



Safety Management 2.0

How to Simplify Your SMS

Article from North of England P&I Marine Insurance Loss Prevention Workshop, Seattle 18th October 2022. By Jodi Lee and Terje Lovoy, terje@lovoy.info

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The author's backgrounds are available at <https://lovoy.info/>



Introduction

A key feature of an effective safety culture is the recognition that accidents are preventable and usually occur following unsafe actions or a failure to follow procedures. 13 years ago, we started giving presentations about Safety Management Systems (SMSs) growing so complex that they lost sight of the seafarer. Our vision was that if something is user-friendly, then we will use it more. And if something is understandable, we make less mistakes.

Today, most companies know that an overly complex SMS is a problem but also a potential for improvement. A user-friendly SMS is good for safety and efficiency. It is easier to use on-board. It is easier for management to keep it up to date and prepare for audits. The big question is how to simplify without removing valuable information. We will discuss how to use your own people to improve your SMS. We will talk about the process, its benefits, and risks.

What Makes SMSs Too Complex?

There is usually a link between how well we understand problems we are trying to improve and our results. It is therefore worth spending some time discussing why SMSs often become overly complex. Over a 10-year period the Lovoy Team analyzed 63 SMSs, many with around half a million words.



Old SMS before simplification.
Photo by Ingebright Arnøy

More than 1,000 seafarers worldwide completed our SMS usability survey which found these typical problems:

- Difficult to locate info
- Instructions not following workflows
- Spaghetti mixing of explanations and operative tasks duplicated in several places
- Difficult words, long and passive sentences

The problem is seldom too much information - the problem is usually the way SMSs present information.

Contrary to many beliefs, our research found that the problem is seldom too much information. The problem is usually the way SMSs present information.

Oversimplification

Shipping companies who believe the solution is to remove the “excessive” details may end up removing facts needed by inexperienced users or for audits. They risk losing years of hard learned company experience. We call it oversimplification.

Written by Seafarers for Seafarers

Our research gave better understanding of the problems and we started testing improvement methods. True simplicity comes from thorough understanding. Simplicity without understanding is difficult. Those who do not know subjects well often insist on too much complexity. Our vision was to train seafarers to write rather than training technical writers to understand subjects.

Not a Quick Fix

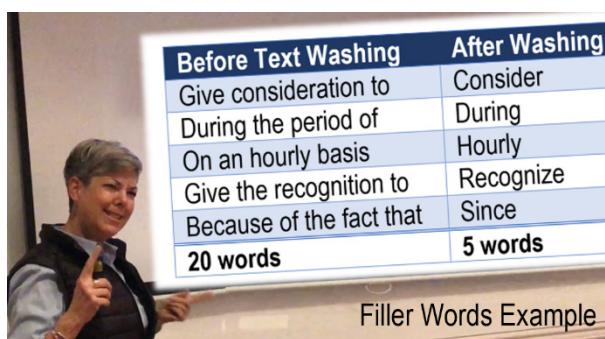
Lasting SMS simplification is not a quick fix of documents, it is about stopping people from adding more complexity. The first step is to invest in your own people by training them to stop adding more complexity. To do this they need good methods. To help with this we developed what became known as the Lovoy Method.

Controlled Language

The Lovoy Method is not a new software or hardware. It is like learning a new language. Scientists call it a controlled language. It is English but with strict rules for grammar, vocabulary, layout, and structure. When used correctly, it reduces complexity without loosing facts. It makes it easier for both native and non-native English speakers to find and use what they need. The Lovoy Method allows shipping companies to use their own people to reduce large volumes of complex inconsistent text to clear, easy to use text.

Wash the Text Last

Text washing means to remove double talk, difficult words, passive sentences, long sentences, and filler words. Filler words are words that add little value such as *completely dead or round in shape*. The photo below shows text washing examples:



Before Text Washing	After Washing
Give consideration to	Consider
During the period of	During
On an hourly basis	Hourly
Give the recognition to	Recognize
Because of the fact that	Since
20 words	5 words

Filler Words Example

Short everyday words are easy to understand. As required by the ISM Code – we should use them as much as possible to make our language clear and understandable. Reading complex words take more time even for native speakers. We made a free online

Maritime Plain Language Dictionary at <https://lovoy.info/dictionary/> suggesting simpler alternatives for typical complex words found in older SMSs.

We should continue using technical maritime words. But it is important to understand the difference between technical and general words. We suggest keeping maritime words such as port and starboard. But try to find simpler alternatives for general words such as elucidate and discernable.

Focus on the Big Picture First

Big picture thinking is a crucial part of structured problem solving. In our case it means first untangling what we call the spaghetti structure.

Spaghetti structure comes from copying, pasting, and mixing operational tasks and background explanations. This mix has tangled spaghetti like strings branching through the SMS. It requires too much cross-referencing. It is not following the seafarers’ normal workflows. Spaghetti structure makes it difficult for seafarers to find what they need.

What is the Best SMS Structure?

Many companies do not base their overall SMS structure on the seafarer’s needs. They do not follow the workflows for bridge, deck, engine, and cargo departments. Old spaghetti structure often comes from copying the table of contents of the ISM Code, TMSA, SIRE, or another guidance document. Companies often try to please auditors at the expenses of seafarers. But most audits rely on more than one standard. Each standard has a different structure.

A better option was therefore to make a new structure that follows the seafarers’ practical workflows while capturing the content in all relevant guidance documents. This resulted in better seafarer feedback.

To the surprise of many, most auditors also gave better feedback. The feedback was so good that it became part of new standards. As an example, Eidesvik Shipping got this feedback from a major audit: *“This was our first audit where a crew could locate all procedures immediately.”* After the audit Eidesvik had no findings related to operational procedures or checklists. The feedback added that their new procedure and checklist writing style was very easy to understand and that there were no misunderstandings among the crew.

Similar feedback from several shipping companies made OCIMF recommend arranging instructions in a clear and logical manner and in a way that makes it easy to identify each step.

Why Is it so Hard to Untangle the Spaghetti?

Untangling the spaghetti is the hardest part. It is hard because we must extract and combine info from many different sources. We must comply with all relevant codes, conventions, regulations, and standards.

How well we succeed with restructuring is our single most important success factor. The SMS simplification success is 80% restructuring and 20% text washing. The final judge will be your seafarers. A good structure is a road map making it easy for your seafarers to find what they need.



A good structure plan is also a roadmap for your SMS writers. Sadly, many companies jump right into fix-it mode without helping their writers with a good plan.

SMS simplification without a good structure plan is a high-risk project. It is like driving without a map. If you don't know where you are going, you will end up someplace else. With practice, writers will learn text washing, but it takes years of experience to get proficient in restructuring. To plan the SMS structure, we must analyze different factors and variables. As an example, we can combine procedures for some cargo types. Other cargoes need individual procedures. For some cargo, we should combine loading and unloading in one procedure. Other cargoes require separate loading and unloading procedures.

The single most important success factor is restructuring each procedure and the overall SMS.

SMS structure planning is an ongoing process and not a one-time task because we need to restructure each procedure as we go along. Without years of SMS simplification experience, writers are unable to restructure effectively. This is unfortunate since restructuring each procedure and the overall SMS is the single most important success factor.

Who Should Rewrite Your SMS?

We recommend giving proper training and then using your own people to rewrite your SMS. We do not recommend outsourcing your SMS writing. But we recommend using external support when you restructure each procedure and process. This support allows your writers to produce higher quality work in shorter amount of time. With external support your writers can focus on what they know best – the subject matter content.

How Much Time and How Many Writers?

Some companies involve many writers in their SMS simplification projects. They expect each writer to do part-time SMS writing in addition to many daily tasks. This takes more time and is not very efficient. We tested different options and found that it usually takes several part-time writers more than a year to rewrite bridge procedures. Untangling the spaghetti takes most of the time. We also found that one full-time writer with good structure support can untangle and rewrite bridge procedures better in only three months.

In three months, one writer did more than several writers in a year.

One supported fulltime writer is faster, requires fewer people and gives better results with less risk. One supported fulltime writer will save many months of project time.

After a writer makes new draft procedures, you must use a larger group to review and approve them. We also recommend testing on selected ships. After rewriting the SMS, your traditional admin team can continue maintaining the SMS in the same manner as before the simplification project.

SMS Graphic Layout

We designed an advanced MS Word template to help writers separate step-procedures and prose text background explanations. The template can make notes, cautions, warnings, and other styles.

Most importantly, it has different layouts for prose text and vertical lists with operational tasks. We made special formatting rules for operational tasks using proactive imperative step-procedures. The template gives operational tasks their own exclusive layout making them extra accessible. When using this template, writers must first untangle any spaghetti structure. The last thing they should do is to wash the text.

Case Studies

Many companies succeeded in simplifying their SMSs. Surveys typically showed around 70% increased perceived usability.

Oldendorff Seafarer Feedback

- Words are simple and easy to understand
- Sentences are short and to the point
- Far better than old style
- Easy to read, understand and use
- All info needed for jobs in one place
- Logical structure
- Clear attention to key points for safe work
- All crew understood procedures well
- Step by step structure is easier to follow
- Takes less time to prepare for jobs
- This will really help us in the future



Shared with permission: Feedback from seafarers collected by Oldendorff Carriers GmbH & Co. KG when testing their new Lovoy Method simplified SMS procedures in 2021.

Measure SMS Text with KPIs

The most successful companies always measured their results. We designed Key Performance Indicators (KPIs). This helped each writer meet clear targets such as Percent Passive Sentences (PPS) and Average Sentence Length (AWS). Most importantly, they used our cross-reference template to untangle and measure any remaining spaghetti which ensured proper workflows in step-procedures, checklists, and permit-to-work forms.

*Mike Bradshaw, Global Head of HSSEQ for V.Group, 2020:
The figures clearly show that the process is helping us deliver more concise information and part of our ongoing drive to make information more user-friendly for our seafarers. We believe the new format of the VMS will be well received by all our colleagues when the updated version is released this month.*

David Furnival, BSM Chief Operating Officer 2017:

Project Pilot* was a much-needed initiative aimed at making procedural understanding and communication easier at all levels, as well as promoting better teamwork. Processes are now unified, with better cross-checking and the feedback we have received from our crew in particular, as well as the shipping industry in general, has been encouraging.

Project pilot was Berhard Schulte Ship Management's SMS simplification project.

Possible Risks

Some writers simply paste old spaghetti structure and text into new layouts. This may look nicer, but PPS, AWS, and process cross-reference KPI checks will reveal that garbage in gives garbage out. This is a common problem among untrained writers. We also see a tendency to write everything as fragmented bullets with little or no prose text. With prose text, we mean regular sentences. Fragmented means we are missing basic words needed to form a complete sentence. It might be shorter, but it is harder to understand.

Some thought the solution was to switch to a new SMS software first without fixing the spaghetti. But digital spaghetti is even less user-friendly than paper spaghetti.

The Way Forward

Simplification can be a challenge. Without the right tools and knowledge of how to use them, you risk washing out the information you need.

Most support simplification, but few have specific methods for how to achieve it. Simplicity does not happen by itself – you must design it, and this requires resources. Simplicity is abstract; it is easier to get funding for technical projects. But it is not the technical factors that causes most losses. Since human error causes 70-80% of today's marine losses it deserves its share of our focus. With a modest investment, compared to the large investments shipping companies manage, there is a sizable potential for making SMSs more user-friendly. This is good for safety and good for business. To succeed we must put a value on simplicity.

We must invest in the training of our own people. We must set aside some time for the task. It is a slow down to hurry up process because complex text is like sand in the machinery for large companies. With properly trained internal writers and support, SMS improvement projects are low risk with a very high success rate. The projects are low tech, do not require new software or hardware, but have huge potential.

Lovoy Training and Support

Lovoy offers training and support to shipping companies wishing to use their own people to simplify and improve their SMSs. For more information contact terje@lovoy.info

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Resources

The following is available at <https://lovoy.info/>

Simplification Wins Safety Award (Video)

Offshore Production SMS (Video)

BSM Navigation Procedures (Video)

New Teekay Nav Procedures (Video)

User-Friendly Procedures are Used More (Video)

Simple Word Dictionary