The Complete 21st Century Officer

Captain Quentin Cox
Senior Lecturer
Warsash Maritime Academy
Southampton Solent University
UK

E mail **Quentin.cox@solent.ac.uk**
Tel **00 44 1489 556292**
Fax **00 44 1489 573988**

The Complete 21st Century Officer

Officers of the 21st Century will need to cope with quite different working environments and cultures to their predecessors. Topical and highly publicised issues, such as piracy and the criminalisation of the seafarer, which affect their careers, will continue in the short term. However, both the technical and non-technical skills of the officers will need to be developed in directions not seen hitherto. Technology affecting shipboard equipment is progressing dramatically, as cited elsewhere in this conference's papers, yet it becoming increasingly apparent that non-technical skills and human factors are being integrated on a more formal basis within an officer's formal training.

The recent IMO Diplomatic Conference in Manila debated proposed amendments to the existing STCW'95 Convention relating to mandatory *Human Factors* training. For the first time we may have to get used terms such as 'leadership' and 'teamwork' incorporated into such legislation. In response, one might ask the question "How can leadership and teamwork competence be measured?" Clearly therefore, interpersonal skills will form a significant part of this requirement.

This paper will examine the various personal and inter-personal qualities required by the individual whom is to become the 'Officer of the 21st Century'.

Key Words; Human Factors Culture Non-technical Skills

The Complete 21st Century Officer

What challenges face today's officers not faced by their predecessors? Three principle areas; Security, Technology and Inter-personal Skills. Yes, predecessors did have to face these issues but they are even more entrenched and enhanced these days.

Security

Security awareness on board merchant shipping is by no means a new or recent development, yet the origin and nature may be. The quest for material gain is nothing new and measures to counter such activity have been practiced within the industry for centuries. However, additional threats have emerged more recently.

Mention the term 'security' to a seafarer 9 years ago and the images of the aftermath of extreme political activism would no doubt have appeared in their minds. The term mentioned now is arguably more likely to yield images of gun-toting Somalians swathed in ammunition sashes and grinning out from a primitive yet highly powered dow (Bateman & Chan 2009). Both elements, amongst many others, pose threats to our security and of course are acknowledged by current regulation and guidance. Indeed the term piracy, even in its present day interpretation is not especially new. When I was sailing on a world wide basis in the 1980s and 90s, I was all too well aware of piracy hotspots and was used to taking detailed measures on board whilst the ships on which I was serving negotiated these areas. Mercifully, I have no tales to tell of attack but I certainly remember sailing with colleagues whom had suffered such attacks.

Yet the complexion of piracy has changed and indeed developed since the advent of the 21st century. The aggressors are more brazen and certainly more sophisticated (Kraska & Wilson 2009) than I would have known them. Technology, of which more hereafter, has not by-passed them and their access to knowledge of shipping movements and to the busy sea lanes bearing these ships is routinely easy for them. As with many crimes, the culprits are able to compete with preventative measures and the chances of being approached by them in known trouble spots are, reportedly, incalculably higher now than during my time on the ocean.

The publication of advisory literature (OCIMF 2009), let alone heated debate, has multiplied accordingly so this is one alarming area where the seafarer of today will have a markedly different outlook compared to those of yesteryear.

In addition, with few exceptions, the likelihood of an apparent motiveless attack, particularly on ships carrying dangerous cargo or passengers is enhanced. The lack of material gain and the pure objective of causing damage and harm to life have become trademarks of extreme political activism. Many security concerns are oriented around perpetrators of harm with no concern for their own well being, only for the infliction of damage and harm to human life, which inevitably result in their own demise. This adds a complication to security, in that in the case of those intent on obtaining material gain, usually wish to preserve their own lives in order to enjoy the benefits of their illicit gains. This is clearly not the case when perpetrators merely wish to highlight an issue, where their own safety is of no consequence to them. As a last century seafarer, I have to say it rarely crossed my mind that the security of my ships could be compromised like that, or was it pointed out to me.

Criminalisation

Once again, I am not trying to pretend that this was not an issue in 'my day' but once again it is the complexion of the issue that I intend to debate. Whilst it's just about always been the case that culprits of illegal actions pay for their misdemeanours, there appears to have been an especially vindictive turn for the worse amongst shore-side prosecutors of maritime incidents, more recently.

Take the cases of the Erika, or Prestige, (Psaraftis 2006) or Heibi Spirit, where documented evidence strongly suggest the Masters and senior staff made every effort to protect the lives of their staff and their ships. Yet what awaited each of them upon the conclusion of the incidents in which they were involved and in which they successfully protected the lives of their staff? Jail. Why?

Without going into the detail of the investigations, one over-riding reason for their fate was the vicious and narrow minded approach of prosecutors, whom made every effort to exploit those least able to defend themselves. In each case compelling arguments could be made to defend the efforts of the senior staff on these tankers, yet the courts in their infinite wisdom chose to vilify those who not only acted within the finest and most noble traditions of the sea, in terms of protection of life but entirely within existing maritime legislation. Naturally, the present vogue of environmental hysteria was exploited in order to convict the senior staff involved, highly emotive and political gestures playing into the hands of the public onlookers.

So these elements also have been much enhanced since my days on ocean going tankers and the cost of these developments, or shall I say regression, has been paid for by these noble tanker men and their families (Jeong-hun 2009). In terms on the effect of these incidents on today's seafarers, one might ask if they act as a deterrent. Why would a junior officer earning reasonable wages, want to jeopardise his career and mental health by taking a senior position and the consequent worry. As pointed out my Michael Gray

> *"The old.....officers are retiring in droves but there is often a reluctance among their juniors to replace them. Why accept all the responsibilities of higher rank when you can get a very reasonable reward without them" (Gray 2007)*

This quandary will place great stock on the motivation of junior officers. Clearly the apparent higher status and wage differential and more importantly if the wage differential is adequate, as alluded to above, will not be the only consideration. Will they be motivated to take the risks associated with the various threats to their security and the impending criminalisation for the slightest misdemeanour? Will motivational factors act as deterrents? One feels constrained to ask the question.

Technology – Cargo and Bridge Watchkeeping

The maritime industry has always been one to absorb technological advancement. During the halcyon days of cruise liners, the Blue Riband prize formed a platform for competition where the speed of Atlantic crossings became the aspirations of the antagonists (Bonsor 1980). Speeds attained in those far off days by the ships involved are still observed with a degree of envy by cargo ship operators in this age, though the economies of scale required to reproduce such figures are at odds with the financial husbandry necessary now.

The evolution of the container trade, out of the general cargo trade facilitated the use of all manner of technological advancement. Having witnessed the sight of automatically and remotely operated gantry cranes and low loaders on a Rotterdam container wharf a few years ago, I had a stark demonstration of such extraordinary leaps and bounds.

> *"Recently, the term Automated Guided Vehicle Systems (AGVS) has become a keyword in publications and conferences addressing horizontal handling of containers in maritime terminals.*

The European Container Terminal (ECT) in Rotterdam, the Netherlands is the most automated container terminal in the world. A fleet of AGVs integrates yard-cranes and ship-cranes". (Koshnevis and Asef-Vasiri 2000)

Whilst the seasoned deck and cargo officer may yearn for the nostalgic three weeks alongside in order to work a single cargo, technology has left us behind. Take the example of the container ships and their cargo. The ships' officers may not need to know the finer details of the computerised programming which works the equipment but they do need to know that the plans are executed.

So the level and nature of technology with which officers need to be familiar, has changed as well and indeed is ever changing. I would be the first to admit I'd find a bridge a most bewildering place now, with no paper charts and the sextant box and compass error book covered in dust. Perhaps I am being unfair but a number of ships I have visited in the most recent past years have looked like this. As a result of STCW'95 regulation changes, Electronic Chart Display Information System (ECDIS) training has recently been made mandatory and soon the fitting and use of ECDIS will be also. It is noteworthy and entirely logical that the requirement for training precedes the requirement for the equipment. Voyage recorders and monitoring devices are becoming increasingly scrutinising and detailed so the 21st century officer will have to be conscious of being monitored more closely than their predecessors.

Closed Circuit Television, positioned on board for many reasons, enhances the monitoring regime and will be utilised to monitor and record as much information as possible, especially in the event of any mishap. Today's officers will be becoming used to being watched and if they are not, then it is as well that they do. My intention, in this paper, is to discuss the psychology associated with working with this advance in technology because it is most certainly a different psychology front that experienced by officers in the past.

Of course, it is also incumbent on the officers to activate this type of equipment since if their actions are not recorded, then they will be held responsible for the lack of recording. However, it may well be in their own interests to have their actions recorded to support their own interpretations of events, should such reports become necessary. These are the type of quandaries upon which today's officers will be pondering.

Human Factors

Let us think about cargo monitoring once again and again there are human elements associated. Cargo work on tankers may be monitored and controlled by the most sophisticated and computerised equipment. In 'my day' the innovation of hydraulically powered valves on a tanker was a highlight, instead of manually operated ones. Now it is common for deck and pumproom valves to be operated remotely from a comfortable seat inside the cargo control room, by means of a computer screen upon which is superimposed a cursor. The cursor is operated by a mouse and the valve to operate is selected by simply selecting it with the mouse and left clicking. This is a great deal easier than crawling along a narrow gap in the lower depths of a pumproom and using one's own hands to open or close the required valve. Yes, it's a lot easier and I certainly don't begrudge the 21st century officer the ease of this. Yet the psychological aspect of this is that the cargo watch officer might feel they cannot leave the control room. They might feel that any manual work is to be done by their assistants and that their place is exclusively by the computer in the control room. Whilst acknowledging the importance of monitoring the operation closely I also question the faith put into the technology by the staff in question. Does this approach to cargo monitoring entrench a complacent attitude toward the task? Without bashing the predictable 'technology can go wrong' drum, my concern is that as much as possible it is good practice to corroborate every item of information presented by an automated monitor. Where possible, local checks can be made as well as remote checks, for example, for tank contents or valve status and this is the type of attention I'm alluding to here.

So whilst accepting the labour saving equipment technological advancement has afforded the 21st century officer, I am concerned that the professionalism and attention detail engrained into their predecessors are not lost; there is no reason why they should be, as long as their relevant training is adequate.

> *"Relevant and well-designed education and training has a direct effect on competency".*
>
> (Alainati et al 2009)

Today's staff are infinitely more computer savvy than those of my own generation and naturally, this is no bad development as long as the scrutinising attention to detail is not lost as such automation appears to take over the job.

On any ship, the loadicator equipment is amongst the most crucial from a regulatory and safety angle. Naturally, technology has caught up with them and that is also a development I consider positive, as long as those working the programmes know what information they are putting in. A fluency of the interpretation of the information yielded by the equipment is also vital. Are drafts checked manually today? Are loading surveys conducted on bulk or dry cargo ships? I'd be interested to know and ascertain just how far technology has taken over these fundamental tasks. It does concern me that magic electronic boxes might possibly breed complacency and laziness amongst the practitioners aboard our ships (Allen 2009). As long as staff are aware of how much information can be verified manually, then of course the appliance of technology can assist the craft, rather than replace it. For your sake, I will refrain from the 'mark one eyeball' rant as well.

The Changing Persona

So as well as all the new technological and electronic devices with which our 21st century officer has be familiar, does the psychology differ from that which served hitherto? Do the human factors and non-technical skills required differ? So far, I have hinted at certain areas which may require a different approach from in the past but my sense is that a variety of different skills are now needed.

Like it or not, resource management skills are now a regulatory requirement, or at least they will be once the most recent proposed amendments to STCW'95 have been implemented in 2012.

One might ask how many ships sail with only one single nationality represented amongst their crew. Without recourse to statistics, I venture to suggest the answer to that is very few. Inevitably, this means that each national representative must consider how to co-operate with fellow workers from different countries and probably different cultures. It is far from uncommon to find all ratings from one nationality aboard a merchant ship (Wu and Winchester 2004) but officers from a number of different origins. In fact it is far from uncommon to find each officer from a different origin. Language differences and difficulties may present the least of the problems, though naturally it is often cited as the most obvious barrier to communication. Culture and cultural practices, traits, behavioural patterns and traditions may all be quite different and it is becoming an essential component of the 21st

century officer's repertoire of social skills to be able to understand and overcome such obstacles.

I was recently conversing on a social basis with a tanker officer, presently serving as Chief Officer and the focus of our discussion at one stage was simulator training. He opined that for added realism, simulator technicians should shout, scream and jump up and down at junior operatives in order to recreate a genuine spirit of interaction aboard a cargo ship today. Though a number of years have passed since I served in a similar capacity on tankers, I was intimately familiar with the point he was making. Yet whilst such behaviour might be accepted though disliked amongst staff from the same country, such behaviour would be unacceptable, even unforgivable, when dealing with a multi-national staff. Losing face in front of others, for whatever reason, is entirely unacceptable and such action will undoubtedly lead to a complete lack of both trust and co-operation from junior staff.

Cultural Awareness

So who will advise our present fearless 21st century officers in such subtle guidance? Do the proposed changes to STCW'95 cater for such guidance, under the heading of human resource skills? I don't think so. Does the convention mention Ramadan, Eid, New Moon festival or Chinese New Year? What level of co-operation would you expect from a crew or an officer if the ship's senior staff did not recognise these significant dates amongst their crew? This is not an entirely new concern but the apparently increasing number of multi-national groups of officers now manning cargo and passenger ships, it's significance is becoming greater and ship managers both ashore and on-board would be well advised to show appropriate awareness (Hork 2008).

It is not the case that I believe inter-personal skills should remain exclusively on multi-national crewed ships. As I hinted before, impatience and frustration were exhibited graphically but routinely by my fellow seafarers, especially senior staff with their responsibilities – and perhaps that is the explanation; a combination of their onerous responsibilities and having to work with me was too much for them – to the extent that it was 'all part of the game' so to speak. Having been on the receiving end of a number of these outburst, I cannot say I found them to be particularly enlightening experiences. I doubt many staff on the receiving end these days feel any different. Patience, tolerance, understanding and cultural awareness amongst other inter-personal skills will not, as I say, be the domain of

multi-nationally crewed ships alone. The 21st century officer would do well to be mindful of that.

Teamwork

Teamwork in any situation requires efficient and effective communication skills. Think about the notion of teamwork. It is not misleading to think that the most successful teams, be them sporting enterprises or those involved in industrial pursuits, have members whom know their own jobs, what is expected of them and of their team mates. So effort is not duplicated and everyone fulfils their own responsibilities. A team on a ship is no different. Perhaps this is the area alluded to most emphatically by the proposed changes to STCW'95.

Let us consider a few more related terms, such as leadership and decision-making (Chauvin and Lardjane 2008). What are the human factors involved in efficient leadership and how are they taught? Are they nurtured over time as part of a long-term experiential learning regime? You may have your own ideas but having spoken to many current and former sea-staff I can report that many people have very different views on the matter, in terms of answers to those questions. Many openly laugh at the idea of 'human factors' training, though it is usually the former seafarers whom hold such an opinion. Current seafarers, with perhaps some experience of company training in those areas, are less sceptical about the training and its objectives. This type of formalised training in high risk industries, including shipping, is relatively new, yet it appears to have found an audience. The membership of the IMO, for example, certainly appear to have taken the ideas on board and agreed to incorporate the requirement for such formalised training (Hetherington et al 2006) into the STCW '95 convention, as cited on numerous occasions in this paper already. It encouraging to note that many operators had taken the initiative voluntarily to employ such training for their staff prior to the mandatory requirement being introduced.

Conclusion

From the information I have gained researching this paper, it is clear that technology is not the only arena of change as we progress thorough the advent of the 21st century. The economic dimension of ship management has had an impact in the way ships are manned, though this is not a quintessentially 21st century aspect of shipping. Single nationality crews would not have to take into account many of the issues raised in this paper, so the scarcity of this type of manning means a more complex life for all; complex yet ultimately rewarding.

The rewards of travelling the globe were enhanced by the opportunity to mix with foreign cultures on board, in my own opinion and experience.

Yet this type of exposure to different cultures from ones own brings with it its own challenges, as covered by this paper. Arguably, the greater challenges have emerged not as result of the advancement of technology but the deterioration of funding available to select and operate single-nationality crews. However, the manner by which these challenges are met may yield greater rewards as a result of cultural awareness and understanding.

References

Alainati, S., Al Shawi, S.N., Al-Karaghouli, W. (2009) *The Effect of Education and Training on Competency.* Conference Proceedings, *European and Mediterranean Conference on Information Systems 2010.* April 12-13 2009, Abu Dhabi, UAE

Allen, P. (2009) *Perceptions of technology at sea amongst British seafaring officers', Ergonomics*. 52:10, 1206 — 1214

Bonsor, N.R.P. (1980) *North Atlantic Seaway, Vol. 5* as cited by Newman,J.

Chan, J. & Bateman, S. (2009) *Security at Sea:Can Anything be Done at the Somali Coast?* S Rajaratnam School of International Studies, Nanyang Technological University. P 1.

Chauvin, C., Lardjane, S. (2008) *Decision making and strategies in an interaction situation: Collision avoidance at sea.* Transportation Research Part F: Traffic Psychology and Behaviour. Volume 11, Issue 4, July 2008, Pages 259-269

Jeong-hun, J. (2009) *Korea Beat: Chosun Desk on Hebei Spirit Case and Indian Boycott Movement*. Asian Correspondent. 6th January 2009.

Kraska, J & Wilson, B (2009) *Combating Pirates in the Gulf of Aden: The Djibouti Code and the Somail Coastguard.* Ocean and Coastal Management. Elsevier. doi:10.1016/j.ocecoaman.2009.07.002

Khoshnevis, B. and Asef-Vaziri, A. (2000) *3D Virtual and Physical Simulation of Automated Container Terminal and Analysis of Impact on In Land Transportation*. Univeristy of Southern California. Metrans Transport Centre p1.

Gray, M. (2007) *Training the Trainers.* Lloyd's List July 30th 2007.Infoma, London.

Hetherington, C., Flin, R., Mearns, K. (2006) *Safety in Shipping: The Human Element.* Journal of Safety Research Volume 37, Issue 4, 2006, Pages 401-411

Hork, J. (2008) *Crew study of seafarers: a methodological approach to the global labour market for seafarers.* Conference Proceedings; 1st International Ship – Port Interface Conference. The Human Element, Bremen 19th to 21st May 2008.

OCIMF (2009) *Piracy - The East Africa / Somalia Situation. Practice Measures to Avoid, Deter or Delay Piracy Attacks.* Oil Companies International Marine Forum.

Psaraftis, H, N. (2006) *Maritime Safety in the Post-Prestige Era*. Marine Technology, Volume 43, Number 2, April 2006 , pp. 85-90(6)

Wu, B., Winchester, N. (2004) *Crew study of seafarers: a methodological approach to the global labour market for seafarers.* Marine Policy Volume 29, Issue 4, July 2005, Pages 323-330