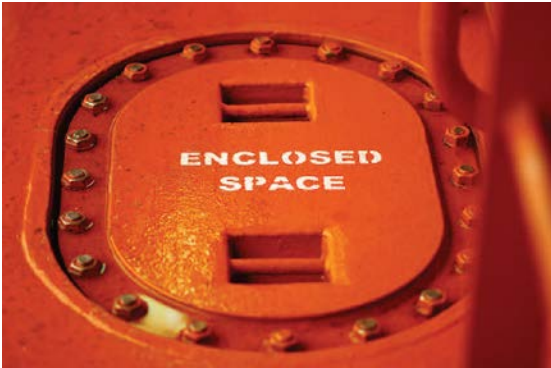




Enclosed space entry

Accidents relating to entry into enclosed spaces on board ships continue to blight the shipping industry, with an unacceptably large number of incidents resulting in the death or injury of both ship and shore personnel.



IMO definition of an enclosed space

1. limited openings for entry and exit;
2. inadequate ventilation; and
3. is not designed for continuous worker occupancy, and includes, but is not limited to, cargo spaces, double bottoms, fuel tanks, ballast tanks, cargo pump-rooms, cargo compressor rooms, cofferdams, chain lockers, void spaces, duct keels, inter-barrier spaces, CO₂ room, boilers, engine crankcases, engine scavenge air receivers, sewage tanks, and adjacent connected spaces. This list is not exhaustive and a list should be produced on a ship-by-ship basis to identify enclosed spaces.

Enclosed Spaces – UK P&I CLUB ‘Bowtie approach’

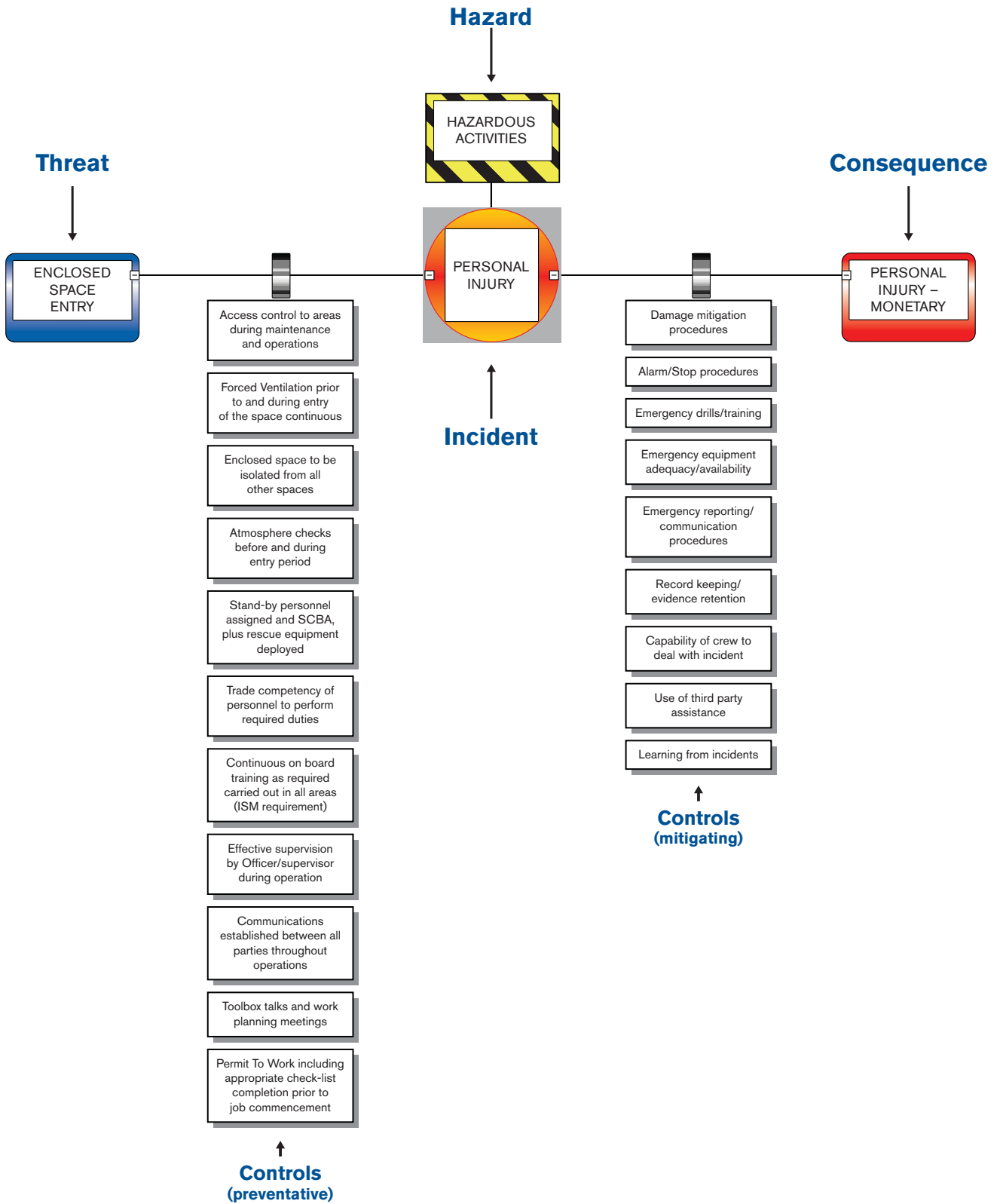
Hazard, threats and consequences: In the centre of the diagram, Hazardous Activities are identified as the ‘hazard’, while blue squares to the left identify a range of ‘threats’, which, if not controlled, could cause a serious incident involving P&I claims and other consequences which can be seen in the red shape on the far right of the diagram.

Controls: Between these extremities can be seen the ‘controls’ which, if they work properly, will prevent the accident happening and on the right hand side of the diagram, controls which will mitigate the consequences.

Thus taking as an example the threat of Enclosed Space Entry (left hand side), controls which should be in place to prevent this include atmosphere checks before and during entry period, trade competency of personnel to perform required duties, effective supervision by an officer or supervisor during operation and enclosed spaces to be isolated from all over spaces.

Consequences: The consequences of an accident (right hand side) will be mitigated by the capability of the crew to deal with an incident, good record keeping, emergency reporting and communication procedures, emergency drills etc.

'Bowtie' with one threat – Enclosed Space Entry



What are we checking?

How effective is that control, are there failures just waiting to happen (latent)?