



European Maritime Safety Agency

**SAFEMED III Seminar
on Marine Accident Investigation
18 and 19 February 2014
EMSA, Lisbon**



Setting up an investigation

1

Jesús Valle Cabezas
Jesus.VALLE-CABEZAS@emsa.europa.eu



European Maritime Safety Agency

Setting up an investigation:

Estimated duration:

✓ 30 minutes.

Content:

- ✓ Operational readiness and the work to processes
- ✓ Involvement of properly trained investigators

2

Operational Readiness

- What do we do?
 - too late to start thinking only now!



3

Operational readiness Information sources

Can include: (by no means exhaustive list)

- Contact details
 - Flag State;
 - 24hr contacts for investigative bodies;
 - Other national authorities (CG, port authorities, police)
- Ship and company details ('Seaweb', Equasis, etc.)
- AIS information, VTS
- Environmental and hydrological data
- Nautical publications
- Access to IMO Conventions and maritime regulations, etc
- VDR, ECDIS and GPS reference sources
- Travel information for deploying investigators

4

Operational readiness

Health and safety



- Investigative Body has duty of care for its staff
- Investigating accidents is a hazardous activity
- Risk assessment and mitigation measures should be derived centrally as well as by investigator on site
- Investigator health and inoculations:
 - *Yellow fever*
 - *Tetanus*
 - *Diphtheria*
 - *Polio*
 - *Hepatitis A*
 - *Hepatitis B*
 - *Typhoid*
- Security of destination countries



7

Operational readiness

Investigator Equipment

Can include:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Suitable identity documents; • High-visibility and protective waterproof jacket; • Steel toe-capped, non-slip working boots; • Safety helmet with fitted ear protectors; • Safety goggles/glasses; • High-visibility vest; • Automatic inflatable lifejacket; • Working gloves; • Overalls (reusable and disposable types); • Dust mask; • Latex type gloves for forensic evidence collection; • Waterproof trousers; • Safety torch; • First aid/medical kit; | <ul style="list-style-type: none"> • Mobile telephone; • VDR downloading equipment; • Digital camera; • Digital camcorder; • Steel tape measure; • Voice recorder; • Laptop computer; • Measuring and sampling equipment –sample containers; • Spare batteries and other equipment accessories; • Writing materials; • Oxygen /HS2/CO2 analyser with in-date test certification; • A basic tool kit when physical evidence removal is expected; • ... |
|---|--|

8

Operational readiness Work processes

Preparedness plan shall ensure resources and procedures are, as far as possible, immediately available to meet the requirements, including sufficient suitable qualified investigators and any necessary co-ordination, nationally or internationally, to enable initial actions to be taken promptly, after notification of a casualty or incident is first received.

Initial assessment and response

On being notified the AI body shall assess the situation.

The initial assessment is critical for investigative bodies to gather an overview as possible, minimise the potential loss of evidence, and determine the scope of information required to decide the appropriate action.

Establishing a strategy of the investigation

The lead AI-body, in close liaison with those of the other substantially interested states, shall expeditiously develop a strategy for the scope, direction and timing of the investigation

Collecting evidences

During the initial stage of every investigation, investigators shall collect as much of the relevant evidence as possible which may help understand the incident and determining its causes, keeping in mind the possible breath of any investigation.

Analysis

The lead AI-body, in cooperation with other substantially interested States, shall analyze evidences and related additional data with a view to identifying causal and contributing factors.

9

Operational readiness Work processes

Preparedness plan shall ensure resources and procedures are, as far as possible, immediately available to meet the requirements, including sufficient suitable qualified investigators and any necessary co-ordination, nationally or internationally, to enable initial actions to be taken promptly, after notification of a casualty or incident is first received.

Safety recommendations

Based on the analysis establish safety recommendations, if any

Report

The lead AI-body shall produce a draft report in liaison with other substantially interested States. It shall present, in a consistent and concise style, the facts and analysis which are used to support the conclusions and recommendations

Follow-up safety recommendations

Member States shall ensure the safety recommendations are duly taken into account by the addressees

10

Major accident Response

- Important to prepare for major accidents
- Conduct exercises (where possible) to:
 - Test procedures and contacts
 - Raise awareness of accident investigation body

11

Operational readiness

Work processes - Notification

Initial fact finding often takes place under pressure, the following will be useful in assessing the seriousness and the best response:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Source of notification • Time and date of notification • Time and date of marine casualty; • The name of the ship, ship type, and its Flag State; • Name and contact details of owners and operators; • Name and contact details of ship agents, if applicable; • The IMO number or distinctive letters; • The nature of the marine casualty; • The location of the marine casualty, including latitude and longitude, where known; • The number of any seriously injured or killed persons; • Consequences of the casualty to individuals, property and the environment; | <ul style="list-style-type: none"> • A brief description of the casualty event; • The identification of any other ship involved; • Each ship's condition and intended movements; • Contact details of anyone with information about the casualty or its victims; • Details of VDR's, where fitted: - an early decision on whether to request the VDR data be 'saved' should be made • The contact details of each involved ship, shipping company and point of contact; • Contact information for the competent authority of any substantially interested State, and their investigative body; • ... |
|---|--|

12

Involvement of properly trained investigators

Resources required

- Additional investigators?
- Specialist contractors? e.g.
 - ship chemists
 - equipment/machinery manufacturers, test houses
 - salvage contractors, divers,
 - ship engineering services
 - underwater search contractors
- Administrative support for local procurement processes?
- Local office/interview facilities?

13

Involvement of properly trained investigators

Initial scene capture

- Initial walk through, if safe to do so!
- Photograph the scene thoroughly
- Make written and voice notes, photographs, sketches and diagrams, particularly of
 - the positions of controls and switches,
 - the location of used emergency equipment,
 - the extent of damage, and
 - the location and nature of other items of interest
- Record exactly what any emergency response personnel are doing in order to work back to the state of the scene before they started their activities



14

Involvement of properly trained investigators Site hazard identification and risk assessment



15

Involvement of properly trained investigators Responsibility

- Safety does not just happen, it is a result of:
 - Good management
 - Proper training
 - Effective procedures
- A MS investigative body has a duty of care for its investigators, but:

16

Safety is everyone's responsibility!



Involvement of properly trained investigators Responsibility

- Hopefully maritime background of investigators will ensure they are familiar with many common maritime hazards
- Must be aware of additional hazards associated with accident sites
- Investigators should ensure they:
 - Take reasonable care for their own health and safety, as well as for others who may be affected by their actions;
 - Co-operate with anyone else carrying out health and safety duties – including compliance with control measures;
 - Report any identified serious hazards or deficiencies immediately to the appropriate officer;
 - Not interfere with, or misuse, anything provided in the interests of health and safety



17



Involvement of properly trained investigators Risk assessment

- Basic steps to a risk assessment:
 - Identification of the hazards,
 - Assessment of the chances of a hazardous event occurring,
 - Assessment of the severity or consequences, and
 - If the combined risk and severity is too great, taking some action to reduce the risk to as low a level as is reasonably practicable.
- A generic risk assessment by the AI body will enable basic safety procedures to be developed
- A further dynamic risk assessment must be conducted by investigators at the accident scene



18



Involvement of properly trained investigators

Example generic risk assessment

Activity		Machinery/Spaces				
	Hazard	Severity	Likelihood	Risk	Control measures	Comments
1	Loose floor plates, open manholes, loose/missing handrails	Moderate	Likely	High	Secure floor plates, manholes covered, handrails in place	
2	Poor lighting, bad access, poor ventilation, liquid/solid waste	Moderate	Likely	High	Adequate lighting, safe access, maximum ventilation, clean spaces	
3	Asphyxiation, gassing, toxic/flammable atmosphere	Extreme	Unlikely	Very high	Ensure atmosphere is declared gas free and breathable before entry	
4	Ladders poorly secured, poor maintenance, damaged rungs, falling	Moderate	Unlikely	Medium	Secure ladder, safety harness, examine ladder for damage	
5	Loose asbestos, inhaling dust	Extreme	Unlikely	Very high	Ensure environment is declared safe by asbestos expert before entry	
6	Unguarded machinery	Extreme	Unlikely	Very high	Machinery guarded, no loose equipment, clean surfaces and machinery	
7	Watertight doors	Extreme	Unlikely	Very high	Isolate electric supply to door Put up warning notice Check that it is in local control	

19

Involvement of properly trained investigators

Hazards to consider

- General hazards

20

General- lighting, slippery decks, etc



21

General- access to ships



22

General- pyrotechnics



23

Involvement of properly trained investigators Hazards to consider

- General hazards
- Pressurised containers
- Batteries
- Biohazards

24



Biohazard



25

Involvement of properly trained investigators

Hazards to consider

- General hazards
- Pressurised containers
- Batteries
- Biohazards
- Flammable liquids and gases
- Asbestos and composite materials
- Hazardous materials

26

Hazardous materials



27

Hazardous material precaution

- EXPECT- hazardous material to be present in cargo accidents until determined otherwise
- WAIT- until, fires, explosions, vapours have been eliminated
- FOLLOW- others, certified as competent experts
- DON'T- take chances if you are uncertain

28

Involvement of properly trained investigators

Hazards to consider

- General hazards
- Pressurised containers
- Batteries
- Biohazards
- Flammable liquids and gases
- Asbestos and composite materials
- Hazardous materials
- Confined spaces

29

Confined spaces



30

Involvement of properly trained investigators

Hazards to consider

- General hazards
- Pressurised containers
- Batteries
- Biohazards
- Flammable liquids and gases
- Asbestos and composite materials
- Hazardous materials
- Confined spaces
- Lone working
- Climate and working conditions
- Radioactive materials
- Fire scenes

31

Fire/ radioactive hazard



32



33

Thanks for listening!