Checklists – a Tool or an Obstacle?

By John Acomb

John Acomb is a former ship captain, university lecturer, class society auditor, and HSSEQ Manager.

Why make checklists obstacles when they can be valuable tools? Today's international regulations where meant well and our industry introduced them to improve safety. Safety did improve but the documented systems grew exponentially. The main reason was a compliance mindset, which many call a "cover you back" exercise. This additional complexity can be an obstacle to safety goals. As a result, SMS's have become less effective than they should be. They are, in fact, frequently a contributing cause to what they are trying to prevent.

Maritime accidents are overall trending lower, however the potential for serious accidents still exist. Seamen are still dying due to accidents, which have human errors as root causes. Companies introduced procedures and checklists to prevent accidents, but provided little or no guidance on how to properly develop and use them.

Complexity is a Vicious Cycle

When our industry introduced the International Safety Management Code (ISM), the goal was to capture the ship and company knowledge into a documented system. This process would be the engine for the stated purpose of the ISM Code – "to reduce accidents caused by human error". This occurred but the documented systems grew. Incidents within companies, as well as corporate and charterer requirements convinced management that more details were necessary. Major international incidents convinced IMO that more regulations were necessary to prevent recurrences, followed up by Flag States and Class Societies. The level of details grew. When we added more details, we used long sentences with difficult words and organized them in an academic non-operational structure. This became a vicious cycle.

Human Error can be Controlled

I was a lead auditor with Det Norske Veritas (DNV) prior to the ratification of the ISM Code. In 1994 I wrote an article, which appeared in the United States Coast Guard quarterly magazine "Proceedings", entitled "Human Error Can Be Controlled". As the ISM Code was just coming into force, I encouraged

shipping companies to follow the lead of the airline industry for simple concise checklists used by pilots. I believed then, and still do, that this model was the one to follow for maritime SMS's. Today, human error is still our biggest threat. Looking back, I see how the SMS's grew and became too complex. I also believe that the problem was not the ISM Code. The problem was the way we captured the intentions in our SMS's. The ISM Code promotes instructions written in a clear and simple manner. Would it not make sense to do just that when writing our SMS's?

Can we Break the Vicious Cycle of Complexity?

The critical question is; how can your company change the way you develop and use checklists? One problem is that companies have not devoted time to proper usage requirements within the SMS, which results in inefficiencies at best - and confusion at worst. Good tools are half the job, and in 2015 I found Terje Lovoy as a good source of inspiration. He had spotted problems with lengthy airline procedures years ago. He also developed methods to stop the vicious cycle of growing maritime SMS complexity. Terje is the founder of the Norway based research company Lovoy AS. Many shipping companies are using the Lovoy Method to improve and simplify their SMS's. For more information, see www.lovoy.info

Good tools are only half the job, knowing how to use them is the other half. True simplicity comes from thorough understanding, so you need people who understand the matter very well. We should therefore use seaman within our own organization to write checklists and procedures. For vessel specific aspects, it is critical for writers to be intimately familiar with those. Lovoy's vison is that seamen or former seamen can be trained to be authors much easier than authors can be trained to be seamen.

When you have the tools and the right people, then you are ready to simplify and improve your SMS. We must consider each step in a checklist and ensure that they meet safety fundamentals, while not burying critical points. This way we can prevent the checklist from becoming too long.

We must challenge every checklist step. Each step must justify its continued existence. Through risk assessments we should identify when the criticality of a step requires team or other redundant verification. If it does, then we should include this step in a checklist. This process identifies variable impacts which may raise or lower the criticality of checklist steps.

Checklists are not Training Devices

Some steps are not critical enough to qualify for the checklist, but we will still keep them – not in a checklist, but in a procedure. Procedures are for training and compliance. Checklists do not by themselves ensure competence. Checklists cannot replace training and drills. Proper checklists make it easier to train and harder to hide a lack of competence.

Conclusion

The development and usage of concise checklists with identified verification points will lead to less confusion, improved operations, safer ships, and better team management. To achieve this goal, you need good checklist design tools and the right people to use them.

References:

Acomb, John, "Human error can be controlled", Proceedings of the Marine Safety & Security Council, the Coast Guard Journal of Safety at Sea, November - December (1994) 9-10.
https://lovoy.info/m/articles/USCG-Proceedings-NOV-DEC-1994.pdf

Lovoy, Terje, Simplification of the Safety Management System, (Paper presented at the DNV GL Safety and Human Element Workshop, Athens, November 22nd, 2017.)
https://lovoy.info/publications/