Speaking Up – Who me?

In aviation, Crew Resource Management (CRM) has become a mainstay in the management of human error but despite many years of CRM training problems such as not speaking up still persist and continues to pose a risk to flight safety (Bienefield & Grote, 2012). In the maritime industry Bridge Resource Management (BRM) has come to the fore to try and manage human error but still the Australian Transport Safety Board (ATSB) reports breakdowns in BRM as part of the causal chain in shipping accidents. In regards to not speaking up Perrow (1999, p. 178) notes that "it is not unusual for a deck officer to remain aghast and silent while his captain grounds the ship or collides with another" and another study by Wagenaar and Groeneweg (1987) found that in 96 out of 100 cases, the people involved should and could have prevented the accident (admittedly this study was pre-BRM) and the Canadian Transportation Safety Board (1995) found that bridge officers were reluctant to question a pilots decision which can often result in errors or accidents (Hetherington, Flin, & Mearns, 2006).

This speaking up in high-risk contexts is defined as an "upward voice directed from lower to higher status individuals within and across teams that challenges the status quo, to avert or mitigate errors" (Bienefield & Grote, 2012, p. 1). Speaking up therefore should be an essential part of any complex domain, including ships bridge teams (including pilots when they are piloting), as it an essential part of the defences that have been put in place to potentially stop the formation of error chains in highly ambiguous, stressful and complex situations (Dekker, 2001; Reason, 2000). It is unfortunate though, that this last line of defence is easily breached as people are generally reluctant to speak up (Bienefield & Grote, 2012)

Bienefield and Grote (2012) give two very salient reasons for not speaking up. The first indicates that "there is a focus on what is seen as potentially negative outcomes or risks of speaking up. The desire to avoid these negative outcomes is seen to have played an important role in the decision to remain silent. This issue is in line with what others have found for team members working in different types of organisations and in a variety of industries" (2012, p. 7) and secondly that "there can be significant group differences in crew members choice of which reasons could best explain their silence. While prior research has found that employees mostly feared that their speaking up would damage their public image, the most common reason for silence is the apparent desire to maintain a good team climate (2012, p. 7)

There are methods that can be used to ensure that speaking up becomes part of the safety mechanisms by promoting conditions that create a willingness to speak-up.

Methods that can ensure this are:

1. **Leadership:** Research shows leaders behaviour critically influences team performance. Power differences in teams intensify the interpersonal risk faced by members who wish to speak up with ideas, questions or concerns. Leaders actions thus may affect whether or not people are willing to speak up (Edmondson, 1996). The interpersonally safe route is to remain silent, not speaking up can protect the individual but harm the team (Edmondson, 2003)

Good leadership then is essential to actively reduce intimidating status barriers and help create a climate of psychological safety i.e. a climate which allows team members to feel safe in inter personal risk taking which in turn also promotes speaking up (Bienefield & Grote, 2012).

2. **Communication:** Kanki and Palmer (1993) provide the following structure for the functions that communication plays in aviation safety, especially as it applies to crew performance. This could also be applied in a maritime setting:

   1. Communication provides information
   2. Communication establishes interpersonal relationships
   3. Communication establishes predictable behaviour patterns
   4. Communication maintains attention to task and monitoring
   5. Communication is management tool (p.112)
   (Krivonos, 2007)

   Of course communication can be a much more complex process that does not always allow for such simple classification (Krivonos, 2007) but the structure does show that effective communication is essential in reducing speaking up challenges, especially when dealing with such a diversity between pilots, the captain, and the officers and crew. The team members each have their own different tasks, training and culture that can make speaking up an extremely challenging task. (Bienefield & Grote, 2012; Hetherington, et al., 2006)

   Pyne and Koester (2005) in their paper Methods and Means for Analysis of Crew Communication in the Maritime Domain analysed a number of maritime accident reports in which a failure of effective crew communication played a central role in the causal chain and they found that poor crew communication failure (human-group) played a key role in several incidents that threatened the overall safety of the vessel. The odds of miscommunication are only increased when the additional variable of crew using English as a second language and the cultural differences that may be experienced is added into the mix.

   This has been found to be so during periods of pilotage, when English is frequently used as a common language and both Pilot and Crew must be able to communicate effectively to ensure safety (Pyne & Koester, 2005). The ATSB has found this lacking in several cases such as the Dumun grounding in Gladstone (Australian Transport Safety Bureau, 2012b), the Grand Redosi incident in Port Lincoln (Australian Transport Safety Bureau, 2012a) and the Van Gogh grounding in Devonport (Australian Transport Safety Bureau, 2008). In all of these cases the pilot was left out of the loop when the crew were discussing the problem in their native language.

3. **Teamwork:** Teamwork is critical and bridge team members including the pilot must be able to coordinate action in uncertain, fast paced situations and the extent to which they are comfortable speaking up with observations, questions and concerns may critically influence team outcomes (Edmondson, 2003). This team in a fast paced action context, might have a clear goal (safely berthing a ship), the right mix of experience and skills, adequate

resources and a task that requires teamwork and "yet still suffer a devastating breakdown in coordination due to miscommunication, interpersonal conflicts or poor judgement in the heat of the moment" (Edmondson, 2003, p. 1420).

A Canadian Transportation and Safety Board (CTSB) study (1995) found that their exists an important teamwork relationship between the OOW, Master and Pilot and that if this relationship is compromised then incidents will occur. This study also found out that "the vast majority of responding masters, bridge officers and pilots believe that teamwork is as important as technical proficiency for safe navigation" (p. 3 (online)) .

Further dynamics that could affect bridge team interaction (again including the pilot) is that there should be a realisation that the bridge team "is not immune from the operation of basic social psychological processes that affect other small groups, and that the attention to how these group processes operate … can decrease errors and save lives" (Milanovich, Driskell, Stout, & Salas, 1998, pp. 155-156).

The three methods that have been written about in this article form part of what is now referred to as non-technical skills, which are the cognitive and social skills that complement technical skills. They encompass seven skills as indicated below:

- Situation awareness (attention to the work environment)
- Decision-making
- Communication
- Teamwork
- Leadership
- Managing Stress
- Coping with Fatigue

BRM training is now based on the non-technical skills and it is to be hoped that in the future that there will be a greater awareness of what good leadership, good communication, and good teamwork can bring to the table in fostering a speaking up culture. Of course speaking up may not always be appropriate. Depending on the situation there might be a right time and place for speaking up and its effectiveness is defined by how it is done (i.e. in an assertive rather than submissive or aggressive manner) (Bienefield & Grote, 2012). Training (particularly in a simulator) can give guidance in this. If this is done then it is hoped a reduction in incidents and accidents will result and make the bridge team and pilot interface a much safer and happier space to be. This would surely be a good thing.

References

Australian Transport Safety Bureau. (2008). *Independent investigation into the grounding of the Marshall Islands registered passenger ship Van Gogh at Devonport, Tasmania 23 February 2008*. Canberra, ACT.

Australian Transport Safety Bureau. (2012a). *Collision between the Liberian registered bulk carrier Grand Rodosi and the Australian fishing vessel Apollo S at Port Lincoln, South Australia 8 October 2010*. Canberra, ACT.

Australian Transport Safety Bureau. (2012b). *Independent investigation into the grounding of the Panama registered bulk carrier Dumun at Gladstone, Queensland 29 April 2011*. Canberra, ACT.

Bienefield, N., & Grote, G. (2012). Silence That May Kill - When Aircrew Members Don't Speak Up and Why. *Aviation Psychology and Applied Human Factors, 2*(1), 1-10.

Canadian Transportation Safety Board. (1995). A safety study of operational relationship between ship masters/watchkeeping officers and marine pilots.

Dekker, S. (2001). The re-invention of human error. *Human Factors and Aerospace Safety*(1), 247-266.

Edmondson, A. (1996). Learning from mistakes is easier said than done: group and organizational influences on the detection and correction of human error. *Journal of Applied Behavioural Sciences, 32*(1), 5-32.

Edmondson, A. (2003). Speaking Up in the Operating Room: How Team Leaders Promote learning in Interdisciplinary Action Teams. *Journal of Management Studies, 40*(6), 1419-1452.

Hetherington, C., Flin, R., & Mearns, K. (2006). Safety in Shipping: The Human Element. *Journal of Safety Research* (37), 401-411.

Kanki, B., & Palmer, M. (1993). Communication and crew, resource management. In E. Wiener, B. Kanki & R. Helmreich (Eds.), *Cockpit Resource Management* (pp. 99-136). San Diego, CA: Academic Press.

Krivonos, P. (2007). *Communication in Aviation Safety: lessons Learned and Lessons Required*. Paper presented at the Australian and New Zealand Societies of Air Saftey Investigators.

Milanovich, D., Driskell, J., Stout, R., & Salas, E. (1998). Status and Cockpit Dynamics: A Review and Empirical Study. *Group Dynamics: Theory, Research, and Practice, 2*(3), 155-167.

Perrow, C. (1999). *Normal Accidents: Living with High-Risk Technologies*. Princeton, New Jersey: Princeton University Press.

Pyne, R., & Koester, T. (2005). Methods and Means for Analysis of Crew Communication in the Maritime Domain. *The Archives of Transport, XVII*(3-4).

Reason, J. (2000). Human error: Models and management. *British Medical Journal*(320), 768-770.

Wagenaar, W., & Groeneweg, J. (1987). Accidents at sea: Multiple causes and impossible consequences. *International of Man-Machine Studies*(27), 587-598.