

## **WHEN IS THERE TOO MUCH SAFETY?**

A Smart Look at Stupidity

By

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In my presentation today I will explore the boundaries of safety risk primarily human behaviour in unsafe situations. Perhaps it could be called a smart look at stupidity. I will seek to explore how low, is as low as reasonably practical, and how high, is as high as regulations allow, should such regulations exist.

Now shut your eyes for a moment. Imagine you are working on top of a skyscraper without any constraint. Now walk to the edge. Now reach up and take your blindfold off. How much safety is enough? When is there too much safety? Safety is clearly a mental perception. Is it possible to fall? Is it probable you will fall? If you knew that a car crash was probable then you would not drive to work. Would you? The reality is that you live your life on probabilities and not possibilities. You risk manage through life with possibilities. Safety is not the only factor.

If you never go to work; you cannot get hurt. The theoretical maximum safety policy is therefore to not go to work. The theoretical minimum safety policy, perhaps not unlike the Chinese coal mining industry, is to have lots of people so you can withstand the casualties. Clearly neither approach is at all acceptable in this day and age. In this regard it is interesting to read the very recent findings of the investigation into the Blackhawk helicopter crash off the deck of the navy ship Kanimbla nearby Fiji. The investigators determined that this sort of advanced pilot training was no longer acceptable in peacetime because of the possibility of more people being killed.

Albert Einstein once said, only two things are infinite, the universe and human stupidity, and he added that he was not sure about the future of the universe. Surely human stupidity is also an infinite no-brainer. What then I ask are the boundaries of acceptable risk when it comes to safety? The Russians say no risk, no champagne, and the best racing car drivers practice in the rain. So what is good safety practice versus best safety practice and can you exploit the gap between the two? And is use of Emergency Management, effectively last resort Safety Management, an acceptable way to take safety risk or push the boundaries?

Indeed how do you take risk, especially those events where you may be dealing with often low probability, but high consequence safety risks? I have often been very scared by the prospect of death at high altitude in the Himalayas and other great mountains of the world and it from this frame of mind that I put to you a technical explanation of what it is like to touch the void.

Risk is essentially a course of action or inaction, generally taken under conditions of uncertainty, which exposes a high altitude climber to their possible loss in order to reach the summit.

I recall sitting at the 8,000 metres on the South Col of Everest, by myself and thinking, that if I do not stand up now and start walking, then I was a dead man. This is operating at the edge of the risk envelope. Is it okay to climb through the death zone above 8,000 metres? Is that calculated risk or foolish? Do you think I am normal or an idiot

Uncertainty is a state of mind, based on lack of knowledge or experience and characterized by doubt about what will or will not happen, if you keep climbing, particularly when you are going to extremes. I recall the some 13 times that I climbed through the icefall on the lower approaches to Everest, literally a flowing river of solid ice, often thinking that was this my last day on the planet. On the prospect to going back up a collapsing icefall for the fourteenth time after 100 days on the mountain, I had no desire at all.

Risk-taking tendencies, often expressed as comfort and familiarity versus excitement and adventure maybe categorized in a more technical sense as either risk-avoiding, risk neutral or risk-seeking. It is very much experienced based; to some climbing Everest is a walk in the park, to others it is simply un-comprehensible.

There are of course some very common-sense techniques for overcoming barriers to constructive risk-taking, and to improving the reward to risk ratio. It is not all doom and gloom. You can succeed. You can summit and return safely. You can make profit in a safe business.

For example you can start by questioning a fellow climber's values to decide if they think that the risk is acceptable to them.

This questioning requires a subjective assessment to balance the most desired against the least desired consequences of taking the risk. You need to decide if the risks are critical, important or unimportant to you. Is it worth risking a lot for just a little, or is it worth risking more than you can afford to lose through cerebral edema or worse? What are the maximum possible loss and the probable maximum loss? Anything from frostbite to your life. What are the probabilities of injury or death? Endorsed consequence criteria are now common place in the workplace for single injury, incapacitating injuries, multiple injuries and fatalities.

This consequence approach requires the successful conditions for climbing Everest to be continually assessed against the mood of the mountain. There are old climbers and there are bold climbers but there are not too many that are old and bold.

You may also need to reframe the entire situation to reduce external and self-generated pressure and allow a new interpretation of the same facts. This is the classic STOP or TAKE 5 in safety terms, in order to take a helicopter view of the overall situation.

You may need to release anger and resentment to restore a cool head. This is important when working in high performing teams where emotions often run high, clouding otherwise rational sea-level thoughts. Hairy chested miners or drillers with big buckles sometimes fall into this category.

You may also need to muster outside support as a resource for reducing excessive pressure. However this course of action is not really an option in the remote Himalayas other than in interpreting weather forecasts.

You may need to better tap available information and seek dissident views by not expressing your preference too quickly, encouraging critical feedback and simply communicating with fellow climbers. This consultative approach sounds good but it can often be difficult in an elite group where there is no place for girlie men.

You can isolate and buffer risk through layered approaches to safety, by limiting access to the mountain, or by maintaining a protective cushion against uncertain aspects. These avoidance or procedural techniques are perhaps much more familiar to you in the sea level workplace.

You can share and limit risk by distributing or transferring the burden through joint commitments, psychological bonds or incentives for a safe return of climbers. Again, these behavioral approaches to safety will also be already familiar to you. The reality is that most climbers are highly individualistic and such team approaches have little truck at high altitude. By way of comparison one mine site in Indonesia that we support has made it a sackable offence to remove your seat belt before the vehicle ignition is switched off. Imagine if Qantas did that.

You can prevent not intolerable risk from slipping into an unacceptable state through reconnaissance and 'actions on' which stop the irrational escalation of commitment by climbers. This approach is akin to assessment of near misses and the forethought demanded by job safety analysis and the like. Nothing new there in the workplace.

By now you are probably saying to yourself that this is all well and good at 8,000 metres where there is 2/3 less oxygen, but what is acceptable societal behavior at sea level in the work place? At sea level, the identification of safety risk is more a function of hazard and outrage. The engineers amongst us say  $R = \text{Function}(h,0)$

According to the Risk Engineering Society, safety and risk management is moving away from hazard identification and towards the common law approach of demonstrating due diligence. They say that the safety case which is mandatory in the O&G sector is becoming not only a technical tool for achieving safety goals but a method of managing liability. They put that the safety case has to become a legal argument as to why an organisation believes there are no outstanding precautions that ought to be implemented. They say best practice is something an organisation aspires to and good practice is something it must legally achieve.

How much mitigation of hazard and outrage is enough to achieve good practice? What do you find acceptable? When is something unsafe? How much mitigation is enough? The most profound question I have ever heard is if you had no fear, what would you do? And who would your friends be? What do you think? Do you think safety is a profit centre or a cost centre? Who here gets paid more, if you are more safe? Does anyone have a view on that? Why do you want safety? Please have a 2 minute exchange of views with your neighbour on your RHS? Now turn to your neighbor on your LHS. Please debate another topic for another minute. The topic is *If you are too safe, can you actually do your job?* Okay lets have an open forum, as to whether membership of Emergency Response or First Responder teams should be voluntary or mandatory as a condition of employment in the workplace?

It is interesting to look at the business of safety from a leadership perspective. Generally employees who do not think it is safe, will not go on with the task at hand. Therefore, there needs to be basic safety rules in place to achieve their cooperation. Christopher Columbus said to his men as they sailed towards an unknown land, that they would all get lots of gold if they kept searching for America. But then two of his three ships still turned back. Many other of the ship's company from his single crew that eventually

found America, died in America. But some of the people who survived his trip to the new found land became wealthy men.

From this perspective, safety is based upon outcomes, and not on procedures. In survival situations, the whole strategy of managing risk changes. In these situations you do really risky things to get out of it. But because business is generally not in a survival situation, it can afford to have a layered safety approach, and as comprehensive as necessary, up to the point of even stopping business or even inhibiting profit.

This is the risk fulcrum of safety versus profit. Too much safety, and not enough profit. Too much profit, and not enough safety. If you have money, people sometimes forgo safety. Remember the Russians; no risk; no champagne. It is the same Christopher Columbus paradigm, if you want to see more, you have to go further. Business strives for more profit for its own safety of continuity. People strive for income which in turn gives them security of continuity.

Did you know that Columbus' crew actually revolted twice and once put a sword to his throat to get him to turn back. Luckily for him he took advantage of an atmospheric ionization phenomenon known as St Elmos fire which lit up the sails and rigging of the ship. This sheer coincidence allowed him to sail on for one more week. Then the seabird came.

Let me now turn towards what happens when the seabird does not come and safety turns to custard. Consideration of how much do you put into last resort safety management? When the Titanic sank on its maiden voyage, almost 1500 lives were lost. The unsinkable ship had everything from stem to stern, including emergency plans, but they were never tested, nor were the lifeboats. You will all have seen the movie. Of course the world was rightfully stunned by this massive disaster and it led to new regulations, still known to this day as *Safety of Life at Sea* or SOLAS so that ships would test their emergency plans to a far greater extent and have sufficient lifeboats. Are we on the front of the wave with safety or still in front of an ice berg today?

With the benefit of hindsight, who agrees with the British Court of Inquiry's finding in 1912 that the loss of the Titanic was due to collision with an iceberg, brought about by the excessive speed at which the ship was being navigated?

Perhaps few of us have read the British findings; more likely our opinion is based upon the movie. Those fifty words were in fact the extent of the report. Many feel that the report was far too kind to Captain Smith as it found while his acceleration into a known ice field had been a mistake, it was not negligence because he had followed the established custom and practice of not slowing down for ice warnings in clear weather. We know now that the triggering event for this disaster was the steamship's management attempt to establish a new speed record on her maiden voyage.

It was the saving of three hours that cost some 1500 lives. Could that happen in Perth? You would like to think that a modern day inquiry would comment that thirty-two more lifeboats, costing just \$16,000, could have been stowed away without being noticed on the broad decks of the Titanic, and that this may have saved everyone.

Just like the Steamship management, most trouble in the corporate world still comes from these very human failings. Indeed many recent human losses have stemmed from

executive mismanagement, poor management decisions at best. There is no doubt that if you audited the Titanic today, you would find regulators demanding financial transparency and more responsible management of its organizational risks. Companies are finding that if their governance practices including safety are not adequate, they risk sharp declines in share prices, inability to raise capital, de-listing from stock exchanges and legal action.

Ask yourself this question? Is it conceivable that in future, companies will not be allowed to list on Stock Exchanges if they do not have a safety system? Maybe some of you think that there is too much emphasis on governance and that it will suffocate your organizations with bureaucratic rules? Do any of you feel like that? Inevitably the business and disaster cycle will sour again, but it has proven that good corporate behaviour combined with a healthy appetite for reasonable risks is the way to go. This combination creates real wealth for shareholders, employees and customers.

Boards typically compromise former CEO, accustomed to running their own show; less so working as part of a team. Altering board culture requires the chairman to take an active lead to break from the routine agenda. Not dissimilar to BP appointing a Safety Director to its Board after the Texas refinery disaster.

To discuss the real issues at any level of a company can be very challenging. In the case of the Titanic, once ice was located on both sides of the lane in which she was travelling, no discussion took place among the ship's officers, no conference was called to consider these warnings, no heed was given to them. The speed was not relaxed, the lookout was not increased.

It is obvious that a sound relationship between the board and the executive leadership leads to meaningful agendas, shared appropriate information, and trust in the board to challenge management even in matters of safety. Leadership is required in the real sense of the word and directors can no longer claim to be profoundly misled when human disasters take place.

We know now that the Titanic was designed as a hotel, a virtual floating palace, rather than an ocean liner. It is largely for this reason that while it had been designed to carry 48 life rafts, 28 of these were rejected by the White Star line because they made the boat deck appear too cluttered. These were Board decisions, so ask yourself this question? Is appropriate safety information being brought to your attention in your company?

It was not just the price of the lifeboats themselves that bothered the businessmen, it was the deck space they ate up. The committee of the British Board of Trade that made the regulations on life-boats was dominated by shipbuilders. They proved very able to convince themselves that boats for every person were not necessary. Thus the regulations of the time required that a ship of Titanic's size carry boats sufficient for 962 people, though she could potentially carry over 3500 passengers and crew. Boats were only seen as necessary for inter-ship transfer as it was not considered possible for such ships to sink. Can anyone think of an equivalent safety paradigm in the workplace today?

Needless to say, following the disaster, complicated formulas requiring so many cubic feet of lifeboat space per thousand tons of ship were replaced with a simpler one. Quite

simply enough seats for everyone aboard. A supposedly high cost was suddenly affordable, and the concept has never been questioned since. Of course, the White Star line never recovered from the loss of the Titanic and the settlements for cargo and loss of life. It was absorbed by Cunard lines some years later. So much for competitive advantage from trimming standards.

The lifeboat problem was exacerbated by poor procedure. Only at the last did lifeboats leave full. At first, many left partly empty because passengers were not queued up to them. One officer took the instruction *Women and Children First* so literally that he let lifeboats leave with empty spaces rather than let men or boys aboard. He was never reprimanded for his part in seeing just over 700 saved when 1200 could have been.

When the Titanic sank, the perfect ship was the ship that made the most money. Passengers demanded attention; stewards could serve them more easily if doors were cut in the watertight bulkheads. A grand staircase required a spacious opening at every level, making a watertight deck impossible. Stokers could work more efficiently if longitudinal bulkheads were omitted. A double hull ate up valuable passenger and cargo space; a double bottom would be enough.

Today safety engineers use layered approaches. Behind the first safety system lies another, and behind that, still another each with its own backups. By the era of the Titanic, ships had contented themselves with but a single layer, the all-too-short transverse bulkheads. Soon after the disaster, the sister ship Olympic, and many others with comparable designs, were being expensively retrofitted with an inner, second hull. Suddenly the impossible costs of such extravagances seemed affordable after all.

Lets have a look at the regulator who cleared the Titanic for sea and who was examined on the reasons for Titanic's only lifeboat drill having been conducted at the dock, consisting of only two boats, manned by hand-picked crew. Having conceded that he had since tightened requirements, he was asked did you think your system was satisfactory before the Titanic disaster? No, sir. Then why did you do it? Because it was the custom. Do you follow a custom because it is bad? Well, I am a civil servant sir, and custom guides us a good bit.

So ladies and gentlemen, having an emergency capability, a last-resort safety capability is all about being able to sleep at night. Ships are safe in harbor but that is not where they are meant to go. Clearly the Steamship Management focused on the wrong areas. They did not try to find what could have gone wrong. We now know that a cup of tea with Captain Smith, even with his 26 years experience would have focused on the acclaimed early arrival rather than the absence of lifeboats. Indeed the opportunity of a celebrated early arrival would perhaps have even blinded the MD to the accompanying risks. A safety committee may have yielded more honest results with those of a less vested interest in an early arrival. We would have found that processes and machinery were untested, that an iceberg warning had been received, in fact three distinct warnings, that crew on lookout did not have binoculars, and that perfect weather was ideal for speed but no good for iceberg spotting. We would have found that the supposedly water-tight compartments were not water-tight, contributing to 500 deaths. We would have found that the crew were only just acquainted with their duties in an accident and only one drill was held before the maiden trip. That would have led us to realize that there were not enough lifeboats, or that there was insufficient emergency training and signs.

If we then chained the separate risks, our safety committee would have found that an iceberg warning, plus millpond conditions, plus no binoculars, plus high speed significantly increased the probability of a collision and that the Captain may have been forced by the logic to take precautionary action. Perhaps we would not have found that the unsinkable design was flawed or that the rudder was undersized, but we would have found that most of the knowledge about risks and controls were resident within the crew and that unchecked authority was vested in the Captain who had no emergency plan. It is for this reason that the best boards these days will address safety as part of their audit and risk role.

Most of the discussion of the Titanic accident revolves around specific problems. What gets far less comment is that most of the problems all came from a larger, systemic problem: the owners and operators of steamships had for five decades taken larger and larger risks to save money. Risks to which they had methodically blinded themselves. The Titanic disaster suddenly ripped away the blindfolds and changed dozens of attitudes, practices, and standards almost literally overnight.

With the Titanic, the lesson was only learned because the cost was paid in human capital. The challenge that I wish to leave with you is to reflect upon the pros and cons of every leader that you have worked with from a safety perspective. You have to spend money to make money and so spend it on your most precious asset, human capital.

**IF I OPEN THIS LETTER WILL I BE FOUND NEGLIGENT?**

*These six questions are directly related to you*

- Q1.** How long do you go on defending a fellow manager, a business friend, when you know he is in the wrong about safety?
- Q2.** What would you do in your management position to help the company if fear was no object?
- Q3.** What are the greatest safety sins in your company?
- Q4.** What are three things that you have to work on to achieve better safety buy-in from your company?
- Q5.** Should you be concerned if you do not know the names of people who have been killed or injured in your workplace, if there have been any?
- Q6.** Should you be concerned if you do not know the Nominated Emergency Contacts of everyone on your work site, employees, visitors and contractors alike?