain b. Ayub
Marine Officer,
Marine Department of Peninsular Malaysia.

5. Mr. Azimbazri b. Abdul Shukor,
Superintendent Nav aids,
Light Dues Board.

6. Lt. Cdr. Abd. Razak b. Hassan,
Hydrographic Directorate,
Department of Navy,
Ministry of Defence.

7. Capt. Hj. Abdul Rahim bin Abd. Aziz,
Assistant General Manager (K),
Klang Port Authority.

8. Mr. Shahrull Allam Shah b. Abd. Halim,
Assistant Secretary,
Prime Minister's Department.
9. Mr. Abdullah Yusuff b. Basiron,
Principal Assistant Secretary,
Maritime Division,
Ministry of Transport.
10. Cdr. Mohammed Noordin b. Ali,
Maritime Operation Specialist,
Prime Minister's Department.
11. Mr. K. Thillainadarajan,
Principal Assistant Director,
External Assistance Section,
Economic Planning Unit.
12. Mr. James Gan,
Principal Assistant Secretary,
Maritime Affairs,
Ministry of Foreign Affairs.

INDONESIA

1. Captain Syahwin Hamid,
Director of Navigation,
Directorate General of Sea Communication.
2. Captain Tarcisius Walla,
Staff,
Directorate General of Sea Communication.
3. Mr. Heru Prasetyo,
Staff, Legal Division,
Directorate General of Sea Communication.

4. Col. M. Makmur Sulaeman,
Commanding of Indonesian Hydrographic-Survey Ship's Group
Indonesian Navy Hydrographic Department.

5. Lt. Col. Bambang Sukomulyono,
Naval Attache,
Embassy of the Republic of Indonesia.

6. Mr. Suryanto,
Communication Attache,
Embassy of the Republic of Indonesia.

SINGAPORE

1. Mr. Parry Oei,
Assistant Hydrographer,
Port of Singapore Authority.

2. Mr. Peter Chong,
First Secretary,
Singapore High Commission.

JAPAN

1. Mr. Ryo Takagi,
Senior Assistant,
Development Cooperation Division,
Economic Cooperation Bureau,
Ministry of Foreign Affairs.

2. Dr. Shoichi Oshima,
Director,
Planning Division,
Hydrographic Department,
Maritime Safety Agency.

3. **Mr. Shoichi Kokuta,
Senior Coastal Survey Officer,
Coastal Survey & Cartography Division,
Hydrographic Department,
Maritime Safety Agency.**

4. **Mr. Hisayasu Horike,
Senior Officer for International Cooperation,
Second International Affairs Division,
Ministry of Transport.**

5. **Mr. Toshihisa Hasegawa,
Staff,
First Development Study Division,
Social Development Study Department,
Japan International Cooperation Agency.**

6. **Mr. Hirohiko Takata,
Staff,
First Project Formulation Study Department,
Project Formulation Study Department,
Japan International Cooperation Agency.**

7. **Mr. Toshio Kaibara,
Deputy Resident Representative,
JICA Malaysia Office.**

8. **Mr. Yuzo Yamamoto,
Assistant Resident Representative,
JICA Malaysia Office.**

AGENDA

**RE-SURVEY OF ONE FATHOM BANK AREA AND INVESTIGATION
OF DANGEROUS/UNCONFIRMED SHOALS AND WRECKS IN THE
MALACCA AND SINGAPORE STRAITS
KUALA LUMPUR, 12 - 13 JANUARY 1995**

1. Introduction
2. Election of Chairman and Vice-Chairman
3. Adoption of Agenda
4. Business Arrangements
5. Procedural Requirement for the Re-Survey Works
6. Briefing on the Scope of Work on the Re-Survey of One Fathom Bank And Investigation of Dangerous/ Unconfirmed Shoals and Wrecks In The Malacca and Singapore Straits
7. Consideration of the Indonesian Position Paper
8. Discussion
 - (i) Scope of the Full Scale Study (Study Objective & Items)
 - (ii) Survey Areas & Points
 - (iii) Study Process & Phases
 - (iv) Undertaking of Each Country
 - (v) Steering Committee & Working Group for the Full Scale Study (Coordination & Supervision)
9. Other Matters
10. Consideration and Adoption of Minutes of Meeting

EXTRACT OF THE
REPORT OF THE MEETING OF THE WORKING GROUP OF
THE TRIPARTITE TECHNICAL EXPERTS GROUP
ON THE SAFETY OF NAVIGATION IN
THE STRAITS OF MALACCA AND SINGAPORE

18 - 20 JANUARY 1994

LANGKAWI, MALAYSIA

**RE-SURVEY OF ONE FATHOM BANK AREA AND
INVESTIGATION OF DANGEROUS/UNCONFIRMED
SHOALS AND WRECKS IN THE MALACCA AND SINGAPORE STRAITS**

9. Malaysia informed the Meeting on the progress of Re-Survey of One Fathom Bank Area and Investigation of Dangerous/Unconfirmed Shoals and Wrecks in the Malacca and Singapore Straits since the 18th TTEG meeting and the letter dated 4th August, 1993 from the Japanese Government in Annex C.

Indonesia agreed to the proposed areas but further proposed investigation of shoals and wrecks as given in Annex D.

10. The Meeting established a Subworking Group to Study the areas to be surveyed, their priorities and scope of work including the aspects of expenses to be borne by all sides. The Subworking Group Report appears in Annex E. The Meeting adopted the report of the Subworking Group.

11. The Meeting agreed on the need to meet the Japanese counterparts preferably in Japan or alternatively in any other suitable venue. The Meeting also agreed that Malaysia pursue communications with Japan on the proposal for the implementation of the project based on the scope of work as recommended by the Subworking Group. As an indication to Japan that a consensus has been reached, the communication will be made after the endorsement of the report of the Subworking Group has been obtained from the governments of the littoral States.

12. The Meeting agreed that the project on re-survey of One Fathom Bank and investigation of dangerous/unconfirmed shoals and wrecks in the Straits of Malacca and Singapore be implemented jointly by the three littoral States and that the Japanese counterparts be convinced of the practicality of joint implementation during the meeting with them.

ANNEX C

**LETTER FROM THE EMBASSY OF JAPAN, MALAYSIA TO
MINISTRY OF TRANSPORT, MALAYSIA ON THE RESURVEY OF
SHOAL PATCHES AND WRECKS IN THE STRAITS OF
MALACCA AND SINGAPORE**

EMBASSY OF JAPAN,

No. 11, Pesisiran Seror,
Off Jalan Tun Razak,
50450 Kuala Lumpur,
Malaysia.

Ref: No. 0378/93

4 August, 1993

Madam O.C. Phang
Under Secretary
Maritime Division
Ministry of Transport
Wisma Dungun
Damansara Height
50616 Kuala Lumpur.

(Att.: Mr. Abdullah Yusof)

Dear Madam,

The Resurvey of Shoal Patches and Wrecks in The Straits
of Malacca and Singapore

With reference to the above subject and your letter Ref: KP/BM/JL/63/7 Jld. 5(2) dated 24 June 1993, I was directed to inform you of the Government of Japan's intention for your request on Resurvey in the Straits.

As for this request, the Government of Japan has found the following problems at this moment:

1. The Government of Japan had been investigated hydrographic survey in cooperation with private sectors of Japan from 1968 to 1979 in the Straits. At the present, at the time of the resurvey, in this circumstance which is difficult to expect private funds, we must consider to be investigated by an official only. The Government of Japan requests to three countries (Indonesia, Malaysia and Singapore) for allotment of the expenses.
2. The Government of Japan has prepared the Scope of Works (Draft) as two appended papers. Regarding to these papers, I request you to coordinate that the three countries will be made up mutual agreement or alternative proposal for the resurvey in the Straits. After reach the mutual consensus, I would like to get the response from you.
3. Regarding to participant of Japan at the meeting for a resurvey in the Straits, the Government of Japan will going to define our attitude after examine for your response from points of view efficient, effective.

4. The other side, when making a basis consensus of the three countries, this project need an official procedure in conformity with ODA (Official Development Assistance) of Japan for first step.

Thank you.

Yours faithfully,


K. Kambara
Second Secretary.

SCOPE OF WORK (Draft)

1. Study Area

9 Areas as per Attached Annex I

2. Study Items

- (1) Horizontal control survey
- (2) Tidal and Current observation
- (3) Sounding

(The standard interval between lines of sounding is 50m.)

- (4) Positioning fixing

(Positioning of sounding shall be determined by GPS/NNSS.)

- (5) Bottom sampling survey

- (6) Data processing and development of plotting sheets.

3. On Expenses

[Japanese Side]

- ① Study Team
- ② Survey ship (survey boat only)
- ③ vehicles
- ④ Assistant survey engineers
- ⑤ Survey and other necessary equipment

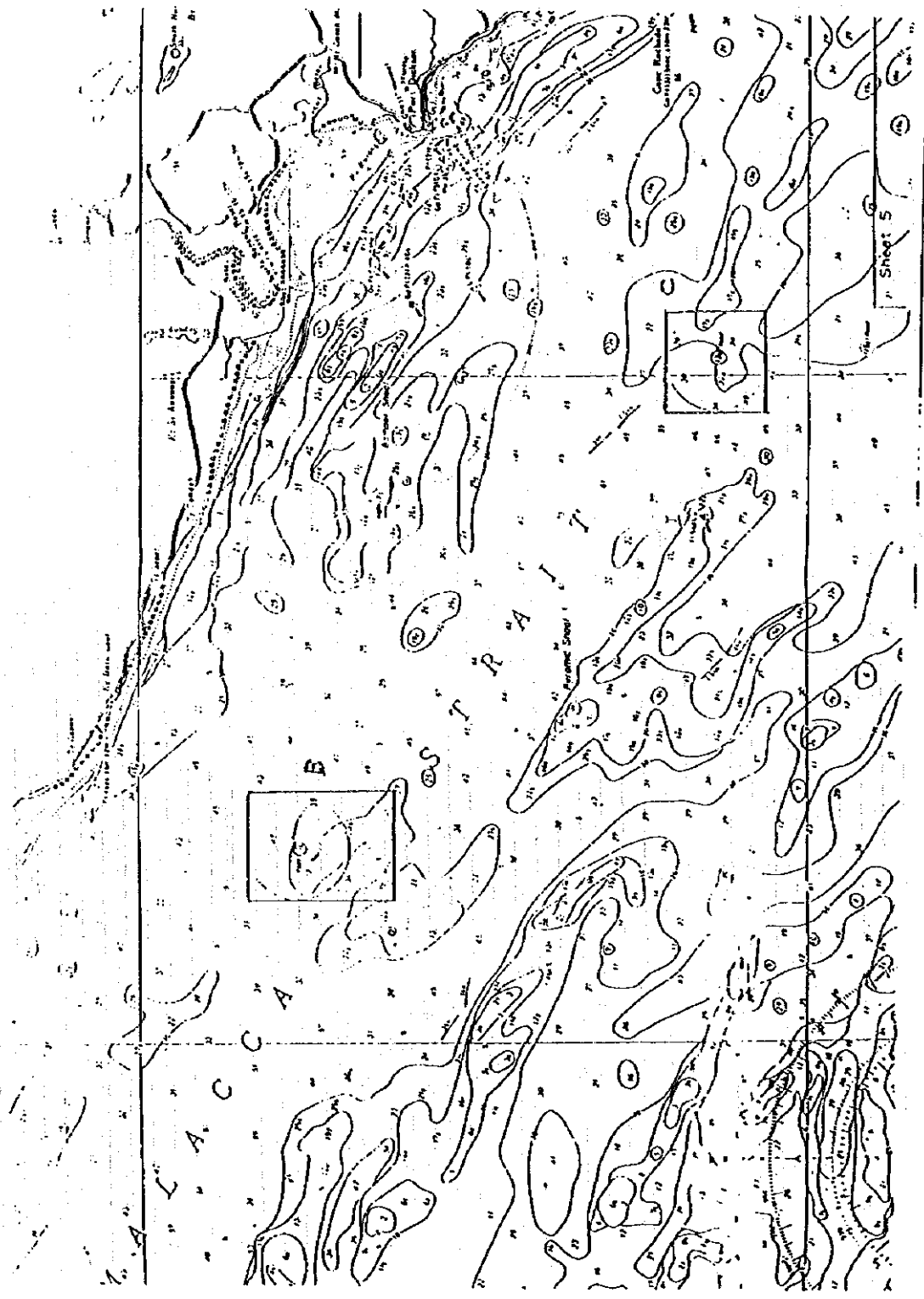
[3 countries Side]

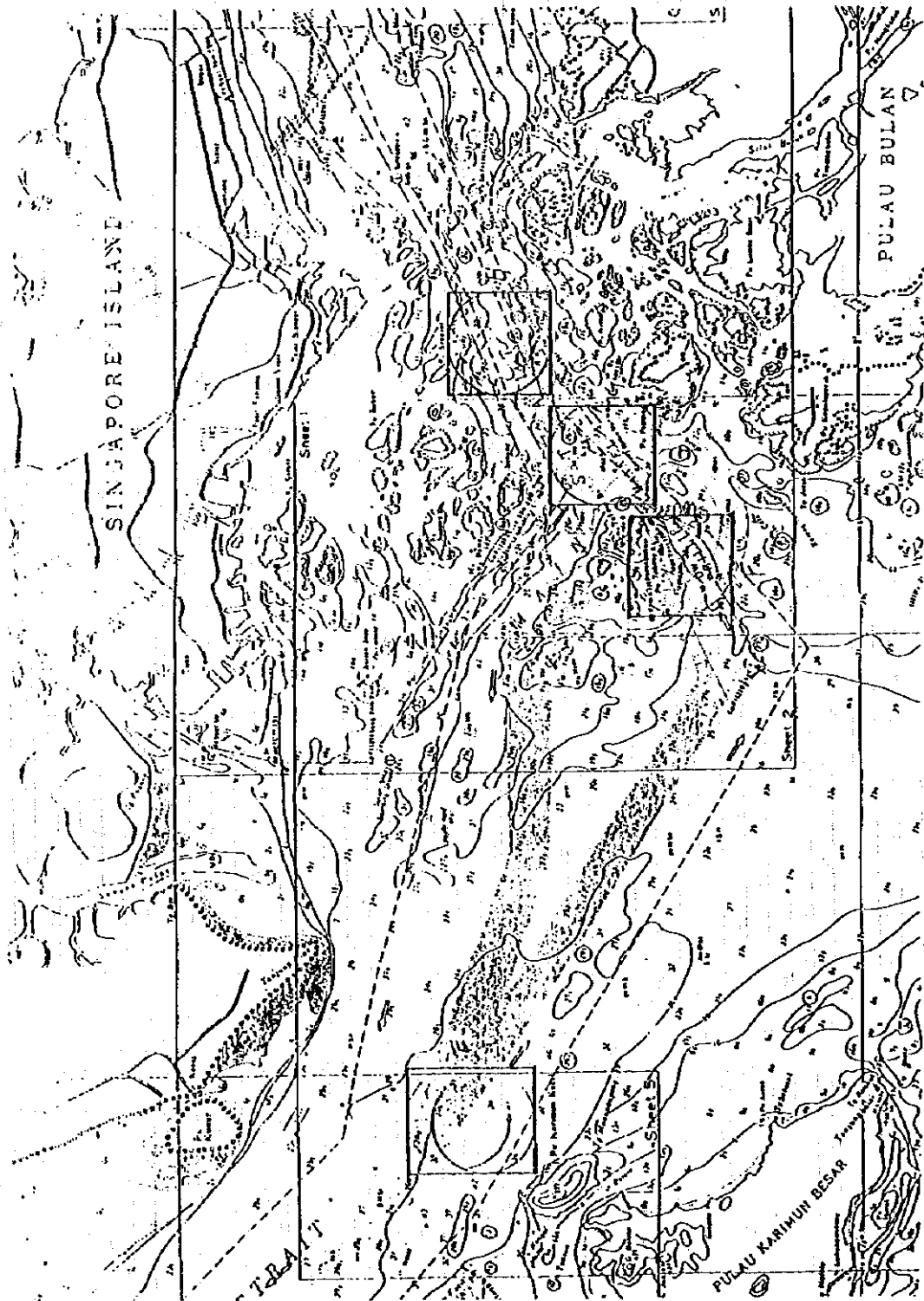
- ① Supervisor
- ② Mother ship (including ship, fuel and crew)

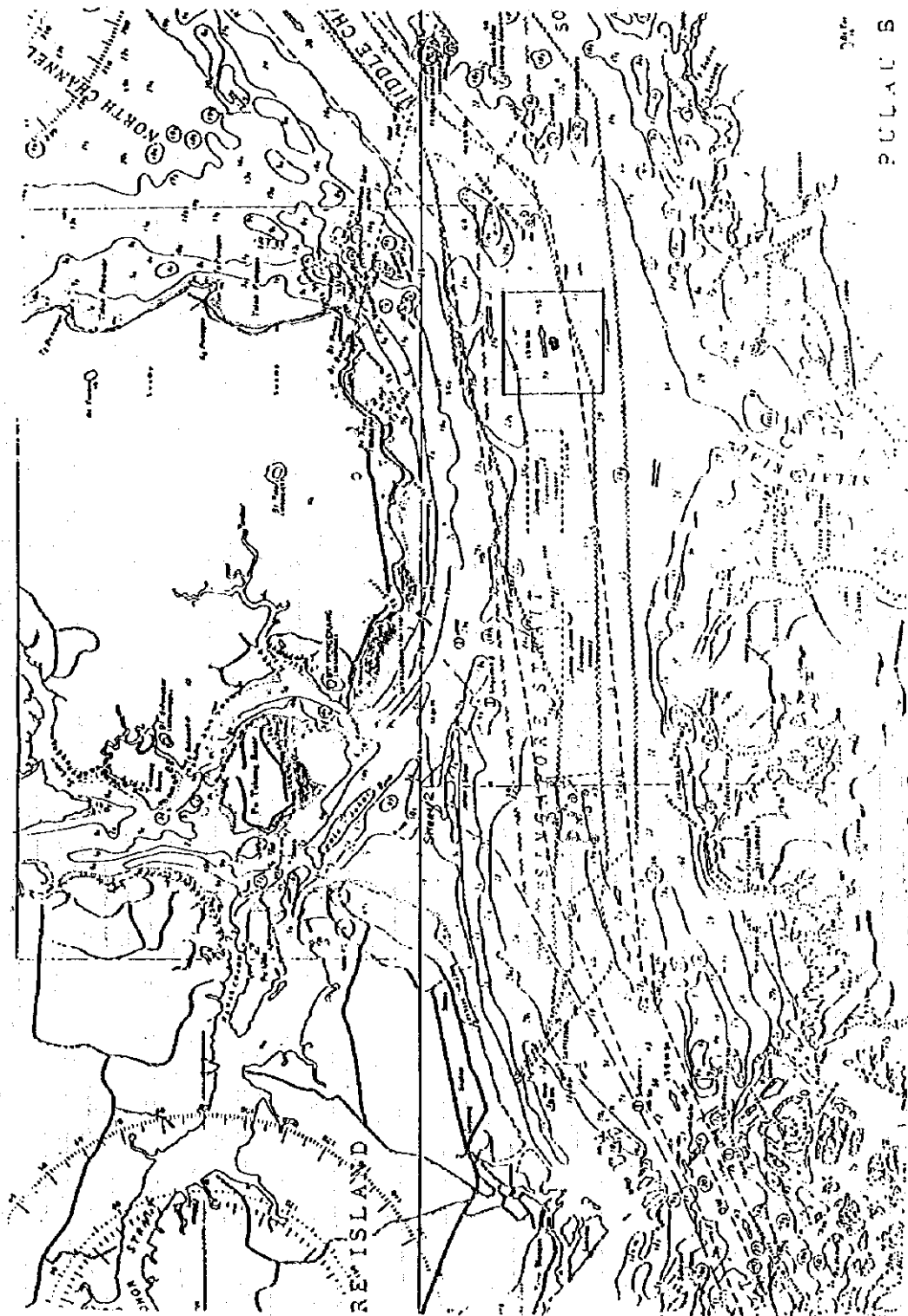
Hydrographic Survey of the Malacca-Singapore Straits (Location of 9 areas)

Area	1	2	3	4	Remarks
A	2° - 50' 2" N	2° - 50' 2" N	2° - 44' 5" N	2° - 44' 5" N	(15°) 2° - 48' 7" N 101° - 00' 8" E
	100° - 59' 3" E	101° - 03' 6" E	101° - 03' 6" E	100° - 59' 3" E	(17°) 2° - 47' 0" N 101° - 02' 1" E
					(17°) 2° - 46' 0" N 101° - 02' 1" E
B	2° - 35' 7" N	2° - 36' 7" N	2° - 30' 4" N	2° - 32' 4" N	(18°) 2° - 35' 2" N 101° - 25' 5" E
	101° - 24' 4" E	101° - 27' 5" E	101° - 27' 5" E	101° - 24' 4" E	(13°) 2° - 33' 9" N 101° - 25' 0" E
C	2° - 24' 1" N	2° - 24' 1" N	2° - 21' 1" N	2° - 21' 1" N	(15°) 2° - 22' 5" N 101° - 47' 5" E
	101° - 39' 1" E	101° - 42' 1" E	101° - 43' 1" E	101° - 39' 1" E	
D	1° - 57' 6" N	1° - 57' 6" N	1° - 54' 0" N	1° - 54' 0" N	(23°) 1° - 55' 1" N 102° - 14' 1" E
	102° - 12' 6" E	102° - 15' 9" E	102° - 15' 9" E	102° - 12' 6" E	(24°) 1° - 55' 5" N 102° - 15' 4" E
E	1° - 13' 3" N	1° - 13' 3" N	1° - 08' 3" N	1° - 09' 3" N	(51°) 1° - 11' 8" N 103° - 25' 9" E
	103° - 24' 3" E	103° - 27' 4" E	103° - 27' 4" E	103° - 24' 3" E	(52°) 1° - 10' 8" N 103° - 25' 8" E
F	1° - 36' 7" N	1° - 06' 7" N	1° - 07' 7" N	1° - 03' 7" N	(43°) 1° - 05' 2" N 103° - 42' 1" E
	103° - 40' 6" E	103° - 43' 6" E	103° - 43' 6" E	103° - 40' 6" E	
G	1° - 09' 1" N	1° - 09' 1" N	1° - 05' 1" N	1° - 06' 1" N	(42°) 1° - 07' 6" N 103° - 45' 4" E
	103° - 43' 9" E	103° - 46' 9" E	103° - 45' 9" E	103° - 43' 9" E	
H	1° - 12' 0" N	1° - 12' 0" N	1° - 08' 0" N	1° - 09' 0" N	(55°) 1° - 10' 5" N 103° - 45' 9" E
	103° - 47' 4" E	103° - 50' 4" E	103° - 50' 4" E	103° - 47' 4" E	
I	1° - 17' 5" N	1° - 17' 5" N	1° - 14' 5" N	1° - 14' 5" N	(1° - 16' 0" N 104° - 15' 0" E
	104° - 13' 5" E	104° - 16' 5" E	104° - 15' 5" E	104° - 13' 5" E	

Note : ① Longitude and latitude above (1~4) shows the 4 corners of each area (A~I).
 ② Longitude and latitude in a remarks column shows the points where sunken ships or shallows are confirmed.







ANNEX D

INDONESIAN INFORMATION PAPER

**RESURVEY AND INVESTIGATION OF THE NAVIGATIONAL
HAZARD**

1. Resurvey And Investigation of The Navigational Hazards

Basically Resurvey and Investigation of dangerous/unconfirmed shoals and wreck at One Fathom Bank area, Malacca and Singapore Straits is one of the basic needs in supporting the safety of navigation in those straits; the results should be officially announced through notice to mariners and the new navigational hazards which have been founded should be published in nautical documents and printed in nautical chart. To obtain good result in supporting the safety of navigation, to indicate those hazards visual aids to navigation is necessary. The draft scope of work which has been forwarded by the government of Japan to the Ministry of Transport and which has been informed to us is adequate i.e :

- a. Area "A", Area "B" and Area "F" are acceptable.
- b. Area "C" is o.k but is should be noted to confirm to a shallow water in position 02-10-20N /101-51-22E (Indonesian chart Nr. 351, 1985).
- c. Area "D" is agreeable but please confirm to one wreck in position 01-54-20N/102-04-38 E (Indonesian chart Nr, 351, 1985).
- d. Area "E" is o.k. but please check 2 (two) wrecks in position 01-12-11N/103-34-20E and 01-10-48N/103-32-52E (Indonesian chart Nr. 352, 1985).
- e. Area "G" is acceptable but please confirm one wreck in position 01-06-06N/103-45-00E and a shallow water in position 01-06-06N/103-45-00E and a shallow water in position 01-07-12N/103-46-30E (Indonesian chart Nr. 352, 1985).
- f. Area "H" is o.k. please confirm 2 (two) wrecks in position 01-13-40N/2103-56-24E and 01-11-05N/103-57-20E and also a 14 mtrs water depth in position 01-09-30N/103-48-18E (Indonesian chart Nr. 352, 1985).
- g. Area "I" please check the existing submarine cables.

We also suggest an interval sounding of 10 mtrs should be done at the location of the founded wreck.

We wish that the execution of the survey shall employ the survey vessel of the government of Republic Indonesia with the joint team of the four countries (Indonesia, Malaysia, Singapore and Japan) and all expenses should be donated by the government of Japan.

ANNEX E

**REPORT OF THE TECHNICAL SUB-WORKING GROUP ON
HYDROGRAPHIC SURVEYING OF WORKING GROUP OF THE
TRIPARTITE TECHNICAL EXPERTS GROUP ON THE SAFETY OF
NAVIGATION IN
THE STRAITS OF MALACCA AND SINGAPORE**

**MEETING OF THE TECHNICAL SUB-WORKING GROUP
ON HYDROGRAPHIC SURVEYING OF WORKING GROUP
OF THE TRIPARTITE TECHNICAL EXPERT GROUP ON
THE SAFETY OF NAVIGATION IN THE
STRAITS OF MALACCA AND SINGAPORE**

18TH - 20TH JANUARY, 1994, LANGKAWI, MALAYSIA.

1. Terms of Reference (TOR)

The TOR of the Sub-Working Group are to arrive at a consensus to decide on the areas to be jointly surveyed in order of priority and prepare a preliminary scope of works.

2. On the basis of the Original Proposal Paper (Appendix 1) and Working Group Report (Appendix 2) of the Fifteenth TTEG in 1987, the Sub-Working Group considered the further proposals made by Japan (Appendix 3) together with Indonesia (Appendix 4) and Malaysia (Appendix 5).
3. The Sub-Working Group considered and made the following recommendations.

4. Survey (Study) Area

The survey areas in order of priority are :

a. Category 1

(1) Area A (Enlarged)

- (a) 02° 51'.4N, 100° 57'.2E
- (b) 02° 48'.3N, 101° 03'.4E
- (c) 02° 45'.0N, 101° 03'.4E
- (d) 02° 45'.0N, 101° 01'.3E
- (e) 02° 48'.9N, 100° 54'.1E

(2) Area E

- (a) 01° 13'.3N, 103° 24'.3E
- (b) 01° 13'.3N, 103° 27'.4E
- (c) 01° 09'.3N, 103° 27'.4E
- (d) 01° 09'.3N, 103° 24'.3E

(3) Area F

- (a) 01° 06'.7N, 103° 40'.6E
- (b) 01° 06'.7N, 103° 43'.6E
- (c) 01° 03'.7N, 103° 43'.6E
- (d) 01° 03'.7N, 103° 40'.6E

(4) Area G

- (a) $01^{\circ} 09'.1N, 103^{\circ} 43'.9E$
- (b) $01^{\circ} 09'.1N, 103^{\circ} 46'.9E$
- (c) $01^{\circ} 06'.1N, 103^{\circ} 46'.9E$
- (d) $01^{\circ} 06'.1N, 103^{\circ} 43'.9E$

(5) Area H

- (a) $01^{\circ} 12'.0N, 103^{\circ} 47'.4E$
- (b) $01^{\circ} 12'.0N, 103^{\circ} 50'.4E$
- (c) $01^{\circ} 09'.0N, 103^{\circ} 50'.4E$
- (d) $01^{\circ} 09'.0N, 103^{\circ} 47'.4E$

(6) Area I

- (a) $01^{\circ} 17'.5N, 104^{\circ} 13'.5E$
- (b) $01^{\circ} 17'.5N, 104^{\circ} 16'.5E$
- (c) $01^{\circ} 14'.5N, 104^{\circ} 16'.5E$
- (d) $01^{\circ} 14'.5N, 104^{\circ} 13'.5E$

b. Category 2

(1) Area B

- (a) $02^{\circ} 36'.7N, 101^{\circ} 24'.4E$
- (b) $02^{\circ} 36'.7N, 101^{\circ} 27'.5E$
- (c) $02^{\circ} 32'.4N, 101^{\circ} 27'.5E$
- (d) $02^{\circ} 32'.4N, 101^{\circ} 24'.4E$

(2) Area C (Enlarged)

- (a) $02^{\circ} 23'.4N, 101^{\circ} 40'.2E$
- (b) $02^{\circ} 23'.4N, 101^{\circ} 45'.0E$
- (c) $02^{\circ} 21'.8N, 101^{\circ} 45'.0E$
- (d) $02^{\circ} 21'.8N, 101^{\circ} 40'.2E$

(3) Area D

- (a) $01^{\circ} 57'.6N, 102^{\circ} 12'.6E$
- (b) $01^{\circ} 57'.6N, 102^{\circ} 16'.9E$
- (c) $01^{\circ} 54'.0N, 102^{\circ} 16'.9E$
- (d) $01^{\circ} 54'.0N, 102^{\circ} 12'.6E$

(4) Area J (Shallow Patch)

- (a) 02° 17'.6N, 101° 48'.2E
- (b) 02° 17'.6N, 101° 49'.6E
- (c) 02° 15'.0N, 101° 51'.1E
- (d) 02° 15'.0N, 101° 49'.6E

(5) Area K (Shallow Patch)

- (a) 02° 18'.2N, 101° 52'.8E
- (b) 02° 18'.8N, 101° 53'.4E
- (c) 02° 17'.0N, 101° 55'.4E
- (d) 02° 16'.0N, 101° 54'.8E

(6) Area L (Shallow Patch)

- (a) 01° 46'.2N, 102° 42'.8E
- (b) 01° 42'.6N, 102° 50'.0E
- (c) 01° 42'.0N, 102° 49'.8E
- (d) 01° 45'.8N, 102° 42'.6E

(7) The following wrecks and shoals :

- a. Shoal (No. 21) 02° 10'.3N, 101° 51'.3E
- b. Wreck PA (No. 26) 01° 46'.4N, 102° 43'.3E
- c. Wreck PD (No. 33) 01° 33'.9N, 103° 05'.1E
- d. Wreck (No. 38) 01° 12'.2N, 103° 34'.7E
- e. Wreck (No. 42) 01° 06'.1N, 103° 45'.0E
- f. Wreck PA (No. 52) 02° 28'.0N, 101° 35'.2E
- g. Shoal Repd (No. 53) 02° 15'.9N, 101° 47'.7E
- h. Wreck (No. 54) 01° 54'.3N, 102° 04'.6E
- i. Wreck (No. 55) 01° 10'.8N, 103° 32'.9E
- j. Wreck (No. 56) 01° 07'.2N, 103° 46'.5E

(Numbers referred above are in accordance with Appendix 1. Numbers 52-56 are new wrecks/shoals not previously identified.)

5. Horizontal Datum

WGS 84 Datum shall be adopted as horizontal datum throughout the entire survey.

6. Tidal and Current Observations

A pressure or float tide gauge is to be established at location previously established during the last Joint Survey (or nearest to it) for observation of 30 days for the sounding datum to be determined by analysis. A tide pole is also to be erected to relate the datum to the benchmark and to check the tide gauge. Current observation is also required at a suitable position for 30 days.

7. **Sounding**

A single or multi beam echosounder shall be deployed for sounding generally at intervals 50 metres. Sounding lines will be intensified as necessary on detection of any shoal/wreck. If a heave compensator is to be used, they are to be deployed continuously. Echo sounders are to be calibrated by bar check in accordance with normal surveying standards. Orientation of sounding lines are to be decided in the field. The conduct of sounding shall conform with IHO standards. For disproving of shoal/wreck, the criteria in accordance with SP 44 is to be adhered. For further confirmation, contact wire sweeps or divers may be deployed.

8. **Positioning Fixing**

Electronic Positioning Fixing System/Differential Global Positioning System (DGPS) from coordinated geodetic station ashore (better than 3rd Order) will be used.

9. **Bottom Sampling**

Bottom Sampling shall be carried out at regular intervals for bottom classification and sonar interpretation.

10. **Data Processing**

Initial data processing should be carried out in the field. Final data processing shall be carried out at a convenient common location to be decided later.

11. **Expenses**

Each coastal state is recommended to provide a hydrographer-in-charge (supervisor) and survey ship. Japan will make available the following :

- a. Study Team
- b. Survey ship (survey boat only)
- c. Vehicles
- d. Assistant Survey Engineers
- e. Survey and other necessary equipment.

**LIST OF MEMBERS SUB-WORKING GROUP
ON HYDROGRAPHIC SURVEYING OF TECHNICAL WORKING
GROUP OF THE TRIPARTITE TECHNICAL EXPERTS GROUP
ON THE SAFETY OF NAVIGATION IN
THE STRAITS OF MALACCA AND SINGAPORE**

- | | | |
|----|--|-------------|
| 1. | Commodore Mohd. Rasip b. Hassan | - Malaysia |
| 2. | Datuk Capt. Hanizah b. Mohd Noor | - Malaysia |
| 3. | Capt. P.J. Thomas | - Singapore |
| 4. | Mr. Parry Oei | - Singapore |
| 5. | Capt. Haji Abd. Rahim b. Abd. Aziz | - Malaysia |
| 6. | Mr. Makmur Sulaiman | - Indonesia |
| 7. | Mr. Wisnu Suwarsono | - Indonesia |
| 8. | Lt. Cdr. Abd. Razak b. Abu Hassan, RMN | - Malaysia |

MALAYSIAN PAPER
INVESTIGATION OF WRECKS AND SHOALS IN
THE STRAITS OF MALACCA AND SINGAPORE

1. Wreckage or artificial obstructions which stand significantly proud of the surrounding seabed may constitute a hazard to shipping navigating over continental shelf areas, and all must be located, examined and recorded. The criteria for their examination, in accordance to the International Hydrographic Organization standard are as follows:

(a) POSITION

B.1.5 - The position of soundings, dangers and all other significant features should be determined with an accuracy such that any probable error, measured relative to shore control, shall seldom exceed twice the minimum plottable error at the scale of the survey (normally 1.0 mm on paper). It is most desirable that whenever positions are determined by intersection of lines of position, three such lines be used. The angle between any pair should not be less than 30 degs.

(b) DEPTH

C.2.1 - Wrecks and obstructions which may have depths less than 40 metres and may be dangerous to surface navigation must, whenever possible, be physically examined by diving or sweeping to determine the least depth over them. The same standard of accuracy should be attained, where equipment permits, as for soundings specified in C.1.1.

2. Other factors which should be considered are:

a. So long as a wreck or obstruction continues to be a hazard to navigation or other marine activity (such as anchoring or fishing) it must appear on the chart.

b. In addition to wrecks and obstructions which are charted, any

objects which have been described as giving 'non-sub'* echoes or which may constitute a 'foul' on the seabed must be found, fixed and recorded whether dangerous to shipping or not, or, they must be disproved.

c. The onus is on the hydrographer to confirm or disprove every charted wreck, obstruction or contact previously classified as 'non-sub', unless disproved beyond doubt, they must remain on the chart and/or in records.

d. Newly located wrecks which are dangerous to navigation, or charted wrecks which are significantly different in position or depth must be reported without delay.

e. The examination of all shoal indications whether new or already charted, is one of the most important aspects of any survey. No surveying can be considered complete until all such shoals have been examined, and any charted shoals which have not been located have been disproved.

3. Annex A to this paper is a list of wrecks, obstructions and shoals currently to be found in the Straits of Malacca and Singapore. It is by no means exhaustive and is compiled only to give an idea of the large extent of dangers that abound the Straits of which accurate records of position and depth are lacking. They are a danger to the safety of navigation within the Straits.

4. For any country to take up a comprehensive survey to either confirm or disprove the existence of these dangers will constitute an enormous task. The task however remains and is in fact increasing as the number of reported wrecks and shoals grows. At the same time reports cannot be ignored but will have to be put on the charts making the Straits appear

* Non-sub- Unconfirmed, cannot be substantiated, having no proper records of how depths or positions were obtained.

to be a more hazardous area to navigate.

5. It is therefore recommended that the issue be discussed and proposals be made to overcome the problem in the interest of safety for international shipping using the Straits. A four - nation joint investigation would likely be the appropriate and required solution.

15th TTEG
Kuala Lumpur.

(a) No.	Lat./Long. (OMS)	Wreck or Shoal	(c)	Chart No.	(e) Remarks
1	50 34N 100 52E	Wreck	3945		Depth over wreck unknown but thought to be < 20m. Average depth in area is 60m. Considered dangerous.
2	50 37 45N 100 50 30E	Wreck	3945		Position approximate. Reported 1968. Depth over wreck unknown but thought to be < 20m. Average depth in area is 70m. Considered dangerous.
3	50 50N 100 50E	Wreck	3945		Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 33m. Considered dangerous.
4	50 50N 100 50E	Wreck	3945		Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
5	50 50N 100 50E	Wreck	3945		Unsurveyed wreck. Position approximate. Considered to have safe clearance of 35m.
6	50 50 30N 100 49 10E	Shoal	3945		Reported (1962) unconfirmed shoal sounding of 35m in area of average depth of 70m.
7	50 50 30N 100 49 10E	Shoal	3945		Reported (1966) unconfirmed shoal sounding of 29m in area of average depth of 70m.
8	50 50 30N 100 49 10E	Shoal	3945		Reported (1962) unconfirmed shoal sounding of 33m in area of average depth of 70m.
9	50 50 30N 100 49 10E	Obstruction	3945		Obstruction. Nature unspecified. Considered dangerous.
10	50 50 30N 100 49 10E	Wreck	3945		Unsurveyed wreck. Exact depth unknown. Considered to have safe clearance at depth of 70m.
11	50 50 30N 100 49 10E	Wreck	3945		Unsurveyed wreck. Exact depth unknown. Considered to have safe clearance at depth of 50m.
12	50 50 30N 100 49 10E	Wreck	3945		Unsurveyed wreck. Exact depth unknown. Considered to have safe clearance at depth of 40m.
13	50 07 55N 100 52 04E	Wreck	3945		Wreck lies on bank of average depth of 10m. Sounding of 10m over wreck obtained.

(a)	(b)	(c)	(d)	(e)
14	02 58 10N 101 49 15E	wreck	3945	Position approximate. Depth over wreck unknown but thought to be (28m). Average depth in area is 21m. Considered dangerous.
15	02 55 00N 100 55 24E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 20m in area of average depth of 25m. Considered dangerous.
16	02 50 54N 101 11 26E	wreck	3946	Position approximate. Depth over wreck unknown but thought to be (28m). Average depth in area is 30m. Considered dangerous.
17	02 50 30N 101 20 58E	wreck	3946	Position approximate. Reported 1972. Depth over wreck unknown but thought to be (28m). Average depth in area is 30m. Considered dangerous.
18	02 50 10N 101 20 58E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 17.0m in area of average depth of 30m.
19	02 49 50N 101 20 58E	Shoal	3946	Reported (1972) unconfirmed shoal sounding of 15.0m in area of average depth of 30m.
20	02 49 25N 101 20 58E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 19.0m in area of average depth of 25m.
21	02 49 10N 101 20 58E	Shoal	3946	Reported (1972) unconfirmed shoal sounding of 19.0m in area of average depth of 22m.
22	02 48 50N 101 20 58E	Shoal	3946	Reported (1975) unconfirmed shoal sounding of 16m in area of average depth of 25m.
23	01 54 26N 100 11 06E	wreck	3947	Position approximate. Depth over wreck unknown but considered to have safe clearance at 15m. Average depth in area is 40m.
24	01 54 26N 100 11 06E	wreck	3947	Reported (1975) unconfirmed depth of 17m over wreck. Average depth in area is 40m.
25	01 54 02N 100 11 06E	Shoal	3947	Reported (1964) unconfirmed shoal sounding of 17.0m in area of average depth of 30m.
		wreck	3947	Position approximate. Depth over wreck unknown but thought to be (28m). Average depth in area is 30m. Considered dangerous.
		wreck	3947	Position approximate. Depth over wreck unknown but thought to be (28m). Average depth in area is 13m.

(a)	(b)	(c)	(d)
28	01 46 06N 102 50 58E	wreck	Depth over wreck unknown but thought to be < 28m. Average depth in area is 15m. Considered dangerous.
29	01 43 18N 102 54 15E	wreck	Depth over wreck unknown but thought to be < 28m. Average depth in area is 15m.
30	01 25 48N 102 44 22E	wreck	Position approximate. Nets only visible.
31	01 20 12N 102 52 10E	wreck	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 15m. Considered dangerous.
32	01 36 00N 103 06 02E	wreck	Depth over wreck unknown but thought to be < 28m. Average depth in area is 15m. Considered dangerous.
33	01 33 58N 103 05 54E	wreck	Position doubtful. Depth over wreck unknown but thought to be < 28m. Average depth in area is 20m. Considered dangerous.
34	01 38 16N 103 04 38E	wreck	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 11m. Considered dangerous.
35	01 29 10N 103 08 23E	Shoal	Reported (1973) unconfirmed shoal sounding of 29m in area of average depth of 35m.
36	01 25 48N 103 11 12E	Shoal	Reported (1973) unconfirmed shoal sounding of 27m in area of average depth of 35m.
37	01 14 03N 103 10 24E	wreck	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 20m. Considered dangerous.
38	01 12 10N 103 34 18E	wreck	Position approximate. Reported. Depth over wreck unknown but thought to be < 28m.
39	01 11 20N 103 32 12E	wreck	Depth over wreck unknown but thought to be < 28m. Average depth in area is 30 m. Considered dangerous.
40	01 04 42N 103 30 24E	wreck	Position approximate. Depth over wreck unknown but thought to be < 28m. Considered dangerous.
41	00 55 12N 103 35 20E	wreck	Reported. Depth over wreck unknown but thought to be < 28m. Considered dangerous.

(a)	(b)	(c)	(d)	(e)
42	01 07 34N 105 45 25E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
43	01 05 14N 105 45 05E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
44	01 05 34N 105 45 55E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
45	01 05 14N 105 45 05E	Obstruction	CDC Sheet 6	Obstruction. Nature unspecified. Considered dangerous.
46	01 05 34N 105 45 55E	Wreck	CDC Sheet 6	Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
47	01 05 14N 105 45 05E	Wreck	CDC Sheet 6	Position approximate. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
48	01 05 34N 105 45 55E	Wreck	CDC Sheet 6	Position approximate. Reported. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
49	01 05 14N 105 45 05E	Wreck	CDC Sheet 6	Reported. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
50	01 05 34N 105 45 55E	Wreck	CDC Sheet 6	Position approximate. Reported. Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.
51	01 05 14N 105 45 05E	Wreck	CDC Sheet 6	Depth over wreck unknown but thought to be < 28m. Average depth in area is 30m. Considered dangerous.

WORKING GROUP REPORT

The Working Group considered and made the following recommendations:-

A. Harmonization of Aids to Navigation

1. Batu Berhanti Light Beacon - no change, earlier decision stands.
2. Takong Area - No change.
3. Buffalo Rock Lt. Beacon - to be changed to North Cardinal mark with light characteristic Q.
4. Nipa Lt. Beacon - to be changed to general mark and the characteristic of the light to be different from all other lights in the Takong area.

B. Problem of the Knocking Down of Aids to Navigation

To crop the shoals.

C. Wrecks and Shoals Investigation

For the purposes of investigations, wrecks and shoals should be classified into the following categories:-

Category I : those inside the TSS or direct approaches to the TSS.

Category II : those outside the TSS but inside the general shipping route.

Category III : Those outside the general shipping route.

List of wrecks and shoals (Refer to Annex O of the main report).

Category I : Nos.: 6, 7, 8, 9, 10, 11, 12, 14, 15, 17, 35, 36, 38, 39, 40, 42, 43, 46, 48, 50, S1, S2, S3, S4, S5, S6 (as attached).

Category II : Nos.: 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 33, 41.

Category III : Nos.: 1, 2, 3, 4, 5, 13, 27, 28, 30, 31, 32, 34, 37, 44, 45, 47, 49, 51.

The Working Group recommended that a joint investigation of the relevant charts and the physical location of the wrecks and shoals be carried out.

LIST OF WRECKS AND DANGERS IN MALACCA & SINGAPORE STRAITS ROUTING SYSTEM
 REPORTED AFTER IMPLEMENTATION OF TSS ON 1.5.87

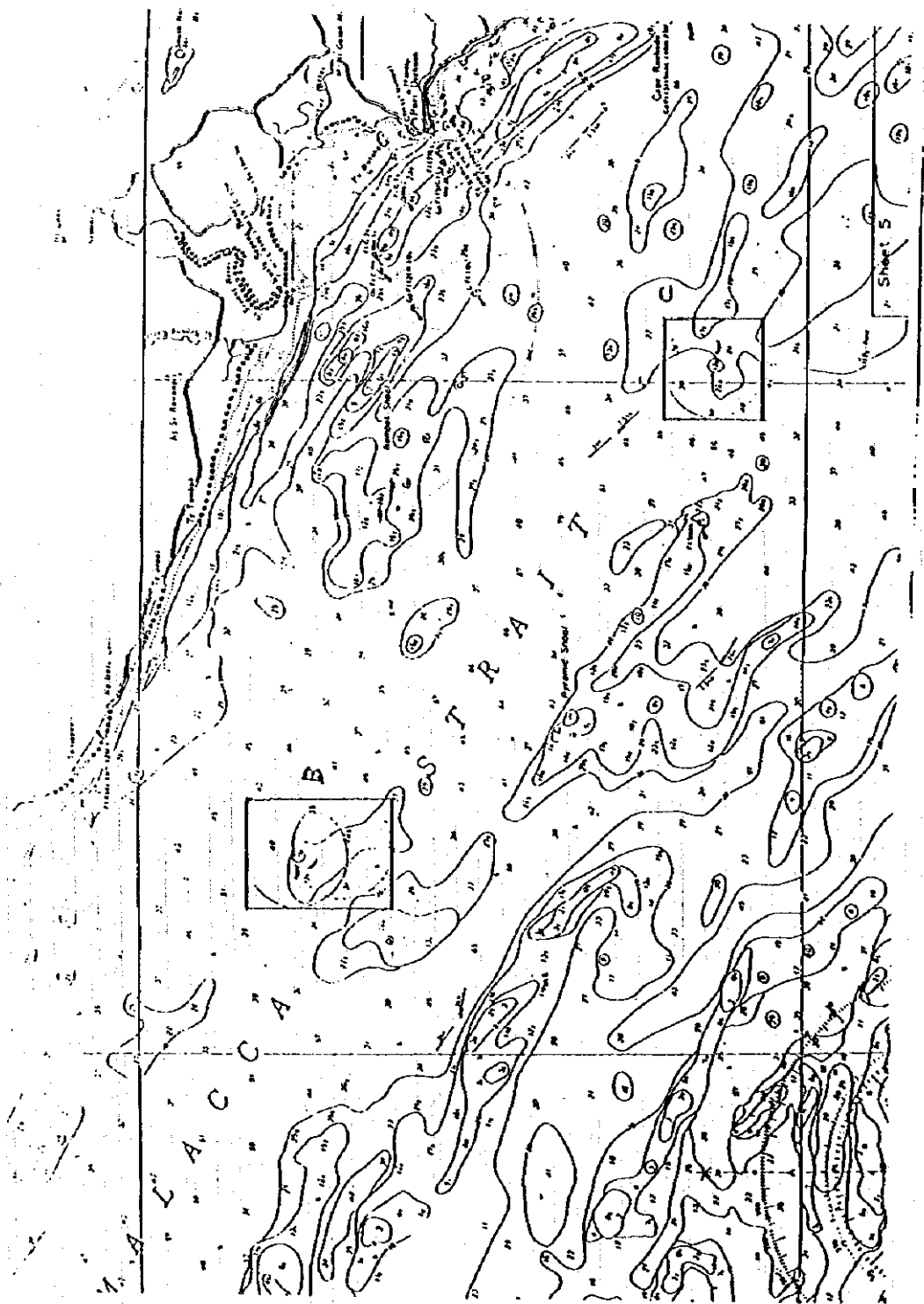
Name of Wreck	Position	Locality	Remarks
S1 M V NIADA 40	1° 11.803' N 103° 25.886' E (PA) (RK Datum)	Off The Brothers (in Traffic Separation Zone)	Reported by OC Sea Comm, Indonesia 2684 Ton. (or 834 GRT) reported sunk following a collision on 7 Sep 86. Charted with safe clearance depth of 15 metres.
S2 Unknown	1° 10'.84 N 103° 25.78' E (RK Datum).	Off The Brothers (within the East bound lane).	Reported by Navarea XI 964/86 834 Tons. Charted as non dangerous wreck.
S3 MV "BRASTAGI" /YCVQ	1° 06.8' N 103° 41.1' E (RK Datum)	West of Pulau Takong Besar on TSS Zone.	Reported by Indonesia NM 24/198/82 in 1982. Stranded Wreck.
S4 M.S. "SINAR LAUT" Nr 289	1° 07.6' N 103° 45.3' E (RK Datum)	Off Raffles Lighthouse (in eastbound lane).	Reported by Indonesian NM 31/335/81 in 1981. 100 Tons. Charted as dangerous wreck. Position Approximate Rept 1981. Indonesian NM 40/418/81 mentioned wreck name as "Sinar Matagan".
S5 A depth of 21 metres	1° 10.50' N 103° 48.94' E (RK Datum)	North of Buffalo Rock in east bound lane.	Reported by M.V World Diplomat ref. BA NM 3190/84 in 1984. Charted 21 metres with danger circle legend "Repd (1984)".
Charted wreck NO. 1"	1° 14.21' N 103° 37.60' E (RK Datum)	Northwest Ward of Batu Berhent in Eastbound lane.	GRT 499. (Ref. Jakarta Telex no. 61/1984. Navarea XI, BA NM 15/1114/86, SM 12/157/86). Charted dangerous wreck with depth 27.5 metres over it. Date of sinking 30 Nov 84.

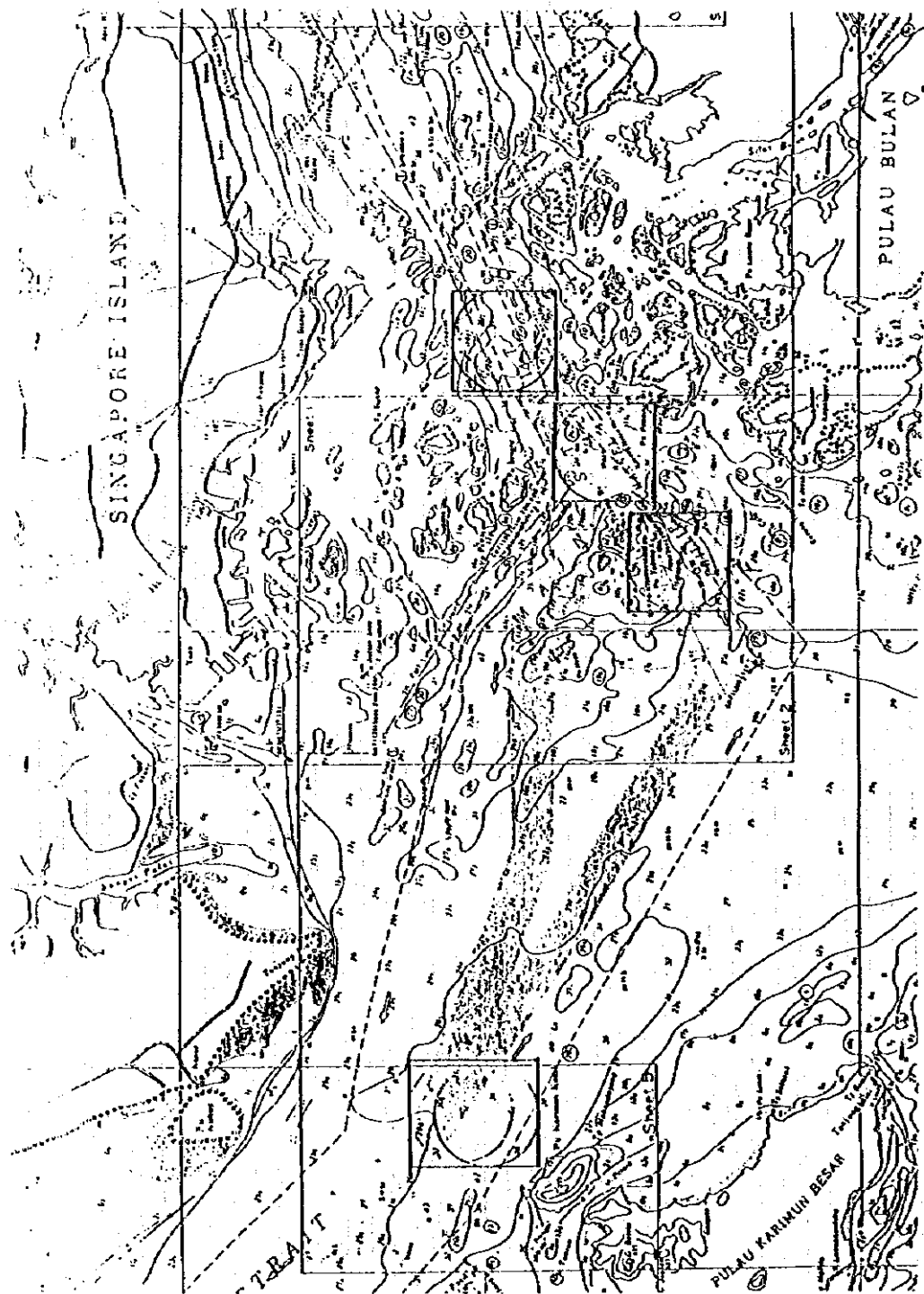
Compiled by Hydrographic Dept. PSA, 11 May 1987.

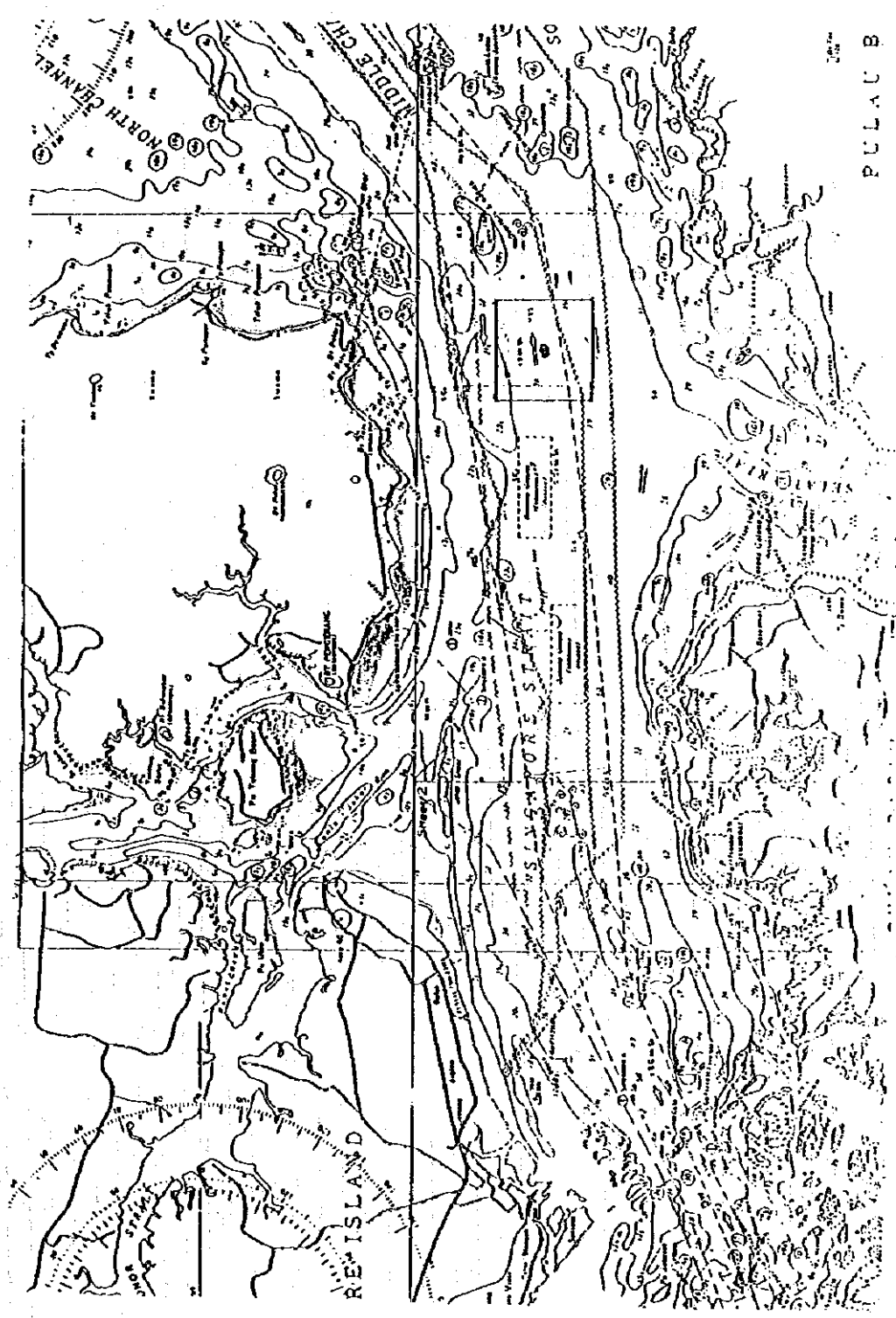
Hydrographic Survey of the Malacca-Singapore Straits (Location of 9 areas.)

Area	1	2	3	4	Remarks
A	2° - 50' 2" N	2° - 50' 2" N	2° - 44' 5" N	2° - 44' 5" N	(15°) 2° - 48' 7" N 101° - 00' 8" E
	100° - 59' 3" E	101° - 03' 6" E	102° - 03' 6" E	100° - 59' 3" E	(17°) 2° - 47' 0" N 101° - 02' 1" E (17°) 2° - 46' 0" N 101° - 02' 1" E
B	2° - 36' 7" N	2° - 36' 7" N	2° - 32' 4" N	2° - 32' 4" N	(18°) 2° - 35' 2" N 101° - 25' 9" E
	101° - 24' 4" E	101° - 27' 5" E	101° - 27' 5" E	101° - 24' 4" E	(18°) 2° - 33' 9" N 101° - 26' 0" E
C	2° - 24' 1" N	2° - 24' 1" N	2° - 21' 1" N	2° - 21' 1" N	(19°) 2° - 22' 6" N 101° - 40' 6" E
	101° - 39' 1" E	101° - 42' 1" E	101° - 42' 1" E	101° - 39' 1" E	
D	1° - 57' 6" N	1° - 57' 6" N	1° - 54' 0" N	1° - 54' 0" N	(23°) 1° - 56' 1" N 102° - 14' 1" E
	102° - 12' 6" E	102° - 16' 9" E	102° - 15' 9" E	102° - 12' 6" E	(24°) 1° - 55' 5" N 102° - 15' 4" E
E	1° - 13' 3" N	1° - 13' 3" N	1° - 09' 3" N	1° - 09' 3" N	(S1°) 1° - 11' 8" N 103° - 25' 9" E
	103° - 24' 3" E	103° - 27' 4" E	103° - 27' 4" E	103° - 24' 3" E	(S2°) 1° - 10' 8" N 103° - 25' 8" E
F	1° - 06' 7" N	1° - 06' 7" N	1° - 03' 7" N	1° - 03' 7" N	(43°) 1° - 05' 2" N 103° - 42' 1" E
	103° - 40' 6" E	103° - 43' 6" E	103° - 43' 6" E	103° - 40' 6" E	
G	1° - 09' 1" N	1° - 09' 1" N	1° - 06' 1" N	1° - 06' 1" N	(42°) 1° - 07' 6" N 103° - 45' 4" E
	103° - 43' 9" E	103° - 46' 9" E	103° - 46' 9" E	103° - 43' 9" E	
H	1° - 12' 0" N	1° - 12' 0" N	1° - 09' 0" N	1° - 09' 0" N	(S5°) 1° - 10' 5" N 103° - 48' 9" E
	103° - 47' 4" E	103° - 50' 4" E	103° - 50' 4" E	103° - 47' 4" E	
I	1° - 17' 5" N	1° - 17' 5" N	1° - 14' 5" N	1° - 14' 5" N	1° - 16' 0" N 104° - 15' 0" E
	104° - 13' 5" E	104° - 16' 5" E	104° - 16' 5" E	104° - 13' 5" E	

Note : ① Longitude and latitude above (1~4) shows the 4 corners of each area (A~I).
 ② Longitude and latitude in a remarks column shows the points where sunken ships or shallows are confirmed.







PULAU B

1. Resurvey And Investigation of The Navigational Hazards

Basically Resurvey and Investigation of dangerous/unconfirmed shoals and wreck at One Fathom Bank area, Malacca and Singapore Straits is one of the basic needs in supporting the safety of navigation in those straits; the results should be officially announced through notice to mariners and the new navigational hazards which have been founded should be published in nautical documents and printed in nautical chart. To obtain good result in supporting the safety of navigation, to indicate those hazards visual aids to navigation is necessary. The draft scope of work which has been forwarded by the government of Japan to the Ministry of Transport and which has been informed to us is adequate i.e :

- a. Area "A", Area "B" and Area "F" are acceptable.
- b. Area "C" is o.k but is should be noted to confirm to a shallow water in position 02-10-20N /101-51-22E (Indonesian chart Nr. 351, 1985).
- c. Area "D" is agreeable but please confirm to one wreck in position 01-54-20N/102-04-38 E (Indonesian chart Nr, 351, 1985).
- d. Area "E" is o.k. but please check 2 (two) wrecks in position 01-12-11N/103-34-20E and 01-10-48N/103-32-52E (Indonesian chart Nr. 352, 1985).
- e. Area "G" is acceptable but please confirm one wreck in position 01-06-06N/103-45-00E and a shallow water in position 01-06-06N/103-45-00E and a shallow water in position 01-07-12N/103-46-30E (Indonesian chart Nr. 352, 1985).
- f. Area "H" is o.k. please confirm 2 (two) wrecks in position 01-13-40N/2103-56-24E and 01-11-05N/103-57-20E and also a 14 mtrs water depth in position 01-09-30N/103-48-18E (Indonesian chart Nr. 352, 1985).
- g. Area "I" please check the existing submarine cables.

We also suggest an interval sounding of 10 mtrs should be done at the location of the founded wreck.

We wish that the execution of the survey shall employ the survey vessel of the government of Republic Indonesia with the joint team of the four countries (Indonesia, Malaysia, Singapore and Japan) and all expenses should be donated by the government of Japan.

Proposed for Hydrographic Survey and Investigation of
Dangerous/Unconfirmed Wreck and Shoal

1. Proposed area to be re-surveyed

1.1 Area 1

i.	02° 51.4' N.,	100° 57.2' E.
ii.	02° 48.3' N.,	101° 03.4' E.
iii.	02° 45.0' N.,	101° 03.4' E.
iv.	02° 45.0' N.,	101° 01.3' E.
v.	02° 48.9' N.,	100° 54.1' E.

1.2 Area 2

i.	02° 23.4' N.,	101° 40.2' E.
ii.	02° 23.4' N.,	101° 45.0' E.
iii.	02° 21.8' N.,	101° 45.0' E.
iv.	02° 21.8' N.,	101° 40.2' E.

1.3 Area 3

i.	02° 17.6' N.,	101° 48.2' E.
ii.	02° 17.6' N.,	101° 49.6' E.
iii.	02° 15.0' N.,	101° 51.1' E.
iv.	02° 15.0' N.,	101° 49.6' E.

1.4 Area 4

i.	02° 18.2' N.,	101° 52.8' E.
ii.	02° 18.8' N.,	101° 53.4' E.
iii.	02° 17.0' N.,	101° 55.4' E.
iv.	02° 16.2' N.,	101° 54.8' E.

1.5 Area 5

i.	01° 46.2' N.,	102° 42.8' E.
ii.	01° 42.6' N.,	102° 50.0' E.
iii.	01° 42.0' N.,	102° 49.8' E.
iv.	01° 45.8' N.,	102° 42.6' E.

2. Proposed investigation of dangerous/unconfirmed wreck

i.	Wreck (1972)	02° 46.0' N.,	101° 02.1' E.
ii.	Wreck (PA)	02° 28.0' N.,	101° 35.2' E.
iii.	Wreck (PD)	01° 33.9' N.,	103° 05.1' E.
iv.	Wreck (PA)	01° 46.4' N.,	102° 43.3' E.

3. Proposed investigation of dangerous/unconfirmed shoal

i.	Shoal (1972)	02° 22.6' N.,	101° 40.6' E.
ii.	Shoal (1975)	02° 15.9' N.,	101° 47.7' E.
iii.	Shoal (1987)	02° 34.0' N.,	101° 25.8' E.

INDONESIAN POSITION PAPER

INDONESIAN PROPOSAL FOR THE COMMENCEMENT OF
RE-SURVEY OF ONE FATHOM BANK AND INVESTIGATION
OF DANGEROUS/UNCONFIRMED WRECKS
IN THE MALACCA AND SINGAPORE STRAITS

1. Pursuant to the decision taken in the Meeting of the Working Group of The Tripartite Technical Experts Group on the Safety of Navigation in the Straits of Malacca and Singapore held in Langkawi, Malaysia on 18 - 20 Januari 1994, the littoral States agreed to implement project on Re-survey of One Fathom Bank and Investigation of Dangerous/Unconfirmed Wrecks in the Malacca and Singapore Straits to enhance the safety of navigation in the TSS area of the Straits of Malacca and Singapore.
2. The Project will be executed based on the Scope of Work submitted during the Meeting by Japan which include the requirements that Japan will make available the following :
 - a. Survey Team.
 - b. Survey boat only,
 - c. Vehicles,
 - d. Joint Assistance Survey Engineers
 - e. Survey and other necessary equipment,

For that purpose, each coastal State (Indonesia, Malaysia, Singapura) recommended to provide the following :

 - a. Hydrographer-in-charge
 - b. Survey ship.
3. As far as the technical aspects of the project, Indonesia agreed the following :
 - a. execution of re-survey of A, B, C, D, E, F, G, H and I Areas (9 Areas);
 - b. to assist the execution of the project, as adopted in the last Working Group Meeting;

c. support Malaysian proposal on the utilization of a survey vessel of each coastal state to operate within its national waters. However, if it necessary, such national vessel may enter into waters of other states, upon request, to give assistance.

4. Considering the above, there are some points within Indonesian waters need to be surveyed, as follows :

a. Priority 1 (Areas in the TSS)

1) Area A (One Fathom Bank)

Position : a) 02° 48' 47" N) ----- Wreck
101° 00' 45" E)

b) 02° 46' 06" N) ----- Wreck
101° 02' 00" E)

c) 02° 47' 00" N) ----- Shoals
101° 02' 12" E)

d) Shallow waters with approximately depths
10 to 17 meter.

Note : Chart No. 350

2) Area E (North of Karimun Kecil Island)

Position : a) 01° 12' 11" N) ----- Wreck
103° 34' 20" E)

b) 01° 10' 48" N) ----- Wreck
103° 32' 52" E)

Notes : Chart No. 352

3) Area F (Phillips Channel near Cula Island)

Position : a) 01° 05' 24" N) ----- Wreck
103° 32' 24" E)

b) 01° 06' 54" N) ----- Wreck
103° 41' 24" E) and rocks surround

Notes : Chart No. 352

4) Area G (Phillips Channel near Helen Mars Island)

Position : a) 01° 07' 34" N) ----- Wreck
103° 45' 24" E)

b) 01° 06' 10" N) ----- Wreck
103° 45' 54" E)

Notes : Chart No. 352

5) Area H (Buffalo Rock)

Position : a) 01° 11' 00" N) ----- Shoals
103° 48' 36" E)

b) 01° 11' 05" N) ----- Wreck
103° 57' 20" E)

c) 01° 10' 22" N) ----- Shallow waters
103° 48' 32" E) (11 Meter)

Notes : Chart No. 352

b. Priority 2 (Areas within the shipping lane)

1) Location : South West of Gosong Raleigh.

Position : 02° 10' 18" N) ----- Shoal
101° 51' 18" E)

Notes : Chart No. 351

- 2) Location : South of Piai Island.
 Position : 01° 12' 12" N) ----- Wreck
 103° 34' 42" E)
 Notes : Chart No. 352
- 3) Location : Oosong Pyramid.
 Position : 02° 27' 10" N) ----- Shallow waters
 101° 30' 00" E) (3.4 Meter)
 Notes : Chart No. 352

5. In connection with the execution of the said project, Indonesia has prepared 1 (one) survey vessel with its survey equipment (MV. Bima Sakti) and 2 (two) survey launches as well as personnel/supervisors.
6. Based to the Indonesian laws and regulations, survey in Indonesian waters by foreign vessels could only be conducted after getting approval from the competent authorities and, therefore, for the smooth execution of the project, we propose that this project should also subject to be approved by the competent authorities of each countries and each parties should give assistance to provide such approval.
7. The survey should be executed together by personnel of the coastal states and they should send the report, as soon as possible, to the national competent authorities of the coastal states and the International Maritime Organization in London and International Hydrographic Organization.
8. Referring to the Indonesian proposal adopted in the last Working Group Meeting that as the project needs certain amount of costs which could not be provided by the coastal States, it is suggested that Japan could seek source of fund to finance the project and supported by each coastal State.

----- 00000 -----

S8111/ET&C.J/122794

For Reference Purpose Only

SCOPE OF WORK
(DRAFT)
FOR
HYDROGRAPHIC SURVEY
OF SHOAL PATCHES AND WRECKS
IN
THE MALACCA AND SINGAPORE STRAITS
AGREED UPON BETWEEN
THE GOVERNMENT OF MALAYSIA
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA
THE GOVERNMENT OF THE REPUBLIC OF SINGAPORE
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR, 1995

Leader,
Preparatory Study Team
Japan International
Cooperation Agency

I. Introduction

In response to the request of the Government of Malaysia, the Government of the Republic of Indonesia (hereinafter referred to as "the Government of Indonesia") and the Government of the Republic of Singapore (hereinafter referred to as "the Government of Singapore"), the Government of Japan has decided to conduct the Hydrographic Survey of shoal patches and wrecks in the Malacca and Singapore Straits (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the Study in close relation with the authorities concerned of the Government of Malaysia, Indonesia and Singapore.

The present document sets forth the scope of work with regard to the Study.

II. Objective of the Study

The objective of the Study is

To conduct hydrographic survey of areas including shoals, wrecks and other dangerous objects, in order to promote maritime safety in the Malacca and Singapore Straits.

III. Study Area

Study Area will cover the 24 areas in the Malacca and Singapore Straits, details of which are indicated in the attached list (Appendix I) and the map (Appendix II). Total areas will be approximately xxxx square meters.

IV. Scope of the Study

In order to achieve the objectives mentioned above, the Study shall cover the following items;

a) Horizontal Control Survey

Based on the existing control points available for the Study, new points necessary for sounding operation shall be determined by Global Positioning System (GPS) observation.

b) Tidal observation

In order to determine the chart datum level and make tidal reduction to soundings, tide stations and temporary tide poles shall be set in appropriate places.

c) Sounding (Search)

Sounding (Search) operation shall be carried out by using precise four-beam echo sounders with side scan sonars. The standard interval between lines of sounding is 200m, wherever important places, it shall be closer.

d) Positioning fixing

Positioning of sounding shall be determined by Differential Global Positioning System (DGPS).

e) Data Processing

Initial data processing to confirm shoals and wrecks shall be carried out in the field. Final data processing shall be carried out in Japan, and digital data of the hydrographic survey shall also be acquired..

f) Preparation of smooth sheets

Based on the result of surveys, smooth sheets shall be prepared on plastic films. The scale of the smooth sheet shall be 1:20,000. Digital data equivalent to smooth sheets shall equally be shared among the four countries.

V. Study Schedule

The Study will be conducted in accordance with the attached tentative schedule. (Appendix III)

VI. Reports and final results

JICA shall prepare and submit the following reports in English and final results to the Government of Malaysia, Indonesia and Singapore. The submission time of each report might be changed according to the study schedule.

1. Reports

(1) Plan of Operation

Sixty (60) copies in English at the commencement of the Study.

(2) Progress Report

Sixty (60) copies every fiscal year.

(3) Final Report

Sixty (60) copies upon the completion of the Study.

2. Smooth Sheets

Four (4) set for each area

3. Other surveying and observation data results prepared through the Study

VII. UNDERTAKINGS OF THE GOVERNMENT OF MALAYSIA

1. To facilitate smooth conduct of the Study, the government of Malaysia shall take necessary measures;

(1) to inform the members of the Study team any existing risk in the Study area and to take any measures deemed necessary to secure the safety of the Study team,

(2) to ensure the necessary entry permits for the Study team to conduct field surveys in Malaysia and exempt them from consular fees,

(3) to exempt the members of the Study team from taxes and duties, as normally accorded under the provision of Malaysian General Circular No. 1 of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study,

(4) to exempt the members of the Study team from income tax on their official emoluments in respect of their period of assignment in Malaysia in connection with the conduct of the Study, but the Government of Malaysia shall refrain the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources.,

(5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into Malaysia from Japan in connection with the implementation of the Study,

(6) to secure permission for entry into private properties or restricted area for the implementation of the Study,

(7) to make arrangements for the Study Team to take back to Japan the data, maps and materials connected with the Study, subject to the approval of the Government of Malaysia, in order to prepare the reports.,

(8) to provide the Study team with medical services when needed but the expenses will be chargeable to the members of the Study Team.

(9) to secure permission to use telecommunication facilities introduced from Japan for the execution of the field survey.

2. The government of Malaysia shall indemnify any member of the Study team in respect of damages arising from any legal action against him in relation to any act performed or omissions made in undertaking the Study except when the two Governments agree that such a member is guilty of gross negligence or willful misconduct..

3. The government of Malaysia shall coordinate the three coastal countries in respect of the Study.

4. yyyyy (hereinafter referred to as "yy") shall act as counterpart agency to the Japanese study team and also as a coordinating body in relation with other governmental and non-governmental organization concerned for the smooth implementation of the Study.

5. yy shall, at its own expense, provide the Japanese study team with the following, in connection with other organizations concerned:

- (1) available data and information related to the Study,
- (2) counterpart personnel,
- (3) mother vessel for survey with crew including fuel expense.
- (4) supervisor to the sounding survey
- (5) suitable office space with office equipment in Kuala Lumpur or the base of the mother vessel,
- (6) credentials or identification cards, and
- (7) appropriate number of vehicles with drivers

VII. UNDERTAKINGS OF THE GOVERNMENT OF INDONESIA

1. To facilitate smooth conduct of the Study, the Government of Indonesia shall take necessary measures;

(1) to secure the safety of the Japanese study team,

(2) to permit the members of the Japanese study team to enter, leave and sojourn in Indonesia for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees,

(3) to exempt the members of the Japanese study team from taxes, duties and other charges on equipment, machinery, vehicles and other materials brought into Indonesia for the conduct of the Study,

(4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study,

(5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into Indonesia from Japan in connection with the implementation of the Study,

(6) to secure permission for entry into private properties or restricted area for the implementation of the Study,

(7) to secure permission for the Japanese study team to take all data and documents (including maps, photographs) related to the Study out of Indonesia to Japan, for the sole purpose of the Study,

(8) to provide medical services as needed. Its expenses will be chargeable on members of the Japanese study team.

(9) to secure permission to use telecommunication facilities introduced from Japan for the execution of the field survey.

2. The government of Indonesia shall bear claims, if any arises, against the members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful

misconduct on the part of the members of the Japanese study team.

3. zzzzz (hereinafter referred to as "zz") shall act as counterpart agency to the Japanese study team and also as a coordinating body in relation with other governmental and non-governmental organization concerned for the smooth implementation of the Study.

4. zz shall, at its own expense, provide the Japanese study team with the following, in connection with other organizations concerned:

- (1) available data and information related to the Study,
- (2) counterpart personnel,
- (3) mother vessel for survey with crew including fuel expense
- (4) supervisor to the sounding survey
- (5) suitable office space with office equipment in Jakarta or at the base of mother vessel,
- (6) credentials or identification cards, and
- (7) appropriate number of vehicles with drivers

VII. UNDERTAKINGS OF THE GOVERNMENT OF SINGAPORE

1. To facilitate smooth conduct of the Study, the Government of Singapore shall take necessary measures:

- (1) to secure the safety of the Japanese study team,
- (2) to permit the members of the Japanese study team to enter, leave and sojourn in Singapore for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees,
- (3) to exempt the members of the Japanese study team from taxes, duties and other charges on equipment, machinery, vehicles and other materials brought into Singapore for the conduct of the Study,
- (4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study,
- (5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into Singapore from Japan in connection with the implementation of the Study,
- (6) to secure permission for entry into private properties or restricted area for the implementation of the Study,
- (7) to secure permission for the Japanese study team to take all data and documents (including maps, photographs) related to the Study out of Singapore to Japan,
- (8) to provide medical services as needed. Its expenses will be chargeable on members of the Japanese study team.
- (9) to secure permission to use telecommunication facilities introduced from Japan for the execution of the field survey.

2. The government of Singapore shall bear claims, if any arises, against the members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful

misconduct on the part of the members of the Japanese study team.

3. wwwww (hereinafter referred to as "ww") shall act as counterpart agency to the Japanese study team and also as a coordinating body in relation with other governmental and non-governmental organization concerned for the smooth implementation of the Study.

4. ww shall, at its own expense, provide the Japanese study team with the following, in connection with other organizations concerned:

- (1) available data and information related to the Study,
- (2) counterpart personnel,
- (3) mother vessel for survey with crew including fuel expense.
- (4) Supervisor to the sounding survey

(5) suitable office space with office equipment in Singapore or at the base of mother vessel,

(6) credentials or identification cards, and

(7) appropriate number of vehicles with drivers

VIII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures;

- (1) to dispatch, at its own expense, study team to Malaysia, Indonesia, and Singapore,
- (2) to pursue technology transfer to the counterpart personnel in the course of study.
- (3) to hire survey boat and vehicles for positioning at the expense of JICA

IX. CONSULTATION

JICA and yy(as a representative of yy, zz and ww) shall consult with each other in respect of any matter that may arise from or in connection with the Study.

LIST OF RESURVEY AREAS/POINTS

Areas/ Points	Position	Subject	Remarks
A	(a) 02° 50.2' N 100° 59.3' E (b) 02° 50.2' N 101° 03.6' E (c) 02° 44.5' N 101° 03.6' E (d) 02° 44.5' N 100° 59.3' E	Wreck & Shoal	
B	(a) 02° 36.7' N 101° 24.4' E (b) 02° 36.7' N 101° 27.5' E (c) 02° 32.4' N 101° 27.5' E (d) 02° 32.4' N 101° 24.4' E	Shoal	
C	(a) 02° 24.1' N 101° 39.1' E (b) 02° 24.1' N 101° 42.1' E (c) 02° 21.1' N 101° 42.1' E (d) 02° 21.1' N 101° 39.1' E	Shoal	
D	(a) 01° 57.6' N 102° 12.6' E (b) 01° 57.6' N 102° 16.9' E (c) 01° 54.0' N 102° 16.9' E (d) 01° 54.0' N 102° 12.6' E	Wreck	
E	(a) 01° 13.3' N 103° 24.3' E (b) 01° 13.3' N 103° 27.4' E (c) 01° 09.3' N 103° 27.4' E (d) 01° 09.3' N 108° 24.3' E	Wreck	

Areas/ Points	Position	Subject	Remarks
F	(a) 01° 06.7' N 103° 40.6' E (b) 01° 06.7' N 103° 43.6' E (c) 01° 03.7' N 103° 43.6' E (d) 01° 03.7' N 103° 40.6' E	Wreck	
G	(a) 01° 09.1' N 103° 43.9' E (b) 01° 09.1' N 103° 46.9' E (c) 01° 06.1' N 103° 46.9' E (d) 01° 06.1' N 103° 43.9' E	Wreck	
H	(a) 01° 12.0' N 103° 47.4' E (b) 01° 12.0' N 103° 50.4' E (c) 01° 09.0' N 103° 50.4' E (d) 01° 09.0' N 103° 47.4' E	Danger	
I	(a) 01° 17.5' N 104° 13.5' E (b) 01° 17.5' N 104° 16.5' E (c) 01° 14.5' N 104° 16.5' E (d) 01° 14.5' N 104° 13.5' E	Wreck	
J	① 02° 17.4' N 101° 49.0' E ② 02° 15.6' N 101° 49.6' E	Shoals	
K	02° 17.2' N 101° 54.2' E	Shoal	

Areas/ Points	Position	Subject	Remarks
L	(a) 01° 46.2' N 102° 42.8' E	Shoal	
	(b) 01° 42.6' N 102° 50.0' E		
	(c) 01° 42.0' N 102° 49.8' E		
	(d) 01° 45.8' N 102° 42.6' E		
a	02° 10.2' N 101° 52.0' E	Shoal	
b	01° 46.4' N 102° 48.3' E	Wreck	
c	01° 34.0' N 103° 05.0' E	Wreck	
d	01° 12.2' N 103° 34.3' E	Wreck	
e	01° 07.4' N 103° 44.2' E	Wreck	
f	02° 28.0' N 101° 35.4' E	Wreck	
g	02° 16.0' N 101° 47.7' E	Shoal	
h	01° 54.2' N 102° 04.8' E	Wreck	
i	01° 11.1' N 103° 33.0' E	Wreck	
j	01° 07.6' N 103° 45.4' E	Wreck	
k	02° 53.9' N 100° 52.0' E	Shoal	
l	02° 51.1' N 101° 00.0' E	Shoal	