Using airline methods to manage financial and legal risk

How many industries took inspiration from airline loss prevention

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In this article Jodi Lee and Terje Løvøy explain how they started high in the sky with aviation, moved to shipping and then even deeper down to diving. They help different industries use their method to manage operational, financial and legal risk. The Lovoy method improves compliance by making procedures and other documents more user friendly. It is not a software. It is a new way to write and structure information so we quickly find, read and understand what we need.

All large companies face the risk of losing something. This can be loss of life, money, polluting the environment, breaking the law and so on. These companies may have many procedures with large amounts of information. When something goes wrong, the problem is seldom a lack of information. In most cases the problem is solvable because a known solution is available, but for some reason not used.

In the old days people listened to stories told by the eldest members of the group. This was their primary form of entertainment and education. Stories passed from one generation to the next, often reflecting critical knowledge. This verbal passing of collective knowledge prevented losses and helped people survive.

20 Years of Experience or one Year's Experience 20 Times?

Why is knowledge sharing important? Some may say it is like having 20 years of experience rather than one year's experience repeated 20 times. It is about learning from past mistakes. Knowledge sharing is as important today as in the past. But today information is so complex that verbal sharing alone is not enough.

Companies handling risk must have procedures stored in a management system. We also call this standardization, which in effect is collecting years of experience from many people, and getting their acceptance of the best practices. It builds on the principle that the collective knowledge is better than the impromptu suggestion of one individual.

Human error causes more than 80% of accidents in most industries, often because people do not follow procedures. We spent 27 years in aviation trying to understand why so many accidents have "procedure not used" as a cause. Since 2009 we also work with other industries analyzing numerous management systems with thousands of documents.

Many clients complain that their management systems and procedures are too complex to read and follow. As a consequence, employees avoid using them. When the writing is too complex to understand, employees end up transferring knowledge verbally. This means that colleagues pass good and bad habits along, including

unstandardized techniques. This is a big setback – it takes us back to the old days.

How Did Airlines Improve Safety More Than 100 %?

Many of our clients want to learn from airlines because air travel is very safe. But before we continue, how safe is it to fly? In the early 1960's we had 30-40 hull loss accidents per million departures. In 2015 we had 0.32. This makes flying one of the safest things you can do. You must fly one trip every day for more than 8000 years to statistically experience an accident. Many industries are asking how airlines managed to improve safety by more than 100 %. There are two answers. In the first years, technical improvements; and after the 1970's, better ways to manage human error. Our clients asked if we could transfer these concepts to other industries. We found the answer by looking back at what the airlines did to improve their safety records.

Use Experience – not Checklists

Use experience – not checklists, was an unwritten rule for most pilots 30 years ago. Pilots had experienced having to choose between good airmanship and too long checklists. Airline checklists would typically have many non-critical items and pilots perceived them as more of a nuisance than an aid. Since voice recorders watched them, they always read the checklists, but fast and superficially. Today, pilots do not read the checklist fast because they have to – but carefully because they want to. What changed?

In 1998, Swissair had a fire in the video entertainment system. Faced with heat and smoke, the pilots still circled and read the complex lists. This took too long, they crashed and lost all onboard.

What did we learn? Unnecessary complex text competes with common sense and experience. We made the text shorter and clearer. If unable to control the smoke or fire, the conclusion quickly instructs the pilots to land as soon as possible.

Before and after example showing 65% reduction in wordcount. The photo is from a Teekay Shuttle Tanker which transports a significant part of the North Sea's oil production.

From Flying High to Diving Deep

We believe that even though an operation is complex, it does not mean we must explain it with difficult words and long sentences. This is an important principle regardless of which industry you are in. As an example, Haukeland University Hospital implemented a safe surgery checklist using aviation principles. This reduced complication rates and mortality by up to 42%. [i] TV2 News described it as the best invention since doctors started washing their hands. We customized a set of writing rules and tested them in various industries such as shipping, oil, gas, hospitals, rail, deep sea diving, manufacturing and insurance companies.

In 2014, Teekay Shipping's navigation procedures had just below 49,000 words. They used our method and simplified them down to just above 17,000 words. That was a 65 % reduction, but reducing words was not the goal, the goal was to be concise. This is now in use on nearly 200 vessels.

From Operational to Financial and Legal Risk

Shipping companies have complex requirements from governments, insurance companies and clients such as oil companies. As a consequence, they have a lot of procedures for their operations. At first, shipping companies had concerns about simplification. Would they lose required facts? Would governments, insurance and oil companies approve of simpler text? After seeing our method, oil companies replied that «we know what we like when we see it – and we like this». Insurance companies started running seminars and writing articles to their clients promoting the method[ii]. A diving company avoided costly government restrictions by using the methods[iii].

The most important feedback came from the end users. Seafarers evaluated the new

[i] *Haugen, Bakke, Lovoy, and Softeland. "Preventing Complications: The Preflight Checklist". European Urology Focus 2:1 (2016), 60-62. https://lovoy.info/m/articles/Preventing-Complications_-The-Preflight-Checklist.pdf*

[ii] *Terje Løvøy. "Simplifying Safety Management Systems". Signals Magazine by The North of England Protection and Indemnity Insurance Association. Issue 110 (2018) 6-7. https://lovoy.info/m/articles/Signals-Winter-2017-18_Lovoy.pdf*

[iii] *nternational Marine Contractors Association. "Simplicity Improves Safety". Making Waves. September (2016) 15. https://lovoy.info/m/articles/IMCA-Making-Waves-80-v2.pdf*

text as 70-80% more user-friendly. The results spread from operational tasks to administrative tasks. It also spread to other industries. As an example, today we are testing how to simplify instructions for underwriters in the insurance industry.

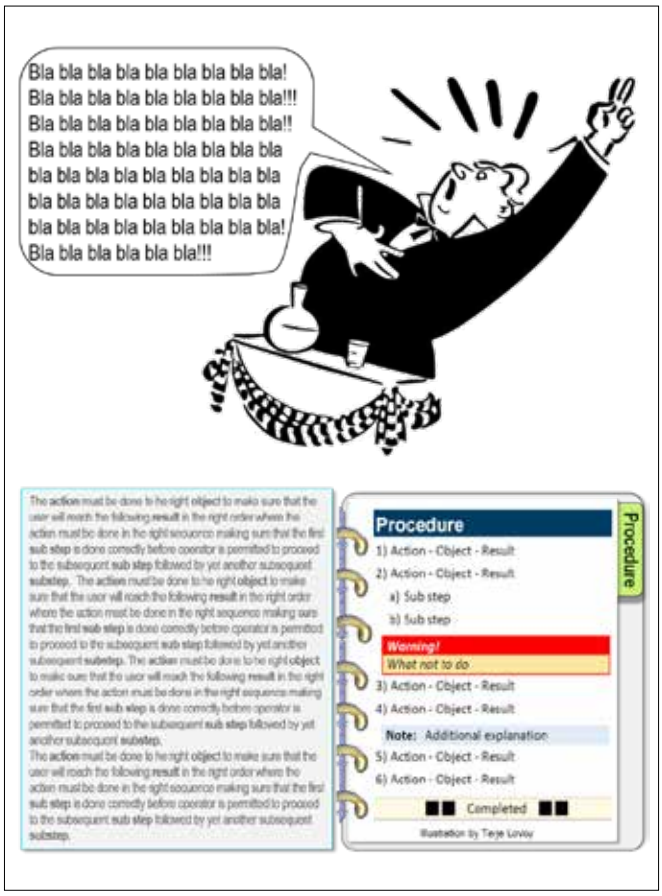
The Lovoy Method

Simplification does not happen by itself – we must design it. To do this we need methods and ways to measure the results. We developed this for writing style, layout and spagetti-like structure.

Writing Style

Writing style is about the words we use and the sentences we form. People are like text, some talk a lot but say very little. We can compare text with math, why write 12/18 when we can write 2/3? Why write «commence» when we can write «start»? We have a plain language dictionary available at www.lovoy.info

One problem is too long sentences. But how long is too long? We found that the average sentence length was 21 words. After training many writers to wash the text we found that they could improve it to 14 words or less per sentence. Passive text was another problem. Unwashed documents had more than 40% passive sentences. Our text washing improved this to more than 95% active text. Active sentences are shorter, you read them faster, understand them better and remember them longer. Passive can be unclear because one sentence can have several meanings.



Complex	Simple
Give consideration to	Consider
During the period of	During
A number of	Some
Give the recognition to	Recognize
Is concerned with	Concerns
Because of the fact that	Since

Layout

We made an easy to use template inspired by NASA research. It has a clear visual layout with notes, cautions and other styles.

Structure

People continuously add information to the management systems, but few have a clear strategy when they do this. This gives a tangled spaghetti like structure, not following logic work flows. In addition, we mix strategy and execution. We write a lot about responsibilities, but responsibility is not a verb – it is not something we can do. This makes the text abstract. It is not what we say that matters, it is what we do. The goal of a management system is to go from words to actions.

Conclusions

Most companies that manage risk can prevent losses if they make their management system text more user-friendly. Overly complex writing style reduces compliance and increases the risk of error. It is possible to train employees to write more user-friendly documents. Our research shows that clear concise text is a crucial part if you want to improve risk management. This principle is content independent, and works for operational, legal or financial risk.