

Creating a reporting culture



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A reporting culture forms the foundation for safe operations.

In order to establish such a culture, though, there are a number of challenges that must be overcome; not least creating a no-blame environment. Paul Drouin looks at some of the impediments – and their solutions

One of my first administrative tasks when I join a new vessel or company is to check their database of reported accidents and incidents. Although some will say that numbers are not important, I must disagree. Shipboard operations, by their very nature varied and risky, lend themselves to close calls and incidents. If the ship and the company have a strong safety culture these will be reported as a matter of course. Having a strong safety culture also means that a major accident is less likely, because secondary defences will come into play to reduce the consequences of each incident or close call.

On my most recent posting as Master I found that there were few reported close calls on the ship's database. At our morning safety and work meetings I discreetly began to extol the benefits of reporting each and every close call – not just the accidents or incidents – without pointing fingers. Within a few days this strategy had already borne fruit. A senior officer had entered an empty ballast tank without first testing the atmosphere of that tank, which went against company procedures. While there were no undesirable consequences from that unsafe act, the close call was discussed at the morning meeting in a non-accusatory fashion. Above all, I thanked the group for reporting the close call in the first place.

What to report?

Reporting in the marine industry is accomplished on many different levels. A few simple examples might be as follows:

- The master should report all accidents to the company;
- The chief engineer should report any oily water discharges into the sea;
- A deck rating should report a close call that happened while anchoring;
- An engine room rating should report a slip on an oily deck plate while doing rounds;
- A bridge watch keeping officer should report a close quarters situation with another ship;
- A cook should report a cut sustained while working in the galley;
- A company should report any casualty on one of its ships to the flag state administration;

- Flag state administrations should report all serious and very serious casualties involving their ships to the IMO.

Although much can be gained from studying what went right, much more can be gleaned from analysing what went wrong. This means that senior leadership must instil a culture where reporting is a core value of the company; something that is not only encouraged but rewarded. In such an environment, all personnel view the reporting and investigation of an unsafe act or minor injury as on a par with reporting a Lost Time Accident (LTA) or major casualty.

In other words, we must have free and unabashed communication of slips, trips, close calls and accidents all the way up the line. But reporting something that went wrong often goes against our natural instincts. Pride and prejudice are strong influences and human nature is more inclined to hide such events than to broadcast them. Our survival instinct kicks in when we slip up or make mistakes and the preferred option is to say nothing, especially if no severe consequences were a result. Since nothing bad happened, who will be the wiser? And why tell anyone, anyway?

Why report it?

Research has shown that for every severe (personal) incident, sometimes referred to as a lost time accident (LTA), there are about 30 minor injuries and over 300 unsafe acts or actions. The more and better the reporting of these minor injuries and unsafe acts, the better the overall 'safety situational awareness' of the company or vessel will be. This heightened awareness should then provide a better vantage point to take decisions related to safety.

But establishing a reporting culture of this kind is not easy. It takes firm leadership and commitment to the principle of continued improvement. In a study on the reporting culture in the medical field, Justin Waring found that 'Given that errors were regarded as inevitable, doctors often regarded reporting as 'pointless' or a 'waste of time' on the grounds that these mistakes could never be fully eradicated and instead they should just be accepted. In consequence participants could see little purpose for incident reporting.'

This position is particularly interesting, representing, as it does, the point of view of a highly regarded and educated group. Yet, this view that the reporting of errors is pointless or a waste of time is itself fundamentally flawed. Errors – essentially unsafe

acts – do not exist in isolation. They are a result of unsafe conditions or underlying factors. Only by eliminating the unsafe condition will the mistakes be eradicated or the consequences reduced to a tolerable level. Yet, unless these events are reported, the unsafe condition will persist, and will sooner or later provoke other unwanted consequences.

While it may be true that mistakes will always happen, it is false to conclude that it is therefore useless to report them. Such a stance goes against two principles of quality management, those of continual improvement as well as the factual approach to decision making. Without the facts we cannot make an informed decision.

Avoiding blame

Without data, nothing can be analysed. Trends cannot be identified and the unsafe conditions lurking just below the surface cannot be corrected. But if people feel that they will be blamed or persecuted for making a mistake or for being an active player in an accident, they will naturally tend not to report the mishap. Creating a 'just' or 'no-blame' culture is one of the single biggest factors in encouraging and enabling a widespread reporting culture. But what does this mean in real terms?

IMO resolution A.884(21) has the goal of establishing the causes and contributing factors of a casualty, not determining liability, or apportioning blame. It offers the following guidelines for conducting interviews;

...successful interviewing requires the existence of a 'no-blame' atmosphere in which the witness can be made to feel comfortable and is encouraged to tell the truth. It is not the role of the interviewer, or indeed the investigation team, to apportion blame. Their role is to establish the facts and to establish why the occurrence happened.

Many of the major national marine investigative agencies, such as the Transportation Safety Board of Canada (TSB) or the Marine Accident Investigation Branch (MAIB) in the UK, to name only two, have adopted this principle. The Canadians have even taken the pains to ensure, through national legislation, that bridge audio recordings on the VDR are only accessible to their own investigators for accidents under investigation.

While the blame game continues to make headlines in major casualties, this should not influence a company's will to instil a healthy reporting culture on board their ships, including for minor incidents and close calls which are the indicators of unsafe conditions. To accomplish this, company management must adopt the same principles and underlying philosophy as found at the national investigative bodies, namely a no-blame reporting culture.

The introduction of a new, non-punitive reporting system in Denmark allowed pilots and air traffic controllers to feel confident – to trust the system [see box]. This in turn resulted in many more reports than previously received, which in turn was the foundation for active intervention before a major

Barriers to a reporting culture:

- Trying to avoid blame
- Believing minor errors are trivial
- Believing minor errors are 'human nature' and cannot be prevented
- Violation is seen as the norm, so there is no need to report it
- Reports are not followed up

accident occurred – as opposed to reactive action after a disaster. The non-punitive nature of the system allowed the Danish air authorities to instil a much stronger reporting culture within the industry.

When violation is the norm

Violations of established procedures can and do happen on a regular basis in every industry. For instance, in 2009 the coal mining industry in China counted over 2500 deaths due to accidents in mines. Of course, an in-depth analytical study would certainly reveal many contributing factors to this abysmal record. Yet it would also appear obvious from these statistics that not only have violations become the norm in the Chinese coal mining industry, but mine management is probably complicit, if not a leading influence in this behaviour.

But violations are not confined to high risk industries or developing countries. A US air carrier found that over 50% of its aircraft maintenance mishaps involved a knowing violation of company policy. Most of these violations were the result of practices that had developed over time – yet the

How a robust reporting culture can increase safety – an example from the Danish aviation industry.

A large Scandinavian Airlines aircraft collided with a small Cessna on the runway of the Milan airport in Italy. The Cessna had entered the same runway as the large jet without clearance from the control tower; a so called 'runway incursion'. The investigation revealed major flaws with regard to signs and lighting on the runway, as well as the procedures used by the air traffic controller to interact with the Cessna pilot.

As it turned out, the accident had happened not long after a new, non-punitive, reporting system had been implemented in Denmark for the aviation industry. This new reporting system had drastically increased the incidence of runway incursion reports in that country so the authorities had lots of data to scrutinise.

Subsequently, the analysis revealed that some Danish airports also had the same unsafe conditions as at Milan – that is, ambiguous signs and lighting as well as deficient air traffic control procedures. Many changes and improvements were subsequently undertaken.

None of the 40 odd runway incursions under review had resulted in serious consequences. Yet, similarities with the Milan accident were none-the-less striking and only good fortune (luck) had made the difference between a close call and disaster. In essence, it was only a question of time before the unsafe conditions caused serious consequences somewhere in Denmark. The analysis of the close-call data, which was plentiful due in good part to the new non-punitive reporting system, had allowed Danish authorities to correct the unsafe conditions before disaster struck.

workforce was ignorant of the fact that these practices were significantly increasing the risk of a mishap. For the marine industry, an interesting case study where violations became the ‘new normal’ is that of the *Bow Mariner* explosion and sinking.

Clearly, it is just as important to report violations of procedure as it is to report close calls, or actual casualties. Not only do violations of procedure tend to increase risk, these ‘rogue’ acts are a symptom of a malaise that must be addressed. And that is not the only bad news. If violations become prevalent yet, due to luck, no major accident ensues the risky behaviour will be validated. The organisation inevitably slides down the slippery slope away from safety and towards improvisation and expediency. A major accident is now only a question of time.

If the procedure is not being followed, there may be a very good reason why; usually in the name of getting the job done. It may be that the procedure is incorrect, inefficient or otherwise impracticable. In that case, the procedure should be reviewed and corrected. If the procedure is in fact the best way to accomplish the given task, then the personnel must be retrained to properly accomplish the task. Either way, if the violation was not reported in the first place corrective action cannot take place.

But, the hardest is still to come. How to report procedural violations yet continue to instil confidence and mutual respect amongst workers, colleagues and supervisors? In a company with a strong and mature safety culture, reporting procedural violations will be second nature to most personnel. They will feel comfortable sitting down with their supervisor and discussing the issue even if they themselves are the violators. They know that such reporting, even if no harmful consequences resulted from that violation, is the accepted norm. They know that by reporting the violation, they will benefit safety, and hence everyone.

But what if the safety culture of the company is not yet that strong? What if it is your supervisor that committed the violation or caused it to be committed? Certainly in these circumstances there should be an established mechanism to involve a neutral third party, such as a company’s Designated Person (DP). This could take the form of report forms in sealed envelopes or an email address specifically for that purpose and accessed solely by the DP. How the DP deals with the reported violation is also extremely important and will influence to a great degree how crews and officers trust the system. Diplomacy and tact go a long way in these situations. But so too must personnel be accountable for their actions. Repeated violations by the same person may require more than retraining.

The black hole

Another impediment to an effective reporting culture is the lack of feedback and/or action, perceived or real, after reporting. For example, the safety culture survey undertaken subsequent to the Texas City Refinery explosion, where 15 persons lost their lives, found that many workers believed that some incidents, near misses, or other safety concerns did not

In the absence of sufficient accidents to steer by, the only way to sustain a state of intelligent and respectful wariness is by creating a safety information system that collects, analyses and disseminates the knowledge gained from incidents, near misses and other ‘free lessons’. To achieve this, it is first necessary to engineer a reporting culture—not an easy thing, especially when it requires people to confess their own slips, lapses and mistakes.

James Reason, *Achieving a Safe Culture: Theory and Practice*, 1998

get reported for a variety of reasons, including that no corrective action would be taken, so reporting would not be of any value.

Clearly, no one is interested in reporting if they perceive that their efforts do not get results. Just as the hand-off of the baton in a winning relay race must be smooth and interconnected, so must the hand-off be from the report of a close call or incident to corrective action and safety communication to employees. Each reinforces the other in a self sustaining cycle of safety. Stakeholders feel empowered when they see concrete actions materialise from their reporting and are thus more likely to continue reporting. The inverse is also self-evident; lack of action subsequent to reporting will stymie further reports.

The Black Hole syndrome – where reports are handed in and never seen again – exists in many industries and work places. It is management’s role to minimise this syndrome by ensuring that all reports – whether of close calls and minor accidents, of unsafe conditions or deficiencies, or of serious casualties – are attended to in a timely manner. This not only means properly investigating the events to determine the root causes, but effectively communicating the outcomes and results. This in turn builds trust in the reporting system, increases the willingness to report and reinforces the overall safety culture of the organisation.

Danger signs

As mentioned above, for every serious personal accident (lost time accident) there are about 30 minor injuries and probably over 300 unsafe acts or actions. This ‘ratio of severity’ has been shown to be valid over many decades of research. If the relationship of so many unsafe acts for every lost time accident can be counted on as a fairly firm statistical marker, then it can also be used as an early indicator for possible problems.

For example, the report subsequent to the Texas City refinery explosion compared statistics from several refineries owned by the same company. The near miss incident versus major incident ratios from the various refineries were as follows;

Refinery A	36:1
Refinery B	1770:1
Refinery C	541:1
Refinery D	48:1
Refinery E	169:1

Although the refineries were not the same size each had similar operations. The large variations in severity ratios can be seen as a red flag for reporting. It is highly unlikely that refinery B had 49 times more minor incidents than refinery A. Not only are some of the ratios probably too low in their own right (refineries A and D) – such large variations between refineries is a good indicator of inconsistent reporting. For a shipping company this type of analysis can be an important leading indicator for safety and reporting. Ships in a fleet should, in essence, have similar severity ratios. If no lost time accident has happened

in the fleet, then at least the minor and close call reporting numbers should be of the same order of magnitude.

A just culture

The crucial pivot in increasing reporting is switching from a blame culture to what is increasingly being called a just culture. A just culture is one where human error is considered inevitable. As such, an organisation's policies and processes must be continually monitored, through a strong reporting culture and audit process, and hence improved to accommodate those errors. Yet, a just culture does not condone complacency or negligence. Individuals should be accountable for their actions if they knowingly violate safety procedures or policies.

Just as a strong safety culture should form the nucleus of an organisation's approach to managing risks, so too must a robust reporting culture be the glue that helps bind the other elements together to form a systemic approach to reducing risks to levels that are as low as reasonably practicable.

- 1 Nørbjerg, Peter, M. The Creation of an Aviation Safety Reporting Culture in Danish Air Traffic Control, 2nd Workshop on the Investigation and Reporting of Incidents and Accidents, Williamsburg, Virginia, U.S.A. September 2003
- 2 Johnson, William. Installation Error in Airline Maintenance, Galaxy Scientific Corporation, January 2001.
- 3 The Report of the BP U.S. Refineries independent Safety Review Panel, 2007.

Paul Drouin will take over the editing of MARS reporting scheme for a year from the beginning of June 2013. Having served as Master on Canadian Coast Guard vessels, and as a marine accident investigator and senior marine investigator, he is currently Master of the cable ship *IT Interceptor*, carrying out cable repairs. As a senior marine investigator, Paul acted as team leader for a multi-disciplinary group of experts involved in major investigations. His experience covers commercial marine occurrences of all types, including grounding, collision, fire, explosion, striking and sinking.

'Confidential reporting of accidents and close-calls is one of the cornerstones of a safety culture and safety management. I am convinced the mariners that read *Seaways* are benefitting greatly from these few pages,' Paul says.



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The International Maritime Human Element Bulletin

Through the last 3 series' of **Alert!** bulletins, we have focussed on the various issues that can influence the interaction between a person and any other person, system or machine aboard ship.

In this next series, we offer some human element solutions, drawing on the key domains of **Human Resources (HR)** and **Human Factors Engineering (HFE)** – featured in **Alert!**, Issue No.11 - with regard to manning, personnel and training (HR); and habitability, maintainability, workability, controllability, manoeuvrability, survivability, occupational health and safety and system safety (HFE).

The theme of Issue No. 31 of **Alert!** is: *Human Resources – fitting the correct peg into the correct hole*. A case study described on Page 1 demonstrates how accidents can occur if you don't have the right number nor the correct mix of people with the necessary competencies and familiarity with the ship to be able to do the job.



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