

Human Element – an MCA Perspective

The role of the Human Element (HE) has, at least notionally, received a lot of attention over the past 20 years or so. Perhaps it is time to have a dispassionate evaluation of what has been achieved. What difference has focussing on the human element made? Has the industry focussed on it effectively? Or are we having the same debate we had 20 years ago without actually making any significant progress?

Setting people up to succeed

The underpinning goal of Human Element development should be to improve safety and operational performance primarily through focussing on normal human capabilities and needs. A better understanding of human capabilities should enable us to design equipment, processes, procedures and policies that support the workforce to do their jobs as safely and effectively as possible. In other words, Human Element is about setting people up to succeed. The system should work for the people, not the other way around. But how well is this done? Can it be done better?

Too often Human Element is approached as a discrete piece of work, something that is “done”. This approach is understandable - it is how people approach many facets of life – but is ultimately doomed to failure. Rather than a discrete thing that people “do”, Human Element should be more a way of life, it’s principles and practices inextricably intermeshed into everyday activity. A more effective and open mindset may be needed.

So, as 2018 draws to a close, where is the industry in terms of the effective development of Human Element best practice and how is this helping or hindering safety and operational performance?

The picture appears mixed. There are some really good shining examples of understanding, adoption and implementation of Human Element best practice, regrettably counterbalanced by examples where understanding of the Human Element falls sadly short – as evidenced by the many accidents and incidents globally.

The Good

There is certainly an appetite and high degree of engagement in some parts of the industry. Delegates attending Human Element Advisory Group (HEAG) meetings and other industry seminars and conferences are generally highly engaged, keen to learn and striving to be proactive in developing effective Human Element best practice within their respective organisations. It would be good if new people could be attracted to these events, spreading the message wider and hopefully improving capability and performance.

Behavioural safety practices have found favour in some organisations. Whilst not a cure-all, these certainly have a role to play in improving safety and communication amongst crew members and can produce significant results if they are understood and implemented effectively by all on board, although they may be less effective in organisations with a rigid hierarchical culture where challenge is not appreciated, however well intentioned.

The role of seafarer wellbeing is increasingly understood, not only for its impact on the health of individual seafarers but also the consequent impact of poor wellbeing on safety and operational performance. Many welfare organisations are now heavily engaged in promoting wellbeing and providing support for seafarers and their families and industry guidance is being developed in some areas, for instance the National Maritime Occupational Health & Safety Committee guidance on mental health policies, smoking, alcohol, drugs and so on. This is to be welcomed, and MCA is actively involved with a number of stakeholders working in this area.

One area of significant advance is the evaluation of human factors issues in accident investigations. Focussing on purely technical causes is no longer sustainable, particularly as we clearly know that the vast majority of accidents have a considerable human factor component. Analysis of accidents and incidents is one of the most effective methods of identifying safety related problems and working out ways to prevent recurrence. Increased emphasis on analysing the human factors, along with upskilling investigators in human factors knowledge is one of the more progressive and likely beneficial developments in recent times and if used wisely will make a growing and significant contribution to future accident prevention.

Another area where we are making progress in is leadership and management. The 2010 Manila amendments to STCW provided a greater focus for these. Although still at a very basic level, it is nonetheless a start. The UK fully supported this development and our own Human Element Leadership and Management course (HELM) was developed accordingly. HELM is currently undergoing a review and we want to ensure it is fully fit for purpose in the modern maritime industry.

Where is progress needed?

Firstly, the reluctance of many to engage with the Human Element seems to be heavily based on the misconception that Human Element is all about, or primarily about, manning. Whilst manning is one component of Human Element, it is precisely that, one component. There are so many more, and by a narrow focus on manning we are missing many golden opportunities to make enormous strides in safety and operational performance.

Secondly, let's embrace the evidence, open our minds and base our decisions on modern scientific understanding of human performance, capabilities, limitations and fallibilities and move away from the historical approach of negotiated custom and practice. We need a more fair and open-minded culture that can embrace all the technical, non-technical and social aspects of seafaring.

Thirdly, let's be more inquisitive, carry out more human based research focussed on the maritime industry and designed to deliver the improvements in performance we require. We need to cultivate a general recognition and acceptance that Human Element practice, and development of the soft, non-technical skills can genuinely make life better for all on board and ashore.

The often quoted figure that human actions account for some 80% of accidents and incidents is probably in the right ball park if we consider direct human action in the immediate run up to an accident alone. However, if we look at the fuller picture and take into account actions that may not have directly caused the accident but contributed indirectly – the latent factors - that figure is close to 100% when we take training, management, design, construction, maintenance, organisational culture and so on into account.

Current **CHIRP** analysis of incidents shows a continued pattern of failings in situational awareness closely followed by communications, culture, teamwork, local practices and capability. Analysis by others shows similar results. How can we address some of these issues? MGN 520 (M) "The Deadly Dozen" provides a good overview of this – outlining the 12 most significant human factors in accidents and what can be done about them.

Let's start with the basics – to set people up to succeed we need to give them the correct tools for the job, both hardware and software. Design issues can be problematic. Ships and ships' equipment should be built with sufficient attention to the Human Element. The specification may seem OK on paper, but has it been fully thought through with the user in mind? Is equipment easy to use, can displays be seen clearly, machinery accessed and maintained effectively? Issues of noise, vibration and light pollution in accommodation areas can adversely affect crew whilst emergency access and enclosed spaces are critical to safety. These issues should ideally be addressed at the concept/design stage – once the ship is built it is too late to make significant changes. We need to attract the attention of both the people who commission ships and those who design & build them.

CHIRP Maritime – Insight Article:

The same applies to written procedures and instructions for carrying out tasks. Too often they can be unclear, ambiguous or just unworkable, leaving the operators to work it out for themselves or use their own local practices to get the job done, not always safely.

A better understanding of automation, automated systems and other technological developments, particularly with regard to human performance would help. Whilst these have many attractions, not least taking away the routine, dangerous and mundane tasks from the operator, the downside is that it can lead to skill fade, reliance on equipment over competence, complacency, and boredom & fatigue, all of which play a significant role in the loss of situational awareness.

A straw poll by MCA identified that the key concern of many is the ship-shore interface. Many were concerned that the ship didn't understand the shore and vice versa, that there was limited trust between the two and they were working to a different agenda with the ensuing result that safety and performance as well as crew wellbeing was compromised.

Traditionally the maritime industry has taught the technical aspects reasonably well although competent use of modern technology is presenting new challenges, and the **CHIRP** analysis has raised a concern that capability may be a factor in many incidents. Leadership and management skills are beginning to be addressed with the 2010 Manila amendments to STCW.

However, one area where we could make significant improvements is in training about human factors, human performance and limitations. In other words, helping people learn more about themselves, how humans work, and how this can improve our own and our teams' safety and operational performance. This has paid significant dividends in other safety critical industries and there is no reason why it shouldn't raise standards in the maritime industry too. A basic understanding of how our minds work, how and why we make mistakes, and how we can help prevent ourselves and each other making mistakes would make a significant contribution to maritime safety. Yet we seem reluctant to embrace these vital lifesaving skills.

Another key component of safety is organisational culture, particularly embracing the key principles of Just Culture. Adopted in a number of industries, indeed enshrined in law in areas of aviation, Just Culture remains a poor relation in the maritime world, yet it offers wonderful opportunities to identify risks and learn incredibly important safety lessons whilst simultaneously building communication and trust within organisations.

What Could Be Done?

The industry could look at developing effective Human Element Training, possibly embedding it into STCW through IMO, although this would take concerted international effort and agreement. However, we don't need this to happen as a prerequisite for the industry to address human element issues itself.

A number of things could be done without needing to resort to regulation, for instance:

- Develop effective Just Culture principles within organisations. Effective dissemination of the lessons learned across the organisation should enable a better understanding of risks, operational issues and above all expand the boundaries of situational awareness;
- Consider providing crews and shoreside staff and management with human factors training, particularly human performance & limitations and the soft, non-technical skills essential for effective communication and teamwork.
- Look at the ship-shore relationship in organisations. Be open and objective and involve everyone. You might be surprised. Consider developing leadership and management programmes within the organisation, with significant emphasis on human factors.
- Invest in wellbeing strategies to look after the mental and physical wellbeing of crews and shore side staff. Mental health concerns in particular are increasingly apparent with the consequent negative impacts on seafarer wellbeing, health, safety and operational performance.

CHIRP Maritime – Insight Article:

- Engage with ship designers to build ships that are “human-friendly” ie built to accommodate human requirements as much as possible. It is far cheaper and more cost effective to get the design right before construction than it is to correct failings afterwards or indeed live with the consequences.
- Manage fatigue and fatigue-related issues effectively. MGN 505 (M) provides guidance on fatigue and the law as it stands in the UK. There is plenty of other guidance too explaining the causes, effects and dangers of fatigue.

Finally, engage a wider audience. Many that are already engaged are highly proactive and reaping the rewards of their efforts. Help expand the sphere of engagement to encompass as many shipping organisations as possible.