

## PROJECT 1

# REMOVAL OF WRECKS



## IN THE TRAFFIC SEPARATION SCHEME IN THE STRAITS OF MALACCA AND SINGAPORE

### OBJECTIVE

- Generally to enhance the safety of navigation in the Straits of Malacca and Singapore (Straits) particularly within the Traffic Separation Scheme (TSS) for deep draft vessels  
by
- **determining the risks and removing of hazards to allow for continuous and unobstructed navigation.**

## TRAFFIC IN THE STRAITS

- Annually more than 90,000 ships passed through the Straits of Malacca and Singapore.
- In the Strait of Malacca, more than 60,000 ships passing through reported to the Port Klang VTS Centre and on average, 3500 are deep draft vessels and carrying oil.

## VESSELS REPORTING TO PORT KLANG VTS CENTRE

Year/Type	Total of Vessels	Tankers/ VLCC	Other Types of Vessels	Deep Draft Vessels >15m
2000	55 597	13 343	42 254	3163
2001	59 314	14 276	45 038	3303
2002	60 034	14 276	45 443	3301
2003	62 334	15 667	46 667	3487
2004	63 636	16 403	47 233	3477
2005	62 621	14 759	47 862	3788
2006	65 649	14 784	50 865	3851
2007	70718	14931	55787	3753
Average	62 488	14 805	47 644	3515

## TRAFFIC IN THE STRAITS

- In 2007, the total no of vessels is 70,718 where 14,931 (21.1%) were tankers and out of these 3,753 were deep draft vessels (25% of tankers and 5.3% overall).

## TRAFFIC IN THE STRAITS

- The rules for vessels navigating the Straits require deep draft vessels and VLCC to have Under Keel Clearance (UKC) of **at least 3.5 metres** so these deep draft vessels of 21m draft will need at least 24.5 metres water depth.
- Vessels with drafts of greater than 20 metres will have to carefully plan their passage through the Straits to coincide with the incident of high water to ensure unimpeded passage.

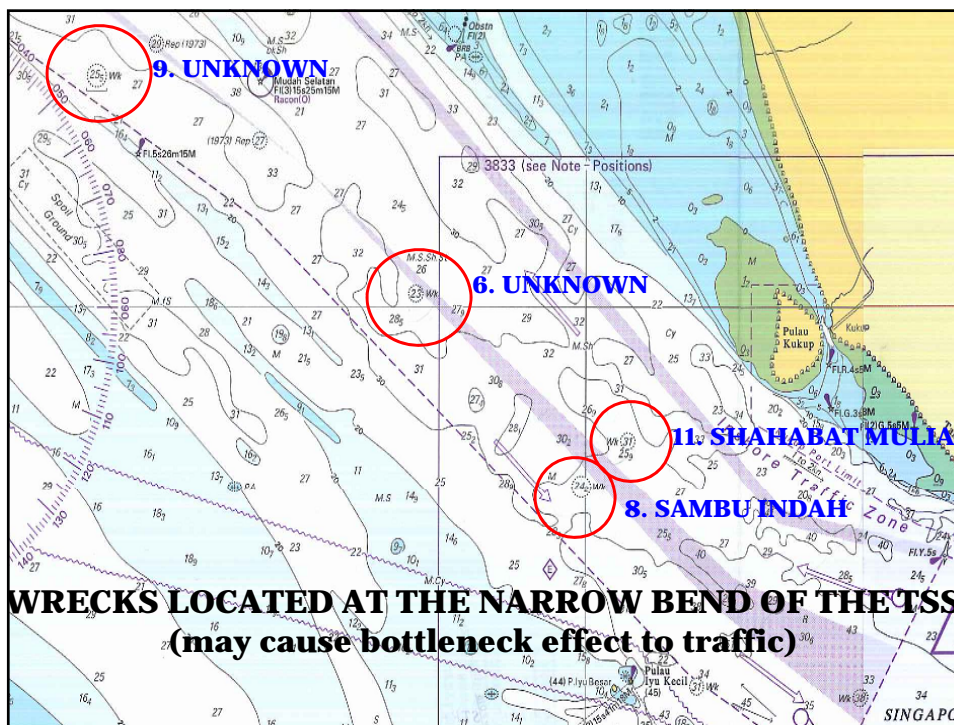
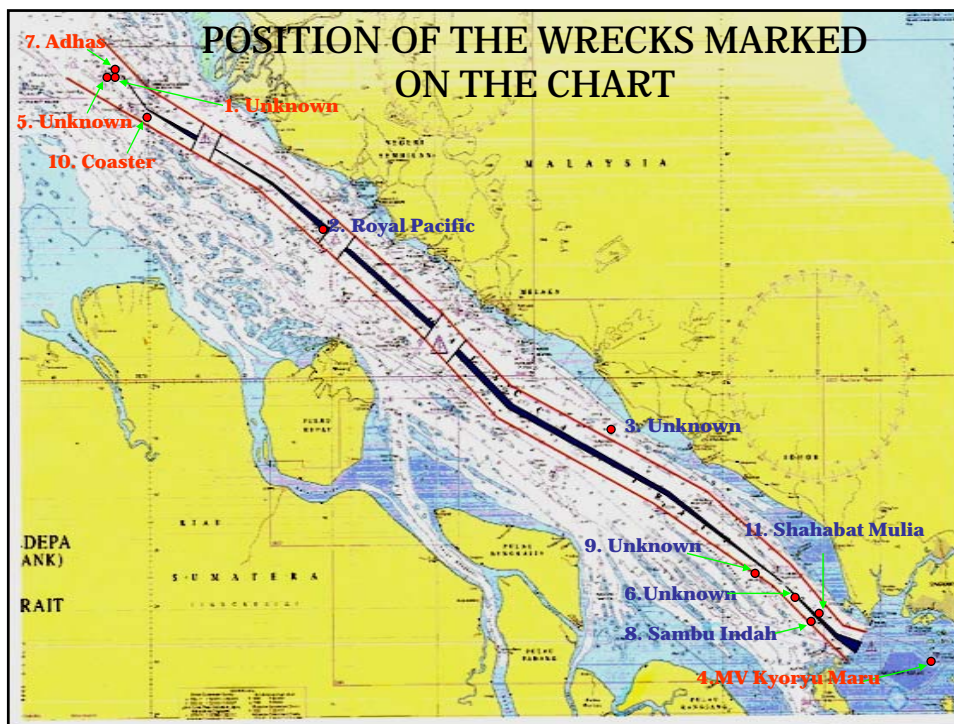
## WRECKS IN THE STRAITS

- A number of critical wrecks have been identified that may become obstacles and hazards to safe navigation for deep draft vessels.
- 11 critical wrecks have been identified for the purpose of this project that lies within the TSS.
- Some of these wrecks are located at the narrow bend of the TSS and these may cause a bottleneck effect to traffic.

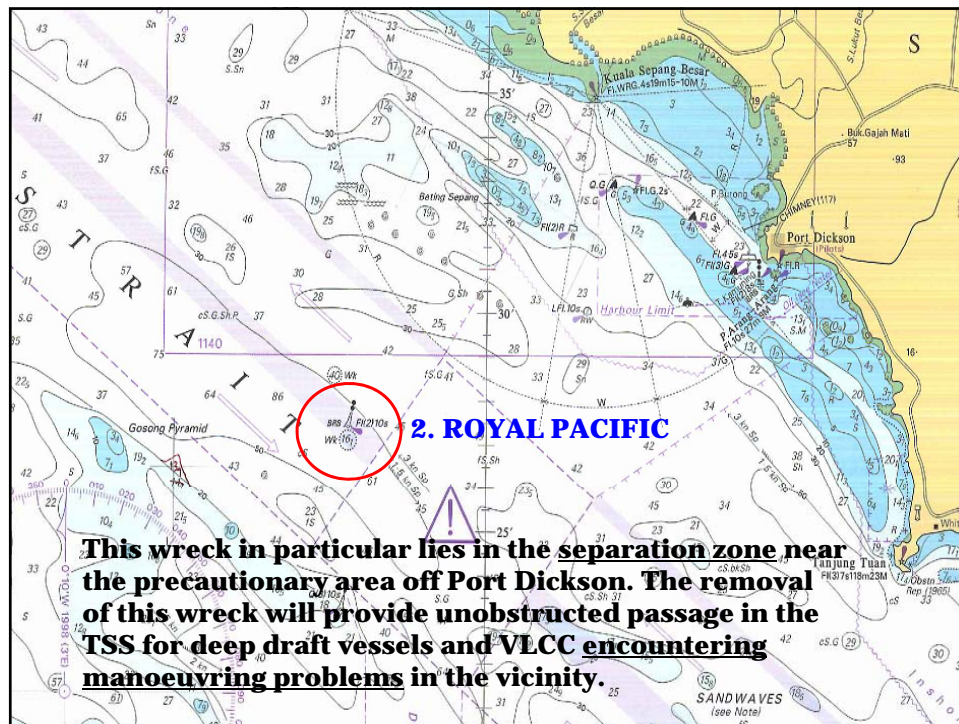
## LIST OF 11 IDENTIFIED CRITICAL WRECKS IN THE STRAITS

Name of the wrecks	Latitude	Longitude	Depth (m)	Location
1. <b>Unknown</b>	02° 56.547'N	100° 50.536'E	16.0	<b>Indonesia</b>
2. <b>Royal Pacific</b>	02° 27.148'N	101° 36.304'E	16.1	<b>Malaysia</b>
3. <b>Unknown*</b>	01° 43.501'N	102° 44.200'E	<28	<b>Malaysia</b>
4. <b>Kyoryu Maru</b>	01° 08.192'N	103° 43.442'E	21.5	<b>Indonesia</b>
5. <b>Unknown</b>	02° 57.594'N	100° 48.346'E	22.3	<b>Indonesia</b>
6. <b>Unknown</b>	01° 20.295'N	103° 15.468'E	23.0	<b>Malaysia</b>
7. <b>Adhas</b>	02° 58.640'N	100° 49.647'E	23.6	<b>Indonesia</b>
8. <b>Sambu Indah</b>	01° 15.898'N	103° 19.820'E	24.0	<b>Malaysia</b>
9. <b>Unknown</b>	01° 25.459'N	103° 06.727'E	25.5	<b>Malaysia</b>
10. <b>Coaster</b>	02° 48.784'N	101° 00.850'E	26.3	<b>Indonesia</b>
11. <b>Shahabat Mulia</b>	01° 16.942'N	103° 21.039'E	31.0	<b>Malaysia</b>

\*Identified and marked as a hazard to navigation in the chart.  
 •Depth of water from chart datum.







## SCOPE OF PROJECT

### 4 Components

1. Hydrographic survey
  - will be conducted under the MEH project in the TSS
2. Risk assessment
  - to identify the risks faced by vessels passing through the Straits
  - to identify any consequential risk when removing any of the wreck.
3. Removal of wrecks
  - to remove 11 critical wrecks throughout the Straits (within the TSS) to provide a minimum safe depth of 24.5 meters for deep draft vessels
4. Wreck monitoring
  - to develop and commission a wreck management information system ( WMIS ).

## PROPOSED SCHEDULE

\*It is expected that the total project duration will be at least 5 years.

No	Items/Year	1	2	3	4	5
1	Hydrographic survey under the MEH project					
2	Development of human resources and training - risk assessment - site survey and underwater technique - wreck removal & salvage methodology - wreck monitoring					
3	Risk assessment process Development of SOP: including procurement of risk assessment tools.					
4	Detailed site survey of the identified wrecks and removal of wrecks					
5	Development of wreck monitoring tool					
6	Maintenance and updating of equipment and tools					

## ESTIMATED COST

No.	Project Component	Cost
1	Hydrographic survey (under the MEH project)	To be provided by the littoral States
2	Risk assessment of wrecks	USD 5 million
3	Removal of wrecks (subject to detailed site survey analysis)	USD 5 million per wreck
4	Wreck Management Information System	USD 500,000
5	Training of resource persons	USD 800,000

## POTENTIAL BENEFITS

- Improve safe passage for transiting vessels by not having to consider departing from the intended course.
- Deep draft vessels (21 meters or more) will also have continuous deep water sufficient to transit through irrespective of the tide.
- Vessels will have greater room for manoeuvring when in emergency situation thus reducing the risk of an accident occurring.

## POTENTIAL BENEFITS

- Benefit to shipowners and navigators by identifying the risk elements.
- Outcome of hydrographic survey, risk assessment and wreck monitoring can be used
  - in the development and updating of any model for SAR or pollution control
  - for the purpose of planning in the provision of ATon in the Straits.



## POSSIBLE COOPERATION AREAS

- Contribution of fund for the site survey, risk assessment, wreck monitoring and wreck removal
- Contribution in kind for equipment and tools
- Technical expert assistance
- Training in the field of survey, risk assessment, wreck monitoring and wreck removal.

## PROJECT IMPLEMENTATION

- The three littoral States shall cooperate through the agreed mechanism for the implementation of the project.
- Each littoral State shall be responsible for the implementation of the project within its own area of jurisdiction.

