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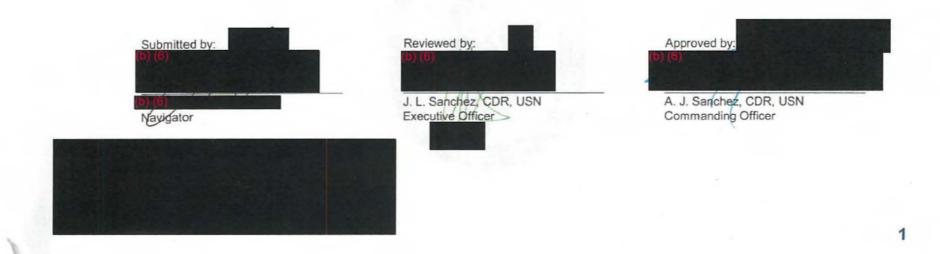
Standard Form 901 (11-18) Prescribed by GSA/ISOO | 32 CFR 2002





#### **Navigation Brief**

#### Sea to Sembawang Shipyard S-1 21 Aug 2017



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# **Navigation Brief**

20 Aug 2017

Purpose of Brief: Navigational Safety Requirement and Information

This slide is UNCLASSIFIED



### References

- COMNAVAIRFOR/COMNAVSURFORINST 3530.4E (NAVDORM)
- JOHNSMCCAININST 3430.4Q (Navigation Bill)
- Sailing Directions Pub. 174
- OPNAVINST 3500.39 (Operational Risk Management)



#### **Contents**

- Watch Bill
- · SOE
- Weather / Astronomical Data / Tides
- Operational Requirements
- Special Considerations
- Tugs and Pilot / Chart Info / Speed Restrictions
- Ground Tackle / Emergency Anchorage
- Navigation Equipment
- Communications
- Engineering Plant
- Emergencies
- ORM

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### Watch Bill

| OOD                         | (b) (6)    | Q        |
|-----------------------------|------------|----------|
| JOOD                        | De-1 100 k | Q        |
| JOOW                        | (b) (6)    | Q        |
| CONN                        | (b) (6)    | Q        |
| NAV EVALUATOR               | (b) (6)    | Q        |
| ECDIS-N OPERATOR            | (b) (6)    | Q        |
| BEARING RECORDER            | (b) (6)    | Q        |
| BEARING TAKERS              | (b) (b)    | QQ       |
| BMOW                        | (b) (6)    | Q        |
| HELM SAFETY OFFICER         | (b) (b)    | Q<br>U/I |
| MASTER HELMSMAN             | (b) (6)    | Q<br>U/I |
| LEE HELMSMAN                | (b) (6)    | Q        |
| AFT STEERING SAFETY OFFICER | (b) (G)    | Q<br>U/I |
| AFT STEERING HELMSMEN       | (b) (6)    | Q<br>U/I |
| TAO                         | (b) (6)    | Q        |
| SHIPPING OFFICER            | (b) (6)    | Q        |
| PILOTING OFFICER            | (b) (6)    | Q        |
| PCO                         | (b) (6)    | Q        |
| EOOW                        | (b) (6)    | Q<br>U/I |



### SOE

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#### 20 Aug

1300 (-8H) – Navigation Brief

#### 21 Aug

- 0600 (-8H) Station the S&A Detail (Except Line Handlers)
- 0745 (-8H) Station Line Handlers
- 0900 (-8H) Moored Sembawang Shipyard S-1



#### Weather

· Skies/ Weather:

MCLDY w/ ISLD TSTMS

· Visibility:

>7NM

· Winds:

VRBL 5-10 kts

· Seas:

SW 1-3 ft

· Air Temp (F):

82-84 F



#### Astronomical Data

· Sunrise:

0659 (-8H)

Sunset:

1913 (-8H)

· Moonrise:

0619 (-8H)

· Moonset:

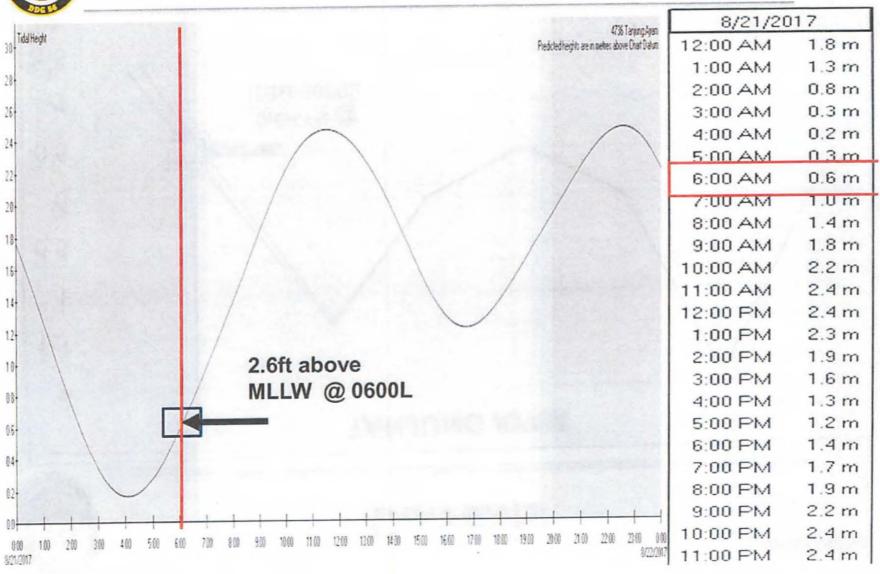
1850 (-8H)

· Illumination:

0 %

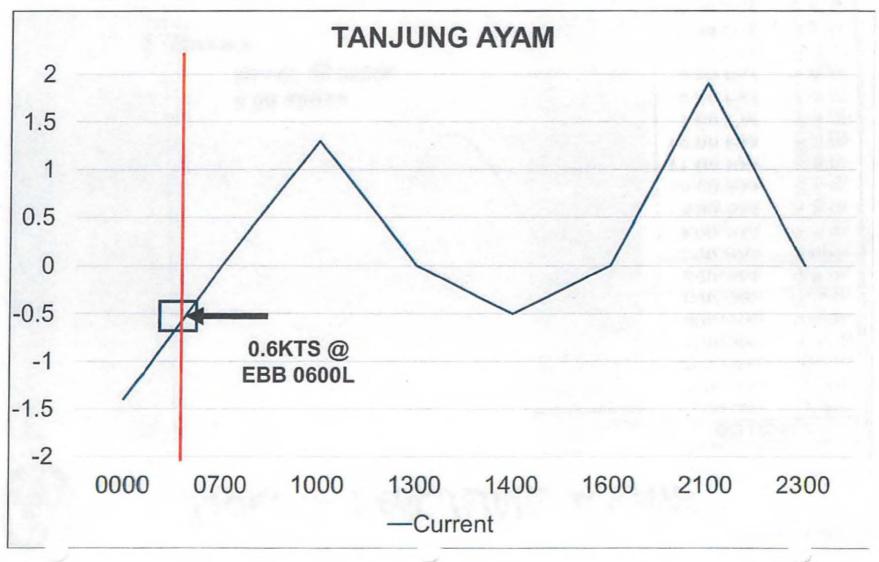


## Tides - TANJUNG AYAM



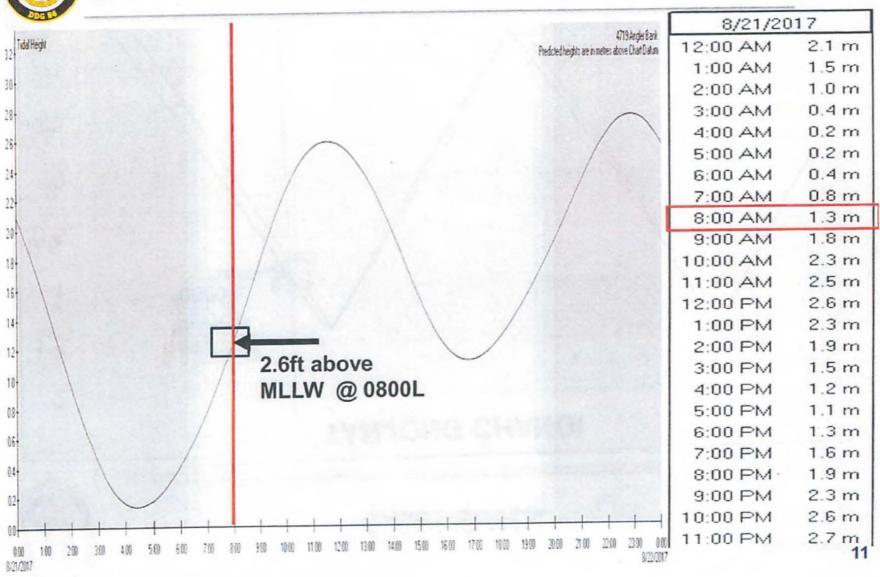


#### **Currents**



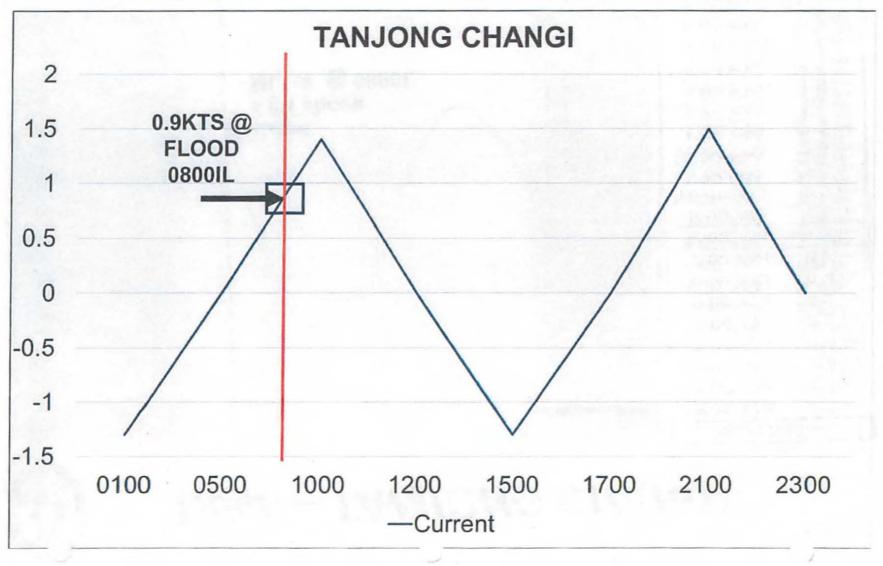


## Tides - TANJONG CHANGI



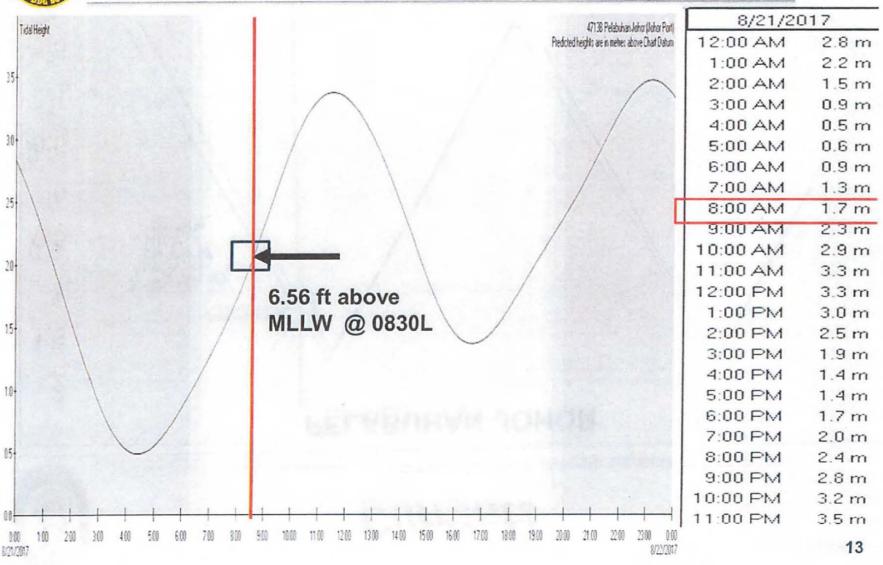


#### **Currents**



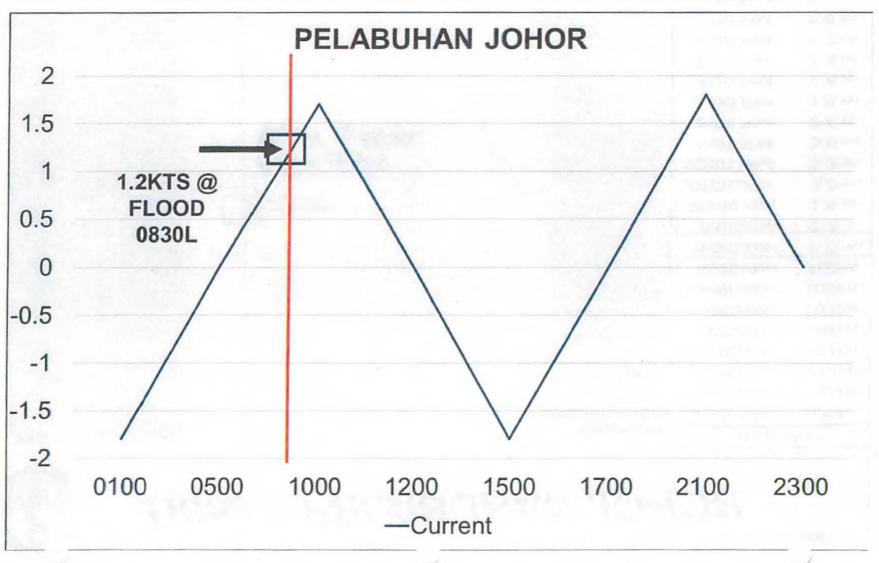


#### Tides - PELABUHAN JOHOR



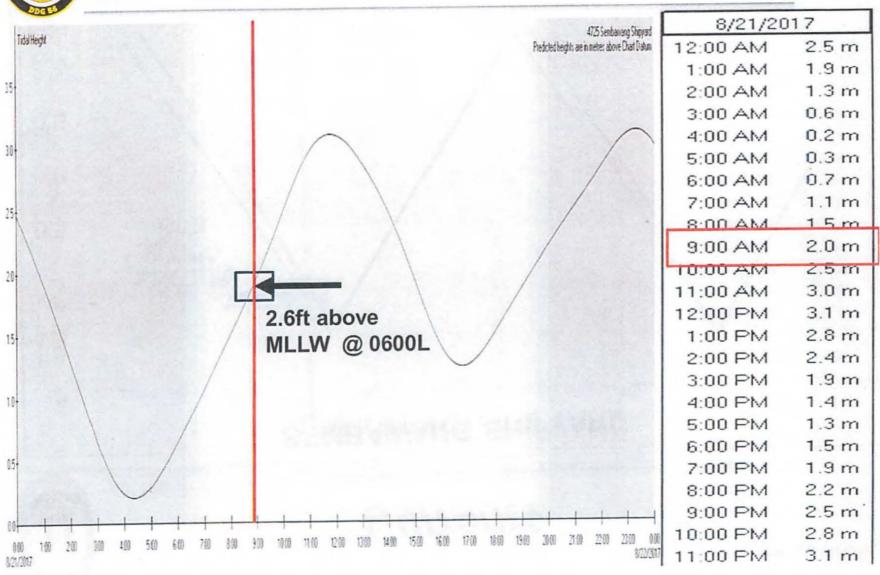


### **Currents**



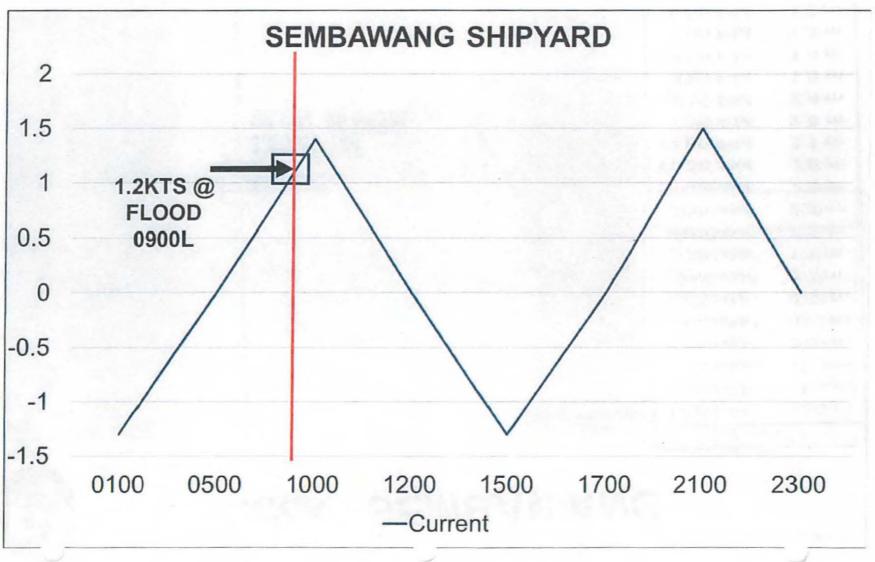


## Tides - SEMBAWANG





### **Currents**



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## Operational Requirements

- Operational Requirements:
  - Tactical Situation
    - Sea to Sembawang Shipyard S-1 SST
- Conditions of Readiness
  - Modified Zebra will be set throughout the ship
  - Equipment Online IAW CO's Standing Orders



## Special Considerations

• Uniform: Clean FRV Coveralls and Command Ball Caps

· Honors: None

· Misc: None

Flag Officer Movements: None

· Harbor Exercises: None

Visitors: IAW Riders List

Special Events: None

Media Coverage: None

Debrief Schedule: Outbound NAV brief



# Tugs and Pilots

Confirmed: 2 Tugs and 1 Pilot

Arrival Time: 0630

· Embark: Pilot Boat

· Disembark: Pier

· Pilots Ladder: Port and Stbd



### **Chart Information**

- DNC 03 Ed. 26: GEN 03C, COA03F, A0350001, H349995,
  - VMS charts updated using the latest:

VDU: NTM 30/2017

■ NTM: 30/2017

Buoy System: IALA "A" (Green Right Returning)

· GPS Datum: WGS 84

Fix Intervals: 3 minutes and IAW CO's Standing Orders



## Shoal & Speed Restrictions

Draft (20Aug17): 21ft 4 in Forward

21 ft 3 in Aft

30 ft 0 in Sonar Dome

Safety Draft: 36 ft / 11 m / 6 fathoms

All Shoal Water is marked in <u>RED</u>

Speed Restrictions: None

Emergency Anchorages: All throughout the transit



### Track Data

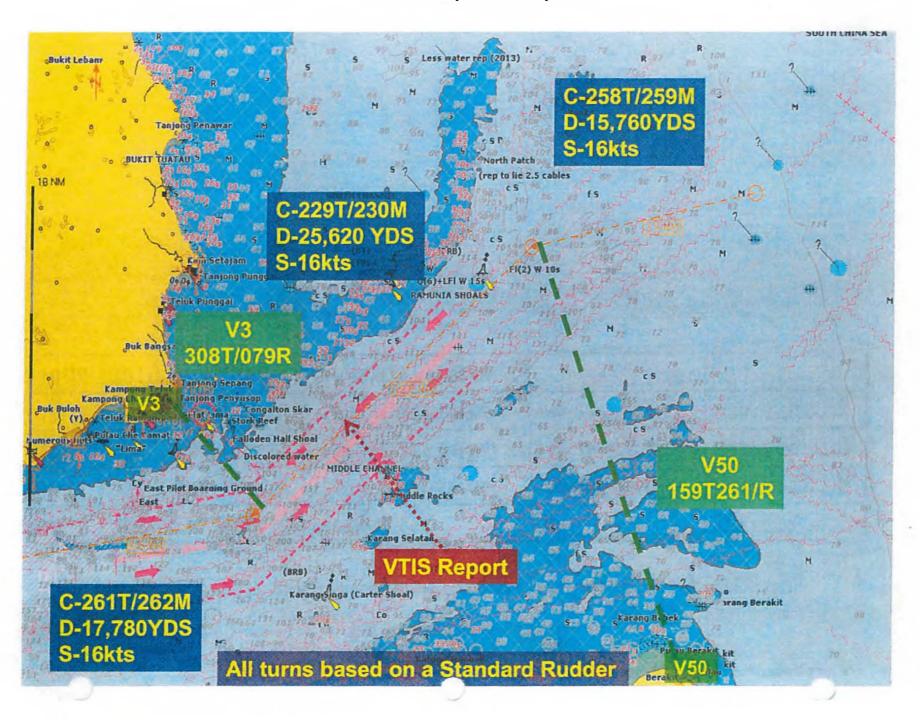
| WPs   | Course     | Speed  | Distance            | ТВ             | TR            |  |
|-------|------------|--------|---------------------|----------------|---------------|--|
| 1-2   | 258T/ 259M | 16 kts | 15,760YDS / 7.88NM  | V50- 159T/261R | R2- 26,400YDS |  |
| 2-3   | 229T/230M  | 16 kts | 25,620YDS / 12.81NM | V3- 308T/079R  | R11-28,520YDS |  |
| 3-4   | 261T/262M  | 16 kts | 17,780YDS / 8.89NM  | V4- 346T/085R  | R13-18,920YDS |  |
| 4-5   | 281T/282M  | 16 kts | 8,240YDS / 4.12NM   | V6- 024T/103R  | R13-10,760YDS |  |
| 5-6   | 311T/312M  | 12 kts | 17,320YDS / 8.66NM  | V12-214T/263R  | R20- 2,518YDS |  |
| 6-7   | 283T/284M  | 12 kts | 1,908YDS / 0.95NM   | V13- 201T/278R | R22-2,325YDS  |  |
| 7-8   | 268T/269M  | 12 kts | 1,201YDS / 0.60NM   | V13-174T/266R  | R24-2,866YDS  |  |
| 8-9   | 249T/250M  | 12 kts | 2,860 YDS / 1.43NM  | V17-350T/101R  | R26-4,380YDS  |  |
| 9-10  | 311T/312M  | 12 kts | 6,440YDS / 3.22NM   | V32-259T/308R  | R30-2,231YDS  |  |
| 10-11 | 277T/278M  | 12 kts | 2,459YDS / 1.22NM   | V31-026T/109T  | R33-4,320YDS  |  |



## Track Data

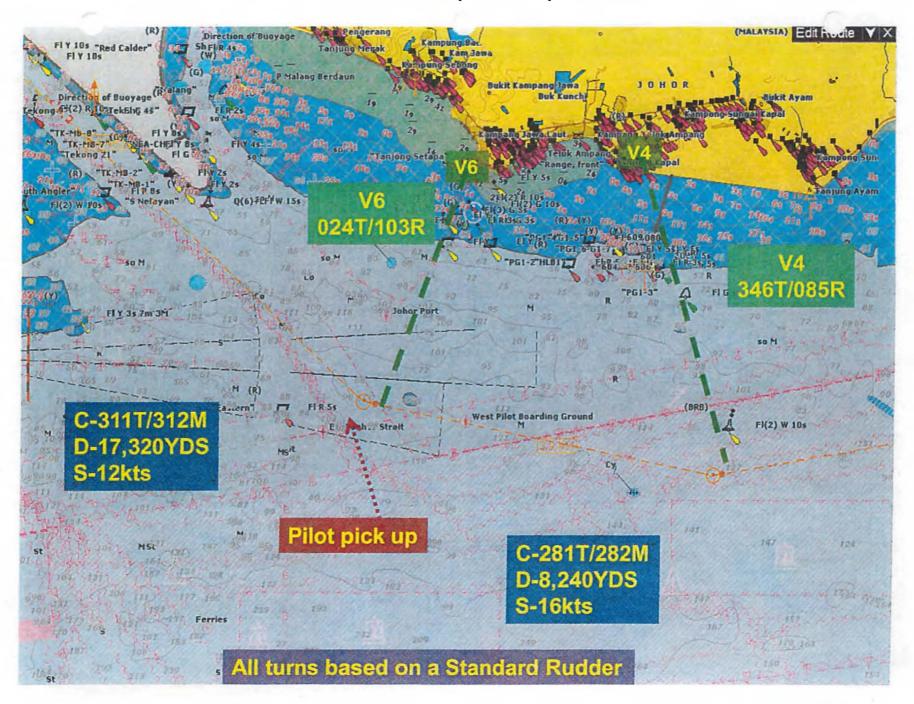
| WPs   | Course    | Speed  | Distance          | ТВ            | TR            |
|-------|-----------|--------|-------------------|---------------|---------------|
| 11-12 | 294T/295M | 12 kts | 1,578YDS / 0.78NM | V36-354T/060R | R35- 4,260YDS |
| 12-13 | 321T/322M | 12 kts | 4,020YDS / 2.01NM | V41-269T/308R | R37- 2,501YDS |
| 13-14 | 300T/301M | 12 kts | 1,617YDS / 0.80NM | V41-234T/294R | R38- 3,787YDS |
| 14-15 | 291T/292M | 12 kts | 2,142YDS / 1.07NM |               |               |

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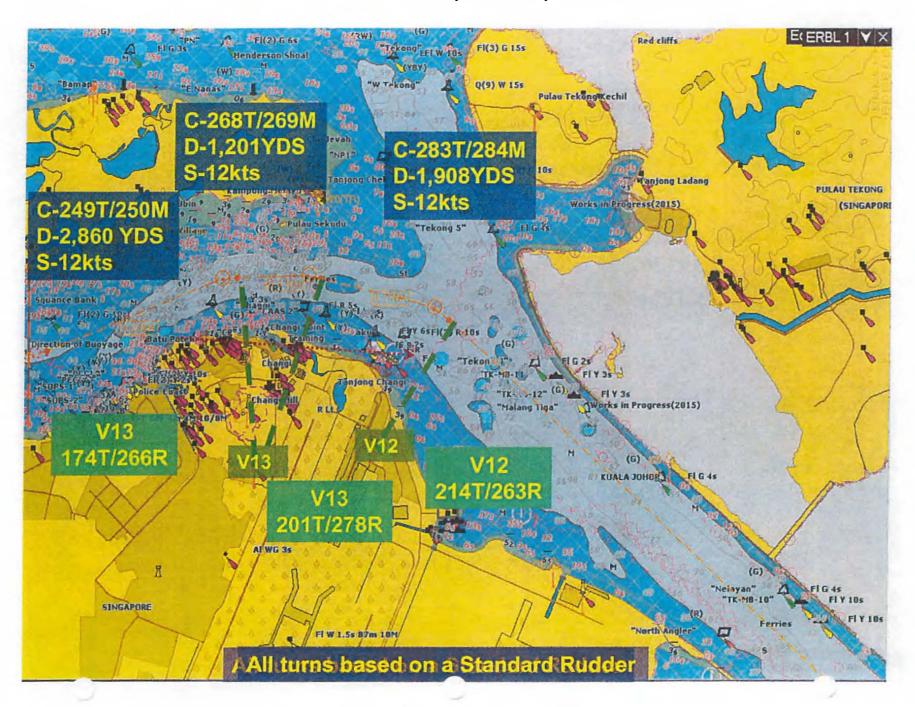
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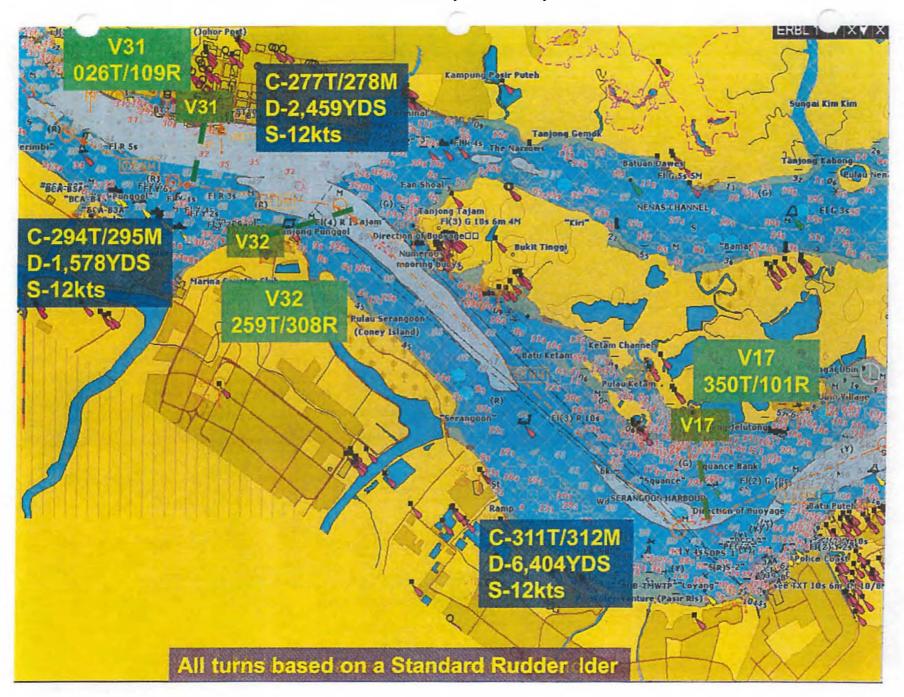


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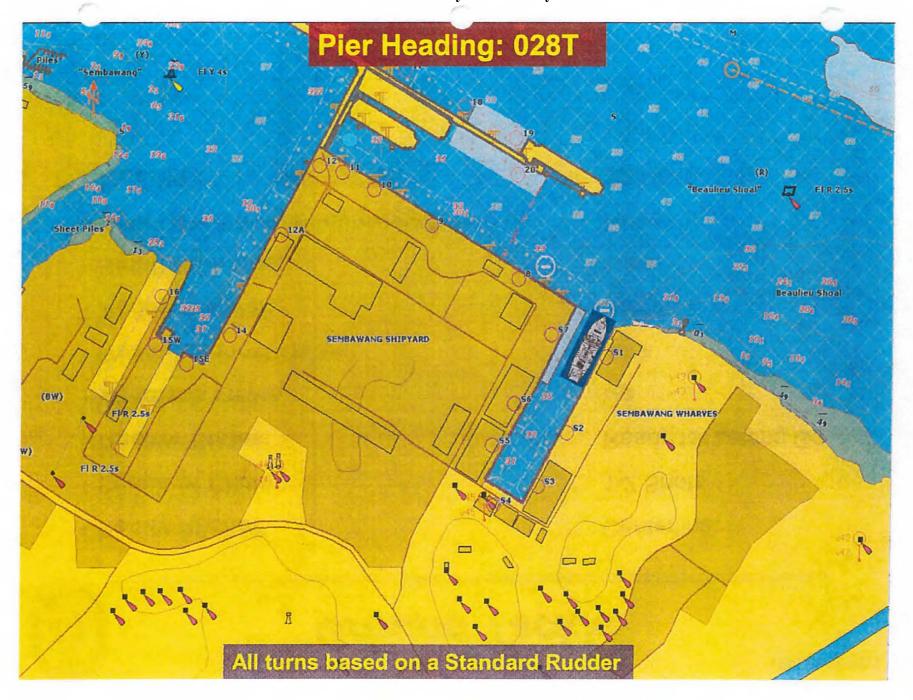
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### **Ground Tackle**

• Ready Anchor: Centerline

• Scope of Chain: 1-2 Shots

• Anchor Status: Ready for Letting Go

• Windlass status: Up

• Ready Lifeboat status: Jack

Accom Ladder:
 Stowed

• Small Boat Ops: None

Special mooring buoy procedures: None

• Mooring: SST S-1

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## Navigation Equipment Status

- Gyro Error: 0.4E by Azimuth (20Aug17)
- Gyro Repeaters
  - Centerline: 0
  - Helm: 0
  - Port Bridge Wing: 0.0
  - Starboard Bridge Wing: 0.5W
  - CIC CADRT: 0
  - CIC TAO: 0
  - Aft Steering: 0
- Magnetic Variation: 1° W
- DFGMC: Operational
- NAVSSI: Operational
- AN/SPS-73: Operational
- SPA-25G/CIC: Operational
- MOB Indicator: Operational
- · ENL: Operational

VMS: Operational

WSN-7: Operational

AN/SPS-67: Operational

Fathometer: Operational

Navigation Lights: Operational

**DAGR: Operational** 



### **Communications**

- External
  - VTIS:
    - VHF Chs. 10, 12, 16
    - Report Abeam of HB Light
    - Name, C/S, Posit
  - Singapore Pilots
    - VHF 20
    - Reprt 3 Hours Prior
    - Name, C/S, ETA, Direction
  - JSM Monitor:
    - VHF Chs. 12, 16, 20

- Internal
  - Command Net:
    - Net 15
  - Bridge/Focsle/Midships/Fantail:
    - Net 56
  - Nav Team:
    - Net 22
  - Lookouts
    - Net 52

Secondary: Radio Ch 8-B Tertiary: 1MC



#### Plant Status

· Plant Status/Configuration:

| GTM:            | 1A | 1B | 2A | 2B |   |   |
|-----------------|----|----|----|----|---|---|
| GTG:            | 1  | 2  | 3  |    |   |   |
| Steering Units: | 2A | 2B | 1A | 1B |   |   |
| SWS PUMP:       | 1  | 2  | 3  | 4  | 5 |   |
| Fire Pump:      | 1  | 2  | 3  | 4  | 5 | 6 |

**Electrical Configuration:** 

1 & 2 GTG Ring Bus Parallel, 2 GTG Running Offline

**Plant Limiting Conditions:** 

Steering Mode: Backup Manual

**Degaussing Status:** 

Energized

**ONLINE** 

STBY/OFFLINE

SECURED

OOC











## **Emergency Actions**

- · Loss of Steering
- Loss of Gyros
- Loss of Communication
- Reduced Visibility
- Man Overboard
- VMS Casualties
- Restricted Maneuvering Doctrine



# Loss of Steering - Master Helmsmen

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- · Reports lost steering control to OOD/CONN,
- · If rudder control is not regained, shift to Standby Power Unit
- If rudder control is not regained, shift to Aft Steering Control, depress button
- · Aft Steering will take control, and respond to steering order from the CONN
- If steering control is not regained, Aft Steering will shift HPU LCU to local and steer via HELM ORDER KNOB



# Loss of Gyro / Comms - OOD

#### · Loss of Gyro:

- Shift to Alternate Gyro
- Shift to DFGMC
- Nav team shift to relative fixes

#### · Loss of Comms:

- Shift to Secondary Comms as briefed



# Low Visibility & MOB - OOD

#### Low Visibility

- Station the Low Visibility Detail
- Commence sounding fog signals
- Energize Navigation lights
- Commence Low Vis Checklist

#### Man Overboard

- Sound six short blasts on the ship's whistle
- Throw a life ring and smoke float over the side
- Close up "Oscar" signal flag
- CIC provides continuous bearings and ranges to the MOB position
- Utilize ready RHIB if tugs are unable to assist



## VMS Casualties - Nav

#### · Loss of GPS

- Reports loss GPS
- Shift to GPS2
- Shift to Manual Inputs GPS (DAGR)
- Continue Visual/Radar LOPs

#### · Loss of Node

- Report loss Of VMS Node
- Shift to Alternate VMS Node
- Note: 9 minute start up time

#### · Loss of VMS

- Shift to NAV 2
- Shift to ENL



### RMD - EOOW

#### GTM Casualties

- The EOOW may take normal EOCC actions until one online engine remains on each shaft
- Last engine on last shaft will be placed in Battle Override and remain in operation until permission is granted by the Commanding Officer to secure
- Thrust control will remain in the Pilot House

#### GTG Casualties

- The EOOW may take normal EOCC actions until only one GTG remains online
- Last online generator will remain in operation until permission is granted by the Commanding Officer to secure



### RMD - EOOW

#### MRG/Shaft Casualties

- EOOW will notify the OOD of the casualty and perform EOCC with the following exceptions:
  - Throttle control is to remain at the SCC
  - If Controllable, EOOW will not take control of the shaft will request to slow the affected shaft one major speed change and order compensating turns on the unaffected shaft.
    - ➤ EOOW will advise OOD on the number of compensating turns
  - If Uncontrollable, EOOW will not take control and will not stop the affected shaft until ordered by the OOD



### RMD - EOOW

#### Loss of CRP Control

- Throttle control is to remain at the SCC
- EOOW will order the respective OD Box Operator to take manual control and maintain the last ordered pitch
- OD Box Operator will answer the ordered pitch
- If pitch control is regained at the OD Box then control will remain at the OD Box until OOD ordered control shifted to SCC
- Pitch orders directly to OD box from Helm Safety Officer

As EOOW, I will provide early reports to the OOD of unusual conditions or trends in the Engineering Plant to maximize warning, build situational awareness, and to buy time to maneuver to safe waters



# FP & Weapon Overview

#### · GCO in Pilot House

- .50 Cal's at MT 503/504/507/508
- ROC Operators for 2501/2502 EOS



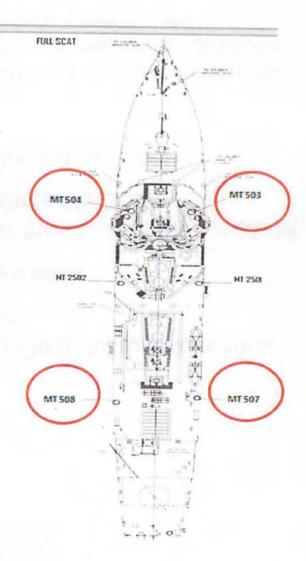
#### Comms

- Primary:

ATFP Radios, Ch 11-B

- Secondary:

**NET 68** 





## Small Boat Attack

PPR's as listed in JOHNSMcCAININST 3300.1J

- Intentions for small Fishing/Sailing Boats:
  - Warn using LRAD and/or Bullhorn as applicable
  - Coordinate with OOD to sound "5 Short" if necessary
  - Warn with LA-9/P at GCO's discretion



### **ORM Risk to Mission**

| HAZARD / THREAT                           | ASSESSED<br>RAC  | RISK CONTROLS & MITIGATION   | REVISED<br>RAC | SUPERVISION   |
|---|--|--|----------------|---|
| Running Aground or Collision              | C, f = 2   | <ul> <li>Compare navigation sensors.</li> <li>Communicate b/w Bridge and CIC</li> <li>Stay aware of nearest hazard</li> <li>Monitor contact bearing drift</li> </ul> | C, II = 3      | Navigator     OOD     Shipping Officer     Piloting Officer |
| Navigation Equipment<br>Malfunction       | 8, II = 2  | Shift to alternates as briefed   | C, III = 4     | Navigator     OOD   |
| Communications<br>Failure                 | Utilize primary comms     Shift to secondary comms if needed |  | D, II = 4      | OOD TAO EOOW Safety Observers                               |
| Breakdown in BRM                          | B, II = 2  | Maintain silence on the bridge     Organize and delegate watchteam   | C; II = 3      | • OOD   |
| Engineering / Prop /<br>Steering Casualty | C, 1 = 2   | Complete required PMS     Master Helmsmen on station     Follow ship's RMD and EOCC  | D, 1 = 3       | OOD EOOW Helm Safety Officer                                |
| Low Visibility                            | C, I = 2   | <ul> <li>Station low visibility detail</li> <li>Commence fog signals</li> <li>Utilize low visibility checklist</li> </ul>  | D, 1 = 3       | · OOD   |

| Probability | A: Likely to occur immediately or within a short period of time     B: Probably will occur     C: May occur in time     D: Unlikely to occur   |
|-------------|--|
| Severity    | May cause death, loss of facility/asset, mission failure     May cause severe injury, illness, property damage, mission degradation     May cause minor injury, illness, property damage, mission degradation     Winimal Threat, no impact to mission success |

|          |     | P | roba | abili | ty |  |  |  |  |
|----------|-----|---|------|-------|----|--|--|--|--|
| 1        | ABC |   |      |       |    |  |  |  |  |
|          | 1   | 1 | 1    | 2     | 3  |  |  |  |  |
| Severity | 11  | 1 | 2    | *5    | 4  |  |  |  |  |
| Sev      | III | 2 | 3    | 4     | 5  |  |  |  |  |
|          | IV  | 3 | 4    | 5     | 5  |  |  |  |  |

RAC
1 - CRITICAL
2 - SERIOUS
3 - MODERATE
4 - MINOR
5 - NEGLIGIBLE

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# **ORM Risk to Forces**

| HAZARD / THREAT  | ASSESSED<br>RAC | RISK CONTROLS & MITIGATION   | REVISED<br>RAC | SUPERVISION          |
|------------------|-----------------|--|----------------|----------------------|
| Man Overboard    | D, I = 3        | Lifelines in place     Lookouts on station   | D, II = 4      | • OOD                |
| Personnel Injury | D, II = 4       | <ul> <li>Safety briefs are held on station</li> <li>Qualified Safety Observers on station</li> </ul> | D, III = 5     | Controlling Stations |

| Probability | A: Likely to occur immediately or within a short period of time     B: Probably will occur     C: May occur in time     D: Unlikely to occur   |
|-------------|--|
| Severity    | I: May cause death, loss of facility/asset, mission failure II: May cause severe injury, illness, property damage, mission degradation III: May cause minor injury, illness, property damage, mission degradation IV: Minimal Threat, no impact to mission success |

|          |     | P | roba | abili | ty |
|----------|-----|---|------|-------|----|
|          |     | Α | В    | С     | D  |
|          | 1   | 1 | 1    | 2     | 3  |
| Severity | II  | 1 | 2    | 3     | 4  |
| Sev      | III | 2 | 3    | 4     | 5  |
|          | IV  | 3 | 4    | 5     | 5  |

| RAC            |
|----------------|
| 1 - CRITICAL   |
| 2 - SERIOUS    |
| 3 - MODERATE   |
| 4 - MINOR      |
| 5 - NEGLIGIBLE |



# Overall ORM

|                                    |                                     | Probabil   | ity (Expected frequ                            | ency of occurrence                      | over time)  |  |
|------------------------------------|-------------------------------------|--|--|---|---|--|
| Risk<br>Assessment<br>Matrix       |                                     | Frequent<br>Continuous,<br>regular, or<br>inevitable | Likely<br>Several;<br>Will occur<br>frequently | Seldom Unlikely; Can occur infrequently | Unlikely<br>Improbable;<br>But possible<br>occurrence |  |
| 0                                  | Catastrophic Asset Loss/ Death      | Critical<br>(RAC 1)                                  | Critical<br>(RAC 1)                            | Serious<br>(RAC 2)                      | Moderate<br>(RAC 3)                                   |  |
| Severity<br>(Expected Consequence) | Critical Severe Damage/ Injury      | Critical<br>(RAC 1)                                  | Serious<br>(RAC 2)                             | Moderate<br>(RAC 3)                     | Minor<br>(RAC 4)                                      |  |
|                                    | Moderate Minor Damage/ Injury       | Serious<br>(RAC 2)                                   | Moderate<br>(RAC 3)                            | Minor<br>(RAC 4)                        | Negligible<br>(RAC 4)                                 |  |
|                                    | Negligible<br>Little Damage/ Injury | Moderate<br>(RAC 3)                                  | Minor<br>(RAC 4)                               | Negligible<br>(RAC 4)                   | Negligible<br>(RAC 4)                                 |  |

| Probability | A: Likely to occur immediately or within a short period of time     B: Probably will occur     C: May occur in time     D: Unlikely to occur   |
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|          |     | P | roba | abili | ty |
|----------|-----|---|------|-------|----|
|          |     | A | В    | С     | D  |
|          | 1   | 1 | 1    | 2     | 3  |
| Severity | 11  | 1 | 2    | 3     | 4  |
| Sev      | III | 2 | 3    | 4     | 5  |
|          | IV  | 3 | 4    | 5     | 5  |

| RAC            |
|----------------|
| 1 - CRITICAL   |
| 2 - SERIOUS    |
| 3 - MODERATE   |
| 4 - MINOR      |
| 5 - NEGLIGIBLE |



# Navigator's Comments

- · Early start and long evolution, get plenty of rest tonight
- · Singapore is a high traffic area, stay alert to shipping picture
- Stationing an hour prior to sunrise with no illumination, topside light discipline is important as we get manned and ready
- Once pierside, the day is not over, lots of moving parts to set up for the VRAV MINI CHANGE



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### **Comments**

# Around the Room



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## **Comments**

CMC



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## **Comments**





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### **Comments**

CO

|  |  | by the | US Navy. |  |  |  |  |
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