Flag State Marine Safety Investigations
Safety at Sea Conference

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Singapore
**TSIB Functions**

- To fulfill Singapore’s obligation under the SOLAS convention, in compliance with the Casualty Investigation Code, to investigate –
  - Very Serious Marine Casualties (VSMC)*
  - Serious Marine Casualties and Marine Incidents where safety lessons could be learned and changes to the present regulations could be achieved

- Safety promotion

*Loss of Life / Total Loss of Ship / Severe Pollution (>50 MT of Pollutant) – Mandatory investigation for IMO*
When does TSIB investigate

As an independent investigation agency, TSIB (Marine), under the Ministry of Transport is responsible for the conduct of a Marine Safety Investigation (MSI) as per the CI Code:

- Outside Singapore Territorial Waters – **Very Serious Marine Casualties** that involve Singapore registered vessels;

- Within Singapore Territorial waters – **Very Serious Marine Casualties** that involves any flagged vessels.
IMO Instruments Implementation (III) Code – Res. A 1070 (28)

Adopted 4 December, 2013

To enhance global maritime safety & protection of the marine environment & assist States in the implementation of instruments of the Organization -

23 – A **flag state** should develop and implement a control and monitoring program –

.1 *provide for prompt and thorough casualty investigations* – (IMO Reporting)

.2 *provide for collection of statistical data so that trend analyses can be conducted to identify problem areas*
III Code – Res. A 1070 (28)

38 – Marine safety investigations should be conducted by impartial and objective investigators, who are suitably qualified and knowledgeable in matters relating to the casualty....

41 - Ship casualties should be investigated and reported in accordance with the relevant international instruments, taking into account the **Casualty Investigation Code** which should then be forwarded to the Organization (IMO).
Stakeholders involved

• State Level – Substantially Interested State(s) [Sub. Int. State]
  – Flag State
  – Coastal state
  – A state whose environment is severely damaged / affected as a result
  – Where the consequences of a casualty threatened islands / installations / structures over which the state is entitled to exercise jurisdiction
  – Where nationals of a State have lost their lives
  – A state that has important information at its disposal
  – That for some reason establishes an interest considers significant by the investigating state
Stakeholders involved

- Non-state Level [Sub. Int. Parties] – Seafarer / Shipowner / Charterer / Classification Society / Port operator / Equipment manufacturer / Marine service provider \textit{et al}
Key Provisions of IMO’s CI Code

- Any Substantially Interested (SI) State may conduct a safety investigation as the Marine Safety Investigating State after mutual agreement with other SI States.
- Sole objective is prevention of accidents and incidents. Not apportioning of blame or liability.
  
  *Note - Cannot prevent others from inferring blame or liability from investigation’s findings*

- Does not preclude other civil, criminal and administrative proceedings or investigations (e.g. by regulator, police, coroner).

- Shall be separate from any judicial or administrative proceedings to apportion blame or liability.
MARINE SAFETY INVESTIGATION FLOW-CHART

Evidence Gathering

Details – VTS plots, VHF transcripts, shiplogs etc

Field Deployment – ship, location of incident

Interviews – ship crew, may include 3rd party: VTS officer, crew from other ships, NEA, Terminal Operators, Harbour Pilots, Marine Superintendents etc

Obtain relevant information from sources and conduct MSI in accordance with CI Code.

Recommendations – Safety
Lessons learnt promulgated through:
• IMO Global Integrated Shipping Information System (GISIS)
• TSIB Bulletin / Safety Flyers
• International and Regional level – MAIIF and MAIFA
• Counseling / Safety Meetings – Company / Individuals
• Shipping Community - Shipping Circulars
• Safety Briefings at SMA – Maritime Students
• Safety Workshops / FMSS sessions – SRS / PoS
• Crew, operators, owners
• Safety@Sea week conference

Findings, Analysis, Conclusions

Singapore Registered Ships
• Ship Owners
• Other Administrations
• Publications, Newsletter etc

Singapore Territorial Waters
Portmaster’s Department

Administrative Inquiry

TSIB together with MPA-IVD will appraise the incident – TSIB’s Investigation launched?

YES

NO

Notification
What to expect

• Marine Safety Investigators from various state(s) who act as Substantially Interested State

  – E.g. A casualty involving a Singapore flagged cargo ship and say a French fishing vessel in the Dover Strait that resulted in the loss of life of persons from 3 different states, could potentially result in at least 5 safety investigators appointed respective states involved in the casualty

• Mutual Agreement as per the Casualty Code will typically only have ONE investigating state.......but be prepared for more than one state investigator!
What to expect

A Marine Safety Investigator –

• has the fundamental purpose to gather maximum information
• is expected to **analyse all possible** and probable areas that preceded the casualty event, and not just the direct cause, i.e. organisational factors, human performance, equipment design, trade nuances, effectiveness of the safety management system
• is not empowered to take punitive actions or recommend punitive proposals
What to expect

• The safety investigator is expected to uphold the human rights of the seafarer

• Evidence provided by the seafarer to the safety investigator cannot be used in civil, criminal or administrative proceedings – Protection offered to the seafarer

• An investigation which has been completed, may be re-opened at a later date

• The safety investigator will look deeper into organisational levels of processes, to go beyond the proximate causes, to determine if there were safety culture issues

• Draft report must be sent to States concerned for comments (30 days to be allowed)

• Final report must be made public
LESH – Software

procedures, manuals, checklists

LL – Physiological conditions, knowledge, skills

workstation, seats, displays, controls

temperature, noise, vibration, air quality, weather

personalities, relationships, communication styles

Central

Peripheral
Human Factors

**MYTH**
- Human error occurs randomly
- A highly experienced and motivated operator could not have made an error during familiar task
- Operators who make errors during a familiar task reveal lack of skill, vigilance, or diligence

**FACT**
- Human error is not random
- It is systematically connected to features of operator’s tools, tasks, and operating environment
- The best people can make the worst mistakes
- Skill, vigilance, and diligence are necessary but not sufficient to prevent error
Human Factors

**SYMPTOMATIC SOLUTIONS**
- Directed at “What”
- “Be careful”
- “Pay attention”
- Punish error makers

**FUNDAMENTAL SOLUTIONS**
- Directed at Why
- Improve procedures
- Improve equipment
- Improve training
- Change environment
Key takeaways...

• Seafarers do not come onboard with an **Agenda** to be involved with accidents
• Accidents do not happen by **themselves**
• There is **no wrong place or wrong time** in shipboard accidents
• Barriers can fail and it is our responsibility to implement **redundancies**
• Attitude of and in an individual can improve the **safety culture** onboard
• Safety is not the responsibility of the HSE(Q) department  It is **everyone’s** – **ALL Inclusive**
# IMO Contact Points

<table>
<thead>
<tr>
<th>Authority Competency</th>
<th>Competent Administration/Services Address</th>
<th>CASUALTY INVESTIGATION</th>
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</table>
| Singapore            | Transport Safety Investigation Bureau, Singapore  
Outcome of the Investigation Ocean Accident  
Passenger Terminal Building 2,  
#048-058, Singapore Changi Airport  
Changi Airport Post Office PO Box 1005  
Singapore 918155  
Singapore  
Shipping Division Maritime and Port Authority of Singapore  
21-00 PSA Building  
460 Alexandra Road  
119963  
Singapore  
Singapore | Tel: 65 6576 5334  
Fax: 65 6542 2394  
Telex:  
Email: notification_to_msib@mot.gov.sg  
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Fax: 65 6375 6231  
Telex:  
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Thank you

TSIB (Marine) 24 Hr. Accident Notification No.:
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