Maritime Insight articles are presented by the *CHIRP* Maritime Advisory Board to further promulgate issues that have been raised in our other publications. *CHIRP* hopes that you find the material interesting and we welcome Feedback on the content and receiving any additional subjects to cover.

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Achieving cost savings from learning opportunities

Introduction

Do your people, for any reason, 'roll the dice' in your organisation and take chances, cut corners, and/or break procedures to get a task completed? In *CHIRP*'s experience, if you ask seafarers today whether they sometimes do this, the answer will be "Yes!" In the analogy of a pair of dice, rolling 'two sixes' is experiencing the accident, damage to equipment, injury, loss, etc. and the more often the dice are rolled, the higher the chances are of rolling a double six! But why are the dice rolled so frequently? We shall look at this.

This Insight article explores why it is so important to the business health of any organization to gather the enormous harvest of 'learning opportunities' or 'learning events' (as we much prefer to call them) commonly called 'near misses' and 'unsafe acts & omissions' (the occasions the dice are rolled). Such events are commonplace and therefore it makes good business sense to calculate their financial costs based on the worst probable outcomes, especially the high potential learning events (a 6 and a 5 on the dice), where, but for luck, the uninsured costs to an organization would have been substantial.

The article also looks at how the industry can capture these important 'learning opportunities', through the use of a workforce-owned process that encourages the personal safety involvement of all. The key to success is achieving an 87% learning event close-out rate **at source**, with this being the measure and control that demonstrates effectiveness in improving **all** aspects of the business.

All seafarers have experienced a "Phew, that was close!" moment – but unless these close calls or 'learning events' are reported to the company, then whilst individually we might have taught ourselves a lesson never to be forgotten, the organisation (and sometimes the entire industry) has learnt nothing. Consequently, the risk of a similar event occurring remains, with perhaps the consequences next time being very expensive indeed, in both financial and human terms. When one only learns from actual accidents, all the potential lessons from near misses are lost.

So, what exactly is a near miss (or learning event)?

IMO defines a near miss in their Circular MSC-MEPC.7 Circ.7: as follows:

"A sequence of events and/or conditions that could have resulted in loss. This loss was prevented only by a fortuitous break in the chain of events and/or conditions. The potential loss could be human injury, environmental damage, or negative business impact (For example, repair or replacement costs, scheduling delays, contract violations, loss of reputation).

CHIRP examples of 'learning events'

Mooring:

Preparing to take a tug's line – signaller is in the correct position, and correctly supervising. Several AB's are taking the line, setting it up on the winch drum, and preparing the stopper. When taking weight on the line, the tug moves forward unexpectedly. Crewmembers are not in a safe area when the line parts, but thankfully nobody is hurt.

Falls from height:

- Spanner falls from an engineer's pocket and drops through several decks of the engine room narrowly missing an oiler on the bottom plates.
- Rusty steps give way on the lower part of a mast ladder, which was being climbed for maintenance - luckily the AB was only a couple of steps up and he suffered no injury.
- Working aloft and somebody starts the radar scanner narrowly missing the person working – no lock out, no communication, no risk assessment, no permit to work, no standby safety man.

Near Collision:
Stand-on vessel had slow manoeuvring characteristics. The give-way vessel was an offshore service vessel with twelve industrial passengers on board and was passing close ahead. The OOW on the stand-on vessel, decides to increase the ahead passing distance by altering a few degrees to port, just as the give-way vessel decides to go hard to starboard to cross astern of the stand-on vessel. The stand-on vessel's OOW goes hard to starboard to correct his error. A near miss and a very shaken OOW.

Many more examples could be quoted from other on-board tasks - enclosed space entry, failures to electrically isolate and lock out numerous systems, using non-compliant pilot ladders, etc.

All of these examples are 'Learning Events' stemming from the 'dice being rolled' and all worst probable outcomes (6 & 6 on the dice), would have had a significant, or even catastrophic financial, as well as human, cost. *CHIRP* has received hundreds of similar incidents, which themselves are but the tip of the iceberg. Individuals may have learnt lessons but in the cases where the company is not informed, then where is the learning and what prevents it happening again with a very different outcome? Indeed, where is the certainty that even if an event is reported, that the corrective actions, which fit within a Just Culture, are carried out?

A Just culture may be defined as "*A concept related to systems thinking which emphasizes that mistakes are generally a product of faulty organizational cultures, rather than solely brought about by the person or persons directly involved. In a just culture, after an incident, the question asked is, "What went wrong?" rather than "Who caused the problem?" A just culture is the opposite of a blame culture.*"

Rolling the dice

The above IMO official definition, together with the *CHIRP* examples, while useful, do not intuitively demonstrate the critical importance to every business of discovering how often we are 'rolling the dice'. The question is, exactly how many '6 & 5's' are being rolled? In other words, what high potential learning events are we experiencing and how close are we to having a '6 & 6' event and suffering the associated uninsured costs? Indeed, even insured costs are paid for through higher insurance premiums.

CHIRP's experience is that while seafarers will confidentially admit to frequently 'rolling the dice' for any number of reasons, it is common for them to also admit they do not report these incidents. On the other hand, it is equally common for boards of directors, from many industries, not just shipping, to be labouring under the illusion that the Key Performance Indicator (KPI) covering their 'Learning Event' reporting quota is being met, with each incident being acted upon. Sadly, this rarely proves to be the case when scrutinised closely, which the author has done in many organisations from a variety of industries. This fact is critically important because a real, robust and healthy reporting system is absolutely essential to both business and safety success, with safety and efficiency being two sides of the same coin, as we will demonstrate later in this article. The fuel that powers healthy reporting is a mature safety culture that is at least Level Four (Proactive) and preferably Level Five

When one only learns from actual accidents, all the potential lessons from near misses are lost

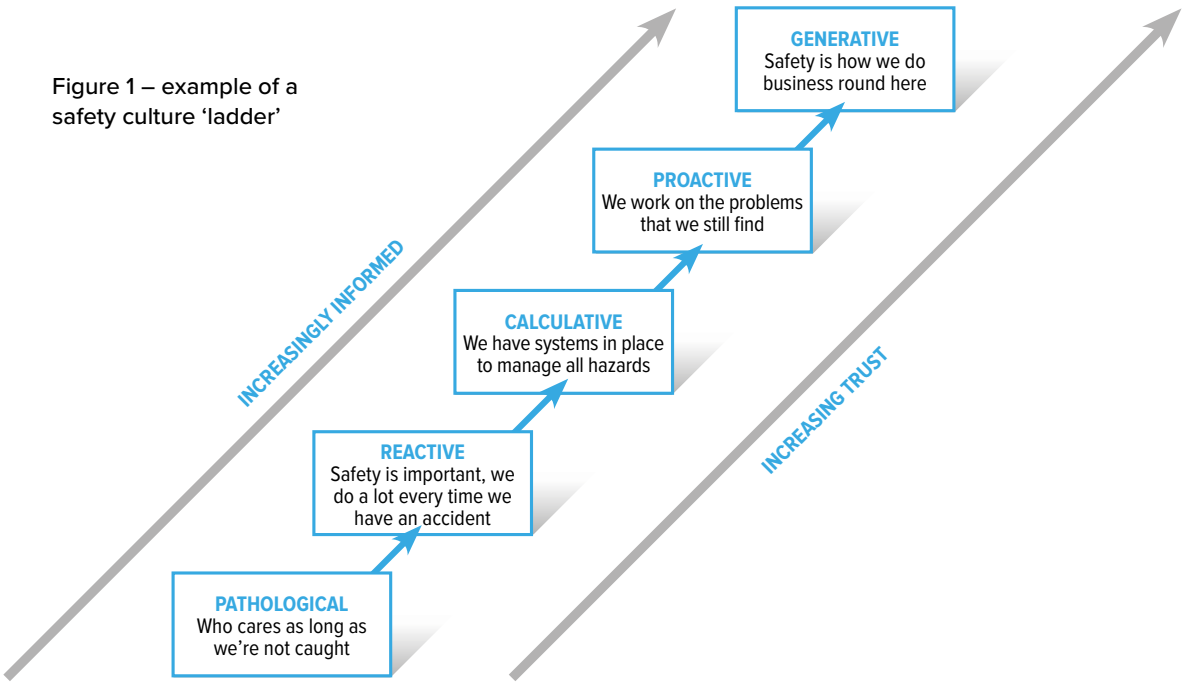


Figure 1 – example of a safety culture 'ladder'

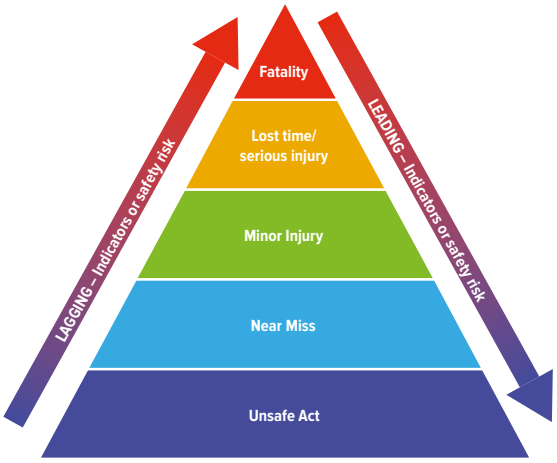
(Generative) – see Figure 1. It is simply wishful thinking to believe that reporting will happen if the culture is not at these levels. Furthermore, it is only at these levels of workforce engagement and mutual trust that a 'Just Culture' can be created and maintained.

In the next section we will explore why robust, efficient and thorough incident reporting matters so much to the industry and the companies operating within it.

So, why does this matter?

Figure 2 below demonstrates why it is critical to uncover the numerous learning opportunities (numbers of times the dice are rolled) at the bottom of the triangle – unsafe acts & omissions / unsafe conditions, 'near misses' ('learning events'). All of these present the organisation and/or the industry with learning opportunities and are the leading indicators of safety risk. However, uncovering the bottom of the triangle in the first place, so the lessons can be learned, depends entirely on the level of open and honest reporting, which in turn is determined by the safety culture.

Figure 2 – The safety triangle



However, even when incidents **are** reported, Figure 3 shows that the tendency in risk reduction measures is to choose the least effective corrective actions. These are often limited to either PPE (put your hard hat on!) or by writing another procedure! These are the least effective controls when attempting to reduce the risks associated with any given hazard, and limiting corrective actions in this way is likely to lead to the dice continuing to be rolled!

So, the company culture is critical to successful risk control and that in turn plays a large part in business success. The next section will deal with how we get there.

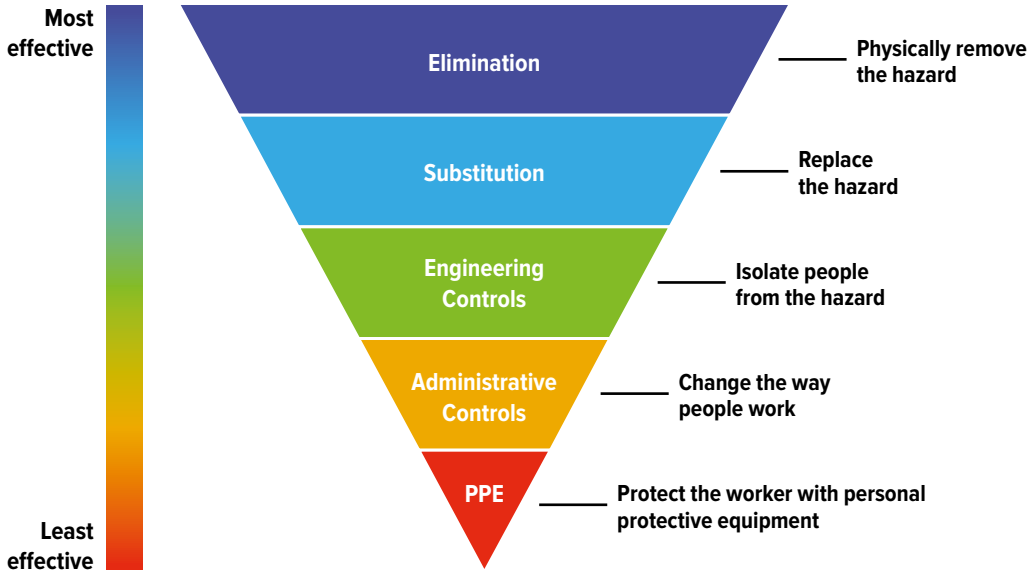
OK, so how do we achieve a Generative safety culture?

Put simply, we have to create a 'one team' environment in the steady pursuit of operational excellence. In this culture people are:

- properly trained in both technical and non-technical skills, including leadership and management (especially at management and supervisory levels ashore and on board). Training must then be validated through coaching and mentoring.
- trusted, empowered, treated like adults and listened to.
- asked to identify their challenges within a 'safe' environment, to offer solutions to those challenges and then be allowed to implement the changes **for themselves**, with the help and support of their managers. When asked, people will always tend to simplify, improve and make operations safer, and also more efficient. This works because people are committed to their own ideas and believe in their own solutions.
- involved with the derivation of all procedures so they become workforce-owned. When this is the case, procedures will tend to be simple, relevant, brief, ship-specific, useful and used!

It is the absence of a Generative safety culture, or

Figure 3 – Hierarchy of risk controls



New leaders, at all levels from the top down, can collapse this hard-earned trust almost overnight, by coming in to 'try to make his or her mark', often in an overbearing manner

at least a Proactive one, that causes people to 'roll the dice' so often in the first place. This is because, in a poor safety culture, the people perceive that using a non-approved method is often the only way to get the job done in a timely manner.

When a genuine one-team approach is achieved it leads to:

- mutual trust – the fuel for achieving a Generative Culture.
- effective communication at all levels. People always need to know the reason 'why'.
- genuine empowerment of employees.
- regular problem identification with suggested solutions submitted at all levels.
- a robust feedback system.
- improved job satisfaction. There is a direct correlation between high job satisfaction and excellent safety performance.
- reduced turnover of personnel – people don't leave safe, well-run companies. This reduces re-training costs and prevents crucial company-specific knowledge being lost.
- reduced claims for sick leave.
- increased productivity and efficiency.
- Safety, Health, Quality, Environmental and Finance being managed as one.
- human performance supported and monitored to ensure consistently high levels.

All of the above, once achieved, lead to the dice not being thrown so frequently. Why? Because gone are the reasons for doing so, namely, to try to get the job done despite the hurdles people perceive have been placed in front of them to stop that happening. Once they own their own simplified, ship specific and approved procedures they will follow them.

Health Warning! New leaders, at all levels from the top down, can collapse this hard-earned trust almost overnight, by coming in to 'try to make his or her mark', often in an overbearing manner. This can be catastrophic to the company culture. So please beware, since once the trust is lost it will take many years to regain! This explains why high-quality leadership & management training, incorporating non-technical skills, is so critically important.

Now we know how essential it is to the business to create this culture and gather in the harvest of valuable 'learning opportunities' to fuel continuous improvement. In the next section we will demonstrate an objective method of costing 'learning events'. They are costed based upon their worst probable outcome (6 & 6 on the dice), which is an objective phrase used in risk assessment, so that the subsequent corrective actions are selected from as high up the Hierarchy of Risk Controls as reasonably practicable, as required by law. The cost benefits of so doing will now become demonstrable and transparent.

Achieving cost savings – an example

From a legal and moral perspective, it clearly matters to companies that avoiding injuries to personnel and damages to equipment is important. This can be seen in company policy statements and safety management systems. Companies learn the hard way from accidents, which unfortunately are invariably expensive exercises. However, very few go that one step further to look closely at near misses / learning events and thus close the gaps that cause the accidents or incidents in the first place.

Therefore, we have set out the business imperatives below with two fictitious examples, the first of which is calculated to show the costs associated with rolling a double six!

Commercial software is available which is designed to calculate **initial estimated, actual** and **worst probable** costs associated with incidents and learning events. It also assembles the associated workforce owned corrective actions. The programme can be developed to feed into all other major company operating systems and software, for example Legal, Insurance, Finance, Human Resources, Training, Maintenance Management and Operations & Logistics, etc. The calculated financial costs, with control measures, provides the organisation with the tool they require to demonstrate the cost benefits of introducing the measures that reduce the chances of a repeat incident to as low as reasonably practicable (ALARP).

Deck department – example:

Scenario:

The following example is one to which many ship's masters and officers will relate and is certainly worthy of a cost calculation:

- reduced visibility for several hours on passage and on the approach to the pilot station. A container ship master is on the bridge throughout, snatching occasional naps on the bridge settee when safe to do so.
- pilot embarked for a long inward river pilotage. Fog experienced during the entire pilotage, with subsequent delays caused by the weather.
- once vessel berthed, master has spent in excess of twelve continuous hours on the bridge. He then conducts port formalities, etc. for a further two hours.
- this is the vessel's home port, and the master is further engaged in meetings with company representatives.
- master manages to snatch two hours of fitful rest.
- master required to attend the outcome of a Port State Control inspection, accompanied by the ship's superintendent.
- master attends to administration, catching up on paperwork and emails that he has not been able to complete due to the time spent away from his desk - all of which are hugely important from each sender's point of view and each of which requires an instant response.
- during the 24-hour port stay, the fog slowly gives way to windy and squally weather.
- the master, having had very little rest is now feeling the effects of sleep deprivation, with the associated increased levels of stress and anxiety.
- despite the promise of a lengthy passage to the next port, the master feels the commercial pressure to depart on time in order to meet the E.T.A. and therefore avoid any delays that could incur penalties.
- two tugs ordered for departure, one of which is dispatched to another vessel experiencing difficulty in staying alongside due to the increase in the wind speed. The master makes a decision to depart the berth using only one tug.
- after leaving the berth, the vessel drops off the wind, narrowly avoiding contact with another vessel at an adjacent berth. Tug master is having difficulty manoeuvring in the prevailing conditions. Ship did not make contact with the other vessel, but it was a very close call. (6 x 5 on the dice – phew!).
- outbound passage proceeded thereafter without incident.

Cost calculation

The cost calculation below is based on the example above – a high potential 'learning event' (6 x 5 on the dice). Costs illustrated are based on the risk assessment category 'worst probable outcome' (6 x 6 on the dice) which didn't in fact happen, **purely** because of chance! Costs are also based upon the UK Health and Safety Executive cost calculator.

In compiling information to assess costs, the following major categories of loss events must be kept in mind: **People; Property; Environment; Production/business opportunity**. Information is required for calculating the costs of:

- actual loss events (6 x 6 on the dice).
- high potential 'learning events' by worst probable outcome (6 x 5 on the dice).
- selected risk assessments with a worst probable outcome.

Please note that general advice covering the costs associated with all types of incidents is included in the 'Costs to consider' sections below to help the reader to cost other incidents. Please also note that the cost categories are not comprehensive and must be fine-tuned to industry and company requirements. Therefore, the costs in this worked example are estimates and are shown purely for illustration.

Calculation form – initial data:

This example template can be tailored to existing company incident report forms:

Date of loss event	
Time of loss event	
Place of loss event	
Name of person(s) involved	
Name of person completing form	
Position of person completing form	
Description of the event	

In compiling information to assess costs, the following major categories of loss events must be kept in mind: People; Property; Environment; Production/business opportunity

Dealing with the incident (immediate action): Time spent in decimal hours: (For example. 3hrs 30min = 3.5) Rate in USD (For example 10)				
Category	**Man-Hours**	**Rate in USD**	**Cost in USD**	**Notes**
1. First-Aid treatment	N/A	N/A	N/A	
2 Taking Injured person(s) to hospital/home	N/A	N/A	N/A	
3. Securing the site – making the area (of collision) watertight and safe	100	50	5,000	
4. Putting out fires	N/A	N/A	N/A	
5. Immediate crew downtime (For example. work activity stopped)	N/A	N/A	N/A	
6. Additional wages for crew overtime	64	25	1,600	
7. Human Resources costs: PTSD counselling, coaching and policy review	200	50	10,000	
8. Initial costs accrued by the port (not included in next section) and payable by company	200	100	20,000	
9. Dealing with all matters pertaining to the other vessel in the collision and their insurers	200	100	20,000	
TOTAL	**764**		**56,600**	

Costs to consider:

- cost of first aid equipment used. Salary costs of first aider whilst responding to incident. Salary costs of person contacting/liaising with emergency services.
- cost of taxi fare or public transport. Running costs/fuel of work's vehicle(s) if used. Salary cost of person taking injured person to hospital. Salary cost of person remaining with injured person at hospital.
- port operations costs including tugs, linesmen, pilots and oil dispersant vessels & equipment.
- cost of measures taken to make area immediately safe, for example, making the ship watertight; putting the ship safely back on the berth; making any equipment in way of the collision safe; stopping machinery; provision of scaffolding; erecting barriers; costs of evacuating the area; emergency rescue; costs of any materials used; for example. sand or absorbent material to contain spillage, neutralising agents for chemical spills, etc.
- financial costs of people involved (if met by company); cost of firefighting equipment used; for example. fire extinguishers, fire blankets; refreshments for emergency personnel if on site for extended period.
- salary costs of all people temporarily not working, if not recorded elsewhere.
- consider the four loss event categories above.

Investigation of incident:				
Category	**Man-Hours**	**Rate in USD**	**Cost in USD**	**Notes**
1. Fleet Operations time to report and investigate incident	500	50	25,000	
2. Meetings to discuss incident	100	50	5,000	
3. Senior manager's actual time spent with authorities, hence not being used to run the company	300	100	30,000	
4. Consultant's fees to assist company in investigation	N/A	N/A	N/A	
5. Internal incident investigation costs – reliefs, backfills, overtime, HR involvement, etc.	300	50	15,000	
TOTAL	**1200**		**75,000**	

Costs to consider:

- time to complete paperwork, for example accident book, company report forms, incident report form for your enforcing authority; time taken to report incident; investigation time, including interviewing injured person, witnesses, photographing site, taking measurements, etc.; time spent writing investigation report; management time, including reviewing reports.
- Health and Safety Committee meetings; management meetings; staff meetings; Meetings with trade unions and safety representatives; meeting with P&I Club and Hull & Machinery insurance company personnel.
- salary costs of staff involved when inspector visits; salary costs of people preparing information for inspector.
- costs of finding and engaging an independent consultant if required, consultant's fees for services.
- consider the four loss event categories above.
- note that in order to complete this section quickly, the hourly rates for all personnel are required, including contractors involved on the vessel, in the port and in the office.

Getting back to business:				
Category	**Man-Hours**	**Rate in USD**	**Cost in USD**	**Notes**
1. Assessing/rescheduling work activities	50	100	5,000	
2. Recovering work/production (including staff costs)	50	100	5,000	
3. Cleaning up site and disposal of waste, equipment, products, etc.	200	150	30,000	
4. Bringing work up to standard (for example, product reworking time/costs)	N/A	N/A	N/A	
5. Repairing any damage/faults	500	200	100,000	
6. Hiring or purchasing tools, equipment, plant, services, etc.	200	150	30,000	
TOTAL	**1000**		**170,000**	

Costs to consider:

- managers and/or supervisors time to reschedule, reprioritise and reallocate work following incident.
- costs if staff redeployed; their original tasks may not be done. Costs of additional lighting, heating, running machinery, etc. to meet original targets.
- staff costs to clear up site; costs of cleaning contractors used; cost of material, dispersants, or equipment used to clean up; cost of disposing of waste (less any scrap value); wasted packaging material. Any write off costs for products, which cannot be used, i.e. the value of work in progress.
- product reworking time/costs; cost of extra parts and material to bring up to acceptable standard.
- cost of replacement parts; labour costs for repairs.
- cost of replacement machinery, etc. if it cannot be repaired; provision of temporary accommodation, for example, office rental, portacabins. Note: Here we need the lease and/or capital cost of replacement of all regularly used plant, equipment, and vehicles.
- consider the four loss event categories above.

Business costs:				
Category	**Man-Hours**	**Rate in USD**	**Cost in USD**	**Notes**
1. Uninsured vessel downtime (10 days off hire)	10 (days)	15000 (per day)	150,000	
2. Cost of disruption to liner container service (both reputational and actual)			500,000	
3. Salary costs of injured person	N/A	N/A	N/A	
4. Salary costs of replacement workers	N/A	N/A	N/A	
5. Lost worktime (people waiting to resume work, delays, reduced productivity, effect's on people's productivity, etc.)	200	30	6,000	
6. Overtime costs – impact on sailing				Included elsewhere
7. Recruitment costs for new staff	N/A	N/A	N/A	
8. Contract penalties			100,000	
9. Cancelled and/or lost orders			50,000	
10. Legal costs	300	450	135,000	
11. Increased insurance premiums directly caused by loss event			85,000	
12. Fines (pollution, etc)			50,000	
13. Crewing Department extra costs	2.0	22	44	
14. Human Resources extra costs	36.0	50	1,800	
15. Safety Department	36.0	50	1,800	
16. Retraining costs	160	50	8,000	
17. Costs due to company retraining and re-drafting of relevant Standard Operating Procedures, etc.	30	50	1,500	
TOTAL	**764**		**1,087,344**	

Costs to consider:

- the costs to a company when employees are off sick. You should adjust the figure to take into account any statutory sick pay scheme. You should also take into account non-wage costs, for example, pensions, administration costs, etc.
- consider the situation carefully. If the cost of agency labour is cheaper and they achieve the same output, there may in fact be a financial gain. If agency labour is more expensive, you should record the difference in cost to meet the same production between internal labour and agency staff.
- only include salary costs if not included elsewhere on the form (i.e. people waiting to resume work). Costs of reduced productivity, for example, delayed sailing, delays in dry dock; value of lost/ delayed sailing; costs of contractor's staff standing idle, if used; costs of waiting on weather, waiting for deliveries, waiting for other trades.
- include additional non-wage costs. For example, in UK - National Insurance Contributions, etc.
- agency fees if temporary workers used; advertising costs; salary costs during interviewing; administration costs of recruitment exercise; training costs for new staff.
- any penalty clauses invoked by customers due to late delivery, reduced quality, etc.
- consider the value of both current and future work.
- include salary costs of people preparing information for lawyers, attending meetings, answering letters, etc. if not included elsewhere.
- include salary costs of people preparing information associated with all aspects of this incident.
- ensure the time spent in administration is included.
- consider the four loss event categories above.

Action to safeguard future business:				
Category	**Man-Hours**	**Rate in USD**	**Cost in USD**	**Notes**
1. Reassuring customers	200	50	10,000	
2. Providing alternative sources of services for customers	100	50	5,000	
3. Other	N/A	N/A	N/A	
TOTAL	**300**		**15,000**	
GRAND TOTAL	**4028**		**1,403,944**	

Costs to consider:

- time and cost of contacting key customers to reassure them that existing services will be fulfilled, and that future services will not be affected. Publicity and marketing costs to re-establish reputation.
- include salary costs of people administering this provision of alternative services.

NOTE: The reader should bear in mind that the total uninsured cost is lost directly from the company's bottom line (profits). So, if a company is making 10 cents on the dollar profit (10%) which most do not; then the business would have to turn over ten times that bottom-line number to pay for the incident! In this case, if the costs had been carefully calculated, then the estimated total of USD 1,403,944 would mean the business would have to gross USD 14,039,440 in turnover to make up the uninsured losses.

Engineer department - example:

The following example is one to which many chief engineers, as well as masters and officers will relate and is certainly worthy of a cost calculation:

- a relief chief engineer flies out to join a ship – long twelve-hour flight in tourist class with no proper rest.
- C/E is booked to stay overnight in a hotel, but the agent informs him that there is a problem on board, and he is required to join on arrival.
- C/E boards and finds that the engineers are working on two main engine units. One is for class, the other as a result of a defect found on the inbound passage.
- the off-going C/E conducts a hasty handover, and proceeds on leave.
- there are insufficient spares on board, so priorities are decided upon inspection.
- soon after sailing, having just cleared a narrow buoyed channel and proceeding at slow speed, the main engine shuts down.
- fortunately, at the time of the shutdown, the vessel was adjacent to an anchorage and the master, using steerage way only, was able to clear the channel and successfully anchor the ship.
- on close inspection the cause of the breakdown was water ingress to the sump caused by a reused cylinder liner O-ring.
- there followed a twelve-hour delay before the fault was rectified and the engine could be successfully restarted.
- the incoming C/E was not involved in any of the initial maintenance planning and was completely exhausted at the time of the shutdown.
- the vessel did not go aground or suffer a collision. Again, it was a close call. (6 x 5 on the dice – phew!)

As an exercise and using the categories above, you may wish to calculate the approximate costs of the uninsured costs associated with this incident if it had been a '6 x 6'! Even the '6 x 5' costs are considerable!

Conclusion

This Insight article set out to demonstrate the **business case** for:

- developing a Generative safety and business culture (you can only have one company culture!)
- creating a 'Just' incident reporting culture that develops from the trust created within a Generative company safety culture. Remember that trust is difficult to establish and can be lost in a heartbeat!
- establishing real workforce involvement and ownership that stems from the senior leadership team, ship's superintendents, masters and C/E's all being trained and becoming trusted company managers, who in turn are effective team leaders who efficiently harness the untapped 'horsepower' residing within the workforce. They are not autocrats, nor are they laissez faire leaders, both of which are frequent default positions of untrained managers!
- efficient and open incident reporting, whereby people are happy to admit to their errors, mistakes and violations because they will be dealt with appropriately within a Just Culture. Remember! Unless your people have criminal intent – and that is very rare - they will not have meant to achieve the undesirable outcome. Violations are deliberate, but seldom malevolent, breaches of safety rules.
- costing all loss events, especially high potential ones, so as to identify corrective actions in a cost-effective manner, to avoid future losses and to use this tool as the primary business improvement method.

The incident calculated in this Insight article did not actually happen but is typical of much anecdotal evidence compiled by the author during training courses conducted over the past twenty-five years. These stories have been confirmed as being frighteningly realistic by various accident investigations and reports of sometimes tragic events, which have been every bit as costly to the companies concerned as the calculated example above.

Much productive learning can be achieved from the myriad of 'rolling the dice' moments, provided they are reported! And they simply will not even begin to be reported unless and until the company has at least declared its sincere intentions to pursue a Generative safety culture and then, in close cooperation with the workforce, followed that statement of intent with definitive actions.

When boards of directors recognise the need to embrace this change, so that they are able to transparently see the cost savings to be made, albeit invisible ones, by encouraging and then analysing these reports, especially the high potential ones (6&5's), then they are on their way to successfully pursuing safety and business excellence in all that they do. These reports have the capacity to literally provide the 'fuel' that helps to transform and then maintain the company safety culture since, when the 'learning events' are caught in good time, they prevent the chance of them becoming actual losses, because the cost beneficial corrective actions are put in place in a timely way and the dice are no longer being rolled!

This paper has been prepared for *CHIRP* Maritime by:
Captain John Wright, of WrightWay Training Limited, and member of the *CHIRP* Maritime Advisory Board.

> "Change is the Law of Life. There is a need to focus on the future and you will miss that if focussing only on the past and present"
>
> **John Fitzgerald Kennedy, 35th president of the United States**

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