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A Psychological Approach to Safety Behaviour



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§ 1 Introduction

On this occasion, we introduce our 20th Loss Prevention Seminar titled “A Psychological Approach to Safety Behaviour” which was held in Japan from April to June of this year, 2019.

Since first holding our first Loss Prevention Seminar in 2011 in Tokyo, we now hold seminars every spring and autumn in 16 areas throughout Japan. In particular, since 2013, we have been introducing cases related to accidents, their recurrence prevention countermeasures and so forth, which all tie in with ship operational competency.

Almost 70% of all maritime accidents are said to be caused by human error. Along with damage to harbour facilities brought about by strong gusts of wind and tidal currents during docking work, **on examining the root cause, in most cases this was down to inadequate prior inspection and careless mistakes. More than 90% of all maritime accidents are said to be caused by human error.**

Therefore, if we eradicate human errors, logically speaking, we should be able to cut the number of maritime accidents by 90%. However, because everyone is unfortunately susceptible to making mistakes, forgets, and panics etc. it will not be possible to achieve this owing to the 12 human characteristics that come into play.

As with a car accident that may occur suddenly at a crossing, many are caused by individuals, however, in most cases, this is not the case when it comes to maritime accidents. Rather, it is a chain of human errors that leads to an accident, and unless the error chain is broken, as a result, an accident is sure to occur.

Following further analysis of the accident leads to the recognition that anyone is prone to making a mistake, and that the chain of events that led up to the accident needs to be broken via a method (BRM) that will realise this.

This time we invite Mr. Noritsu Tsutsui, who previously worked for the Ministry of Land, Infrastructure and Transport in Japan, (hereinafter, lecturer) to share his thoughts on the psychology behind human error.

§ 2 Introduction of the lecturer, “ Why Psychology is Needed ”

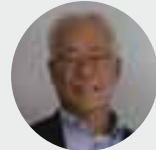
2 - 1 The lecturer

Nobutoshi Tsutsui

Originally from Akashi, Kobe, graduated from Kobe

University (Specialization: Law)

Work experience: Vice-Minister of Land, Infrastructure and Transport, at the Ministry of Land, Infrastructure, Transport and Tourism; Kobe District Transport Bureau; Deputy for Port State Control Affairs; Division Director of Seafarers Labour Standards and License Division (provisional translation). Retired in March, 2019. The lecturer established the position of Psychological Safety Coordinator in KOBE and has been engaged in his role, since.



2 - 2 Why psychology is needed

Although this is a word coined by the lecturer which comes from the famous proverb: “Know yourself as well as your enemy”, this can be interpreted as “Know yourself as well as your mission”, which is the theme this time. This means that you may face difficulties in a variety of contexts, if you do not know yourself and your mission or the personalities and psychology of others and your relationship with them.

The reason the lecturer thought about this and eventually decided to study Psychology was because of the following.



Photo 1

Life jackets Provided by Sanyo Trading Company Limited

As amended in the Seaman and Small Craft Operator Act, the wearing of a life jacket is extended to all “persons engaged in a 1-passenger small fishing vessel (provisional translation)” as per April, 2008.

As Division Director of Seafarers Labour Standards and License Division (provisional translation) at the time, collaborating with JF Hyogo-Gyoren, the lecturer firmly encouraged the fishermen of Hyogo prefecture to wear life jackets.

As an administrative manager, he had explained such ordinances in order encourage people to obey the law. He believed that it was only natural that people follow the law, and that, problems were caused by the people who do not follow the law. However, one day, which was only a few days after a seminar on the wearing of life jackets, unbelievably, there was a fatal accident involving one of the fisherman who attended the seminar. He fell into the water without wearing his life jacket, and consequently died as a result.

The lecturer was extremely shocked. And then realized the following: It is not possible to change another person’s actions by simply quoting the law to them - we cannot enforce people to obey the law, it is not so easy to move people to action. Using the lecture style to try and impose the law on an audience is flawed. This motivated the lecturer to start studying psychology. He believes that the above theme may serve as a foundation and contribute to safety behaviour. It is his hope that anyone reading this will also enjoy the study of psychology.

2 - 3 Quiz

2 - 3 - 1 Leaning Pyramid

In this lecture, the participatory approach was opted for, which will increase learning effectiveness. This method asks that the reader answers and thinks about quizzes and questions and their explanations. Although some of them may be tough in some parts of the text, the lecturer hopes that you will try the quizzes and attempt to answer the questions in 2-3-2. Although the answer can be found in the text, please write down your thoughts as they come to you. A perfect answer is not required here, to the contrary, you may learn something new as a result of making a mistake.

Please refer to the below Leaning Pyramid (Figure 2), which indicates Learning Retention Rates derived from the National Training Laboratories.

According to the Learning Pyramid, which shows Retention Rates, as findings suggest, learning retention rates (effective learning) increase, the more active and independent the learner becomes.

E ffective learning

(Learning Pyramid)

- * Enhanced team activity through group activities
- * Deepen understanding through experience
- * A deep understanding of the surroundings is necessary in order to teach others

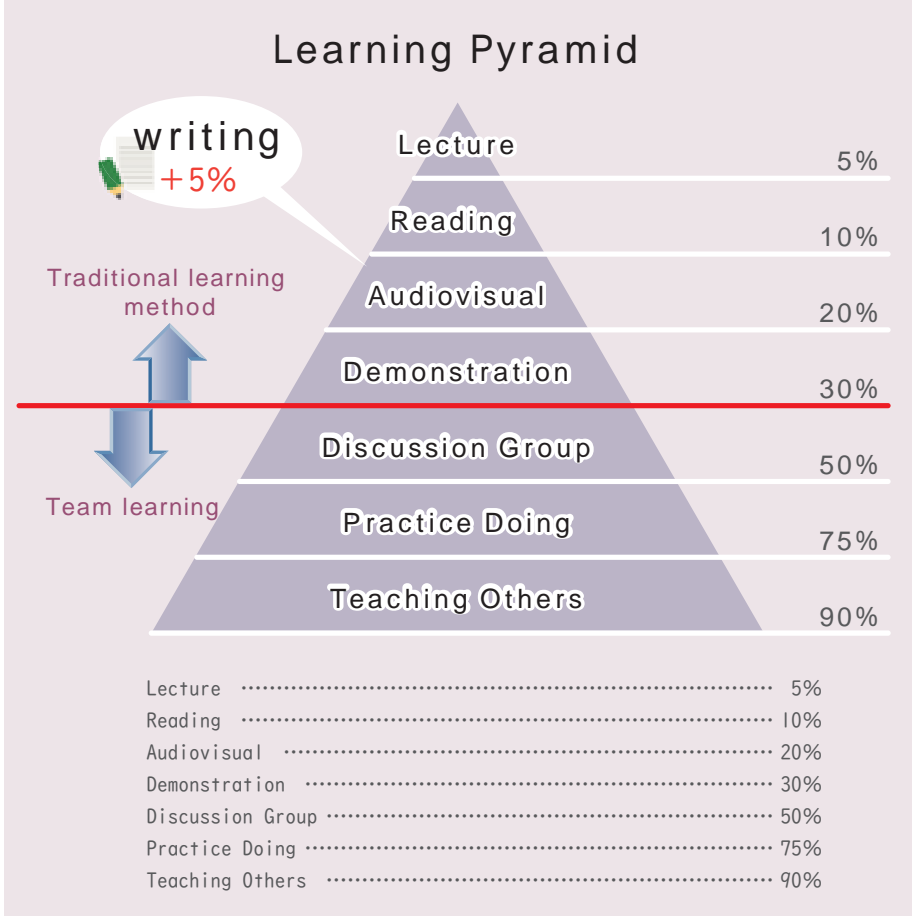


Figure 2 Learning Pyramid

If Writing were between Reading and Audio Visual, the learning retention rate increases by 5%. Please try to write down your thoughts on the Quiz in 2-3-2 before reading through the text.

2 - 3 - 2 Quiz

QUIZ 1 The youth of today

“The youth of today” from an historical perspective. From when did this kind of lament start to become popular? Please write down your own thoughts. This could be around 19XXs, Heisei or the late Showa Era, etc.

QUIZ 2 When was the Industrial Revolution?

The Universe began with a Big Bang around 14 billion years ago. It is said that our galaxy and earth were born approximately 4.6 billion years ago, and that humans appeared around 500 million years ago. It can be further said that humans significantly changed following the industrial revolution, 250 years before. Assuming that the past 4.6 billion years have been compressed into 1 year, when did the industrial revolution begin? Which exact time, day and month did it occur? Although the answer can be automatically calculated using a calculator or PC, please think about it intuitively.

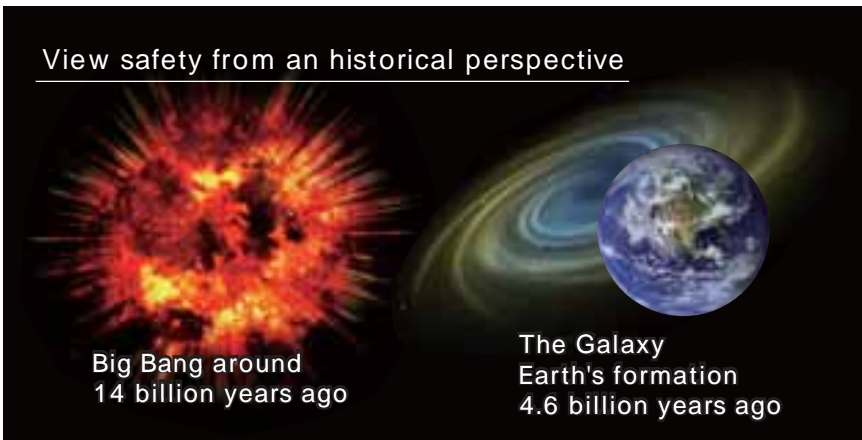


Figure 3 The BigBang and the birth of the earth

QUIZ 3 At an elementary school's sports festival

In the riddle that follows, no one is telling a lie. They are all talking honestly. Please read carefully, referring to the picture shown in Figure 4 while clearly imagining the situation.

At an elementary school's sports festival, parents in the age range of early to late 30s, up to their mid 40s, brothers and sisters in the range of kindergarten to children in their early teens, and grand-parents in the range of mid to late 60s are gathered to cheer on the children at the school.

There is a married couple, both in their 50s, and a lady in her 20s at the sports festival. Obviously, she is of a different generation to the rest of the other visitors. The principal who was patrolling felt obliged to inquire and said "Hello." to the man in his mid 50s.

He said, "Today I am here to see my son's school's sports festival with my wife and daughter. He is a naughty son. Every time he comes back from school, he always has cuts, scrapes and scratches."

He continued to watch the ground with a smile.

Next, the principal talked to the lady in her seemingly early 50s. She said, "Today, I am here to cheer for my son with my husband and daughter. These days, he is very tall and eats a lot. He is a very active son. He is running around wearing a pair of shorts right now. Oops, he's just tripped over again!" She carefully watched the children in the lower grades participating in a race.

Finally, the principal asked the young lady, seemingly a university student, "Are these your parents standing next to you?" She answered "Yes" cheerfully.

Following on from this, when the principal asked "So, do you have a brother who is much younger than you?", the daughter suddenly ran her hands through her long hair and stopped answering back. The young lady kept looking up at the sky for a while. Then, with a strained voice and looking into the distance, she said "I do not have a younger brother."



Figure 4 At an elementary school's sports festival

What is the situation here? The question is: What is this parent-child relationship?

QUIZ 4 What is Safety?

What is "safety"? Please take a minute to think about it and then jot down your thoughts. Then, please choose what you consider to be the correct definition from one of the four choices listed below. (Select the answer intuitively, without looking it up on your PC or smartphone.)

As an international standard, harm is to be entirely eliminated from the scope of activities.

As an international and domestic standard, absolute safety does not exist. A specified activity and its working environment are to be soundly designed with safety in mind.

As an international safety standard, it is freedom from risk which is not acceptable.

As a domestic standard, those engaged in safety and those requiring safety can maintain an environment whereby they can enjoy a sense of security.

QUIZ 5 How many risks are there?

Suggests that there are five risks in the activity field in Figure 5 Risk (1). In order to secure safety, the situation in the below Figure 6 Risk (2) was created by carrying out the following 4 measures applying these 5 risks. How many risks are there in this situation?

Eliminated	Those removed from the activity field
Reduced	Isolated

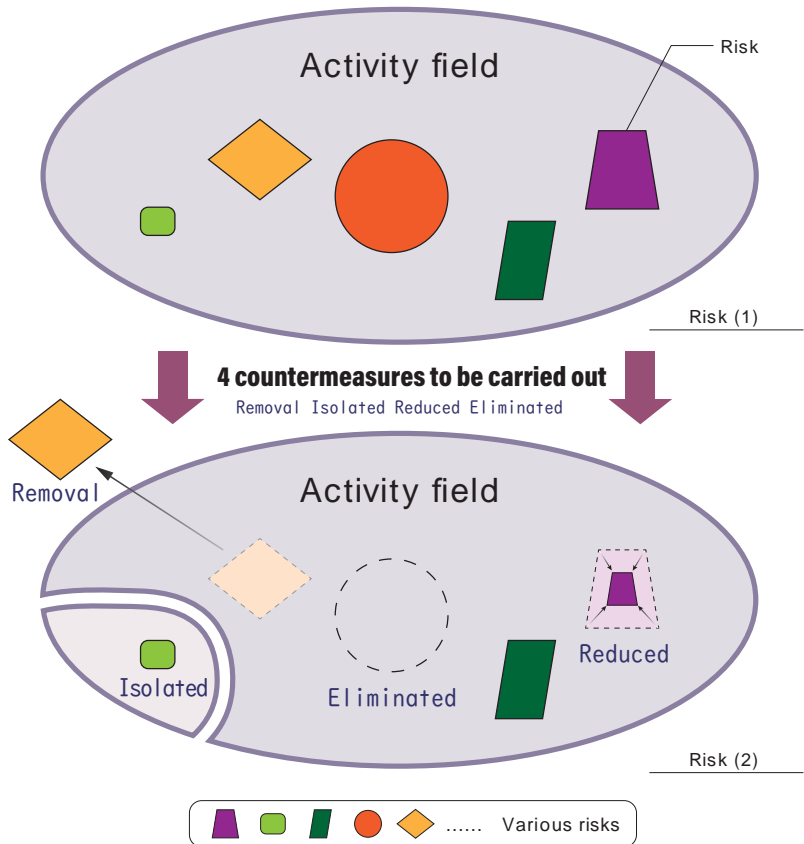


Figure 5 Risk(1) Figure 6 Risk(2)

QUIZ

6

What is a sense of security?

Similar to the above , What is "sense of security"? Please choose what you consider to be the correct definition from one of the four choices listed below.

As a domestic standard, those engaged in safety and those requiring safety can maintain an environment whereby they can enjoy being safe.

An international and domestic standard does not exist.

International standard; the securing of trust based on risk communication.

An international and domestic standard : The products or services have been approved to satisfy safety standards set by an appropriate institute, and a safety declaration has been issued.

QUIZ

7

Why is there a need for "safety" and "a sense of security" ?

Please take a minute to think about it and then jot down your thoughts.

QUIZ 8 Effective control

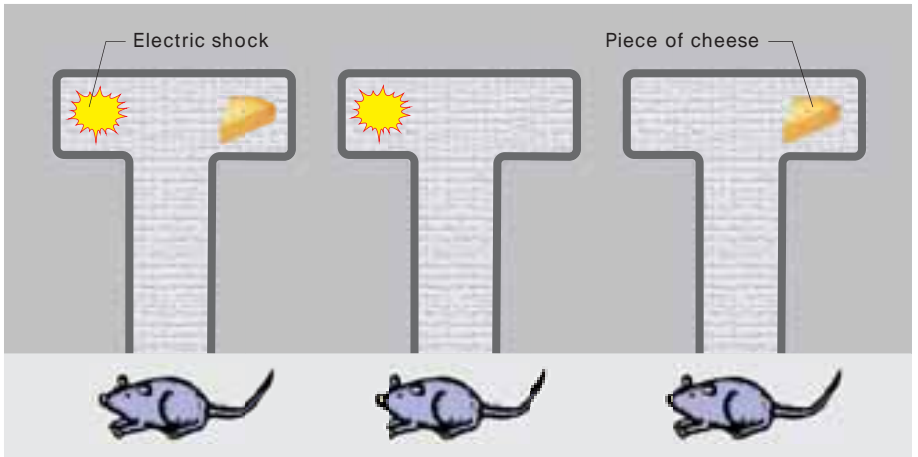


Figure 7 E ective Control

A mouse approaches a T-junction. Now, we want to make the mouse always turn right at the end of the T-junction. This is why there is an electric shock on the left side and a piece of cheese on the right. Which is the most effective of the three in Figure 7 that will always make the mouse turn right?