§ 5　What is the di erence between safety and a sense of security?

What is Safety?　Definition

ANSWER

> Quiz 4 Definition of safety: 3. As an international standard, it was said that,　**" There is no freedom from unacceptable risk".**

In 1990, the International Basic Safety Standards 1st Edition (ISO/IEC GUIDE 51:1990　defines that "Quality is not a synonym for safety and consequently the respective roles of quality and of safety should not be confused." Thus, "there can be no absolute safety." It was assumed that safety was secured as long as the quality was improved until then, but the actual number of accidents did not decrease at all. As psychology and human errors were studied, safety was defined as "There is no freedom from unacceptable risk."

Later, in 2014 (ISO/IEC GUIDE 51:2014, it was redefined as "freedom from risk which is not tolerable". Original citations below:

　　　　ISO/IEC GUIDE 51　　1990 freedom from unacceptable risk
　　　　ISO/IEC GUIDE 51　　2014 freedom from risk which is not tolerable

The following NOTE was added when it was redefined in 2014:

　　NOTE :　For the purposes of this Guide, the terms" acceptable risk" and
　　　　　　" tolerable risk" are considered to be synonymous.　Tolerable
　　　　　　risk; level of risk which is accepted in a given context based on
　　　　　　the current values of society.

 "It is defined as a standardised level of risk which is accepted in a given context based

on the current values of society." This may seem a little complicated, so put simply, rather than it being a standardised level of risk, it can be considered on a case-by-case basis and depends on the time and place in which it occurred.

A Model of Safety as an International Standard

Question 5) How many risks are there? That is, after the risks in the activity field have been either erased, eliminated, isolated or reduced, how many risks would still remain?
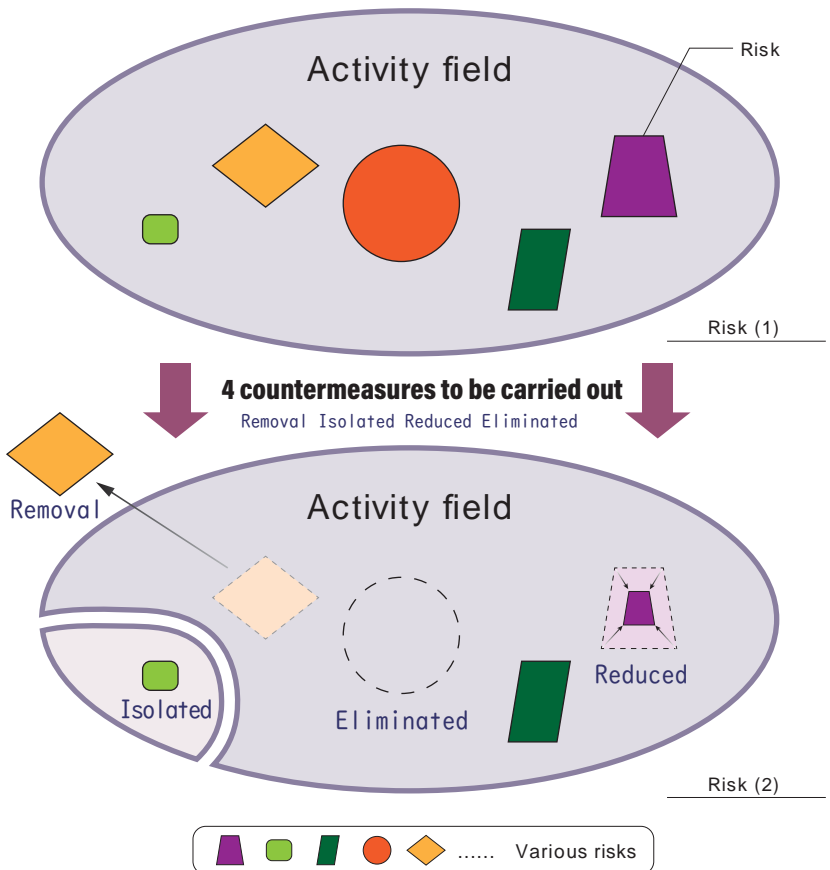

Figure 31 Risk management

ANSWER

The answer is "we do not know (yet)", because there is the **" Unknown risk"** , for instance, it may be the same colour as the activity field, it may be too small, it may is hidden behind a current risk and so on.

Unknown risk

Removal

Activity field

Isolated

Eliminated
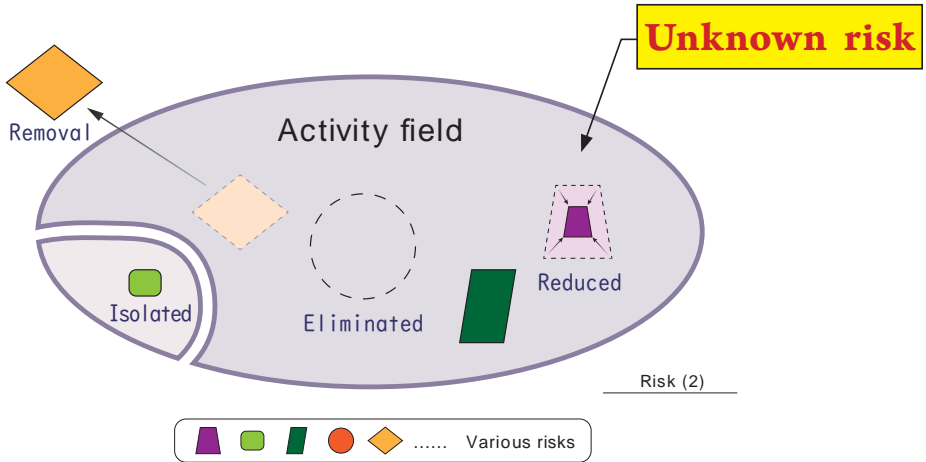
Reduced

Risk (2)

...... Various risks

Figure 32 Unknown risk

In Figure 32, there are four visible risks including the eliminated risk from the activity field and there are three risks among the four in the activity field.

However, there is a possibility of "Unknown risks" which are yet to appear in the activity field. This may bring about a new risk if we continue to ignore it. Thus, "we do not know (yet)" is the correct answer. Actually we consider ourselves to be "safe", despite such circumstances.

The words "Unknown area" were used before now. This term is often used in psychology and it is clearly defined in the Johari Window. The Johari Window consists of four window-panes: Known to self,   Not known to self,   Known to others and   Not known to others. Figure 33 illustrates this. Each respective pane is referred to as, the Open area, Blind spot, Hidden area and Unknown area. Unknown means that no one knows.

Johari Window

Johari Window

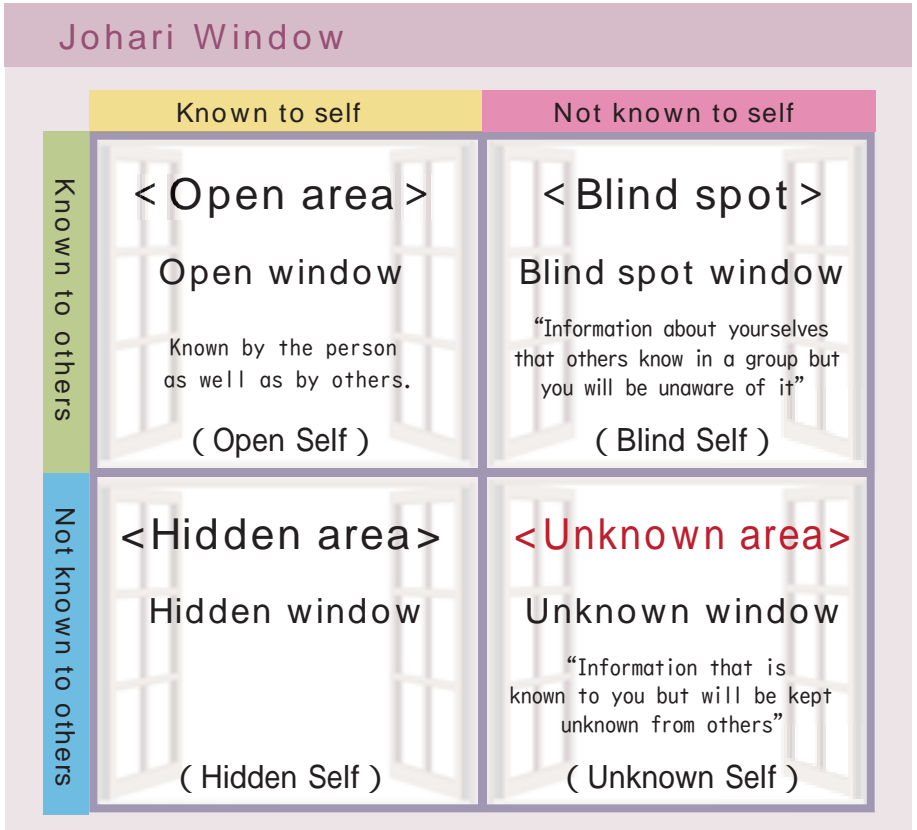|	Known to self	Not known to self
Known to others	**Open area** Open window Known by the person as well as by others. Open Self	**Blind spot** Blind spot window "Information about yourselves that others know in a group but you will be unaware of it" Blind Self
Not known to others	**< Hidden area>** Hidden window Hidden Self	**< Unknown area>** Unknown window "Information that is known to you but will be kept unknown from others" Unknown Self

Figure 33 Johari Window (1)

A safety measure requirement would be to enlarge the Open area. In other words, the Open area specifies that all members within the range of activity are equally aware. It is necessary to expand the area in order to heighten safety. We need to turn it into an Open area for the team so as to narrow the Blind spot (things you do not know, but others do know) so that we may learn from their knowledge and experience.

Also, in the Hidden area, which are the things you know but others may not know, is to be opened in order to make the other blind spots public. Then, the Open area will be expanded, which will in turn bring about improved safety, eventually.

As a result, the Unknown area narrows (Please see Figures 33 and 34). Remarks: In order to carry this out successfully, it will require cooperation through team play and team work. This can be applied to the concept of Bridge Resource Management (BRM).
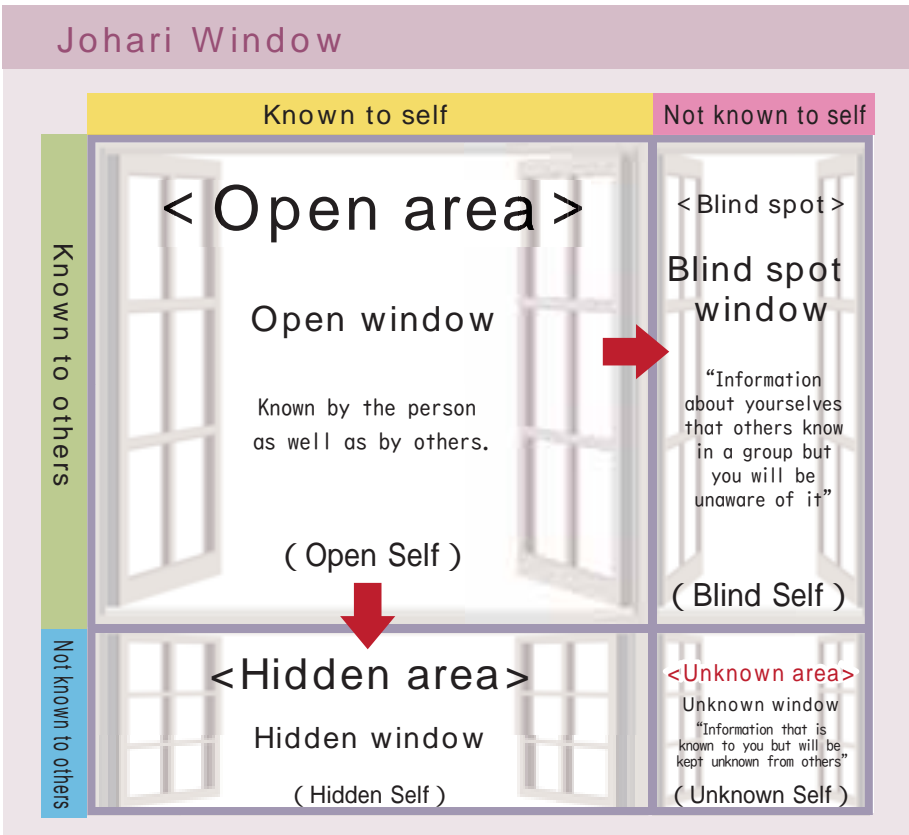
Johari Window

Figure 34 Johari Window (2)

Three Supporting Factors
(From "Thinking Safety", Loss Prevention Bulletin No. 35

Let's take a loser look at the Three Supporting Factors of safety.

Three Supporting Factors

- Carrying out of method which was developed by science and technology
- Operators develop the system

Technicians

- How science should be utilized Atomic energy⇔Atomic bomb

Technology

- Principles of nature, physics etc.

Science

Science serves as a foundation that supports safety. This is reproducible in the field of science which is based on the principles of nature and physics. In the maritime world, this includes physics.

Technology features on top of this. Technology can be defined as the appliance of science. Should we be using nuclear power as a source of energy or as a lethal weapon? This is the science of how to use technology.

A large number of technicians including crew depend on it. The work they do depends on science and technology and they are constantly learning about it.
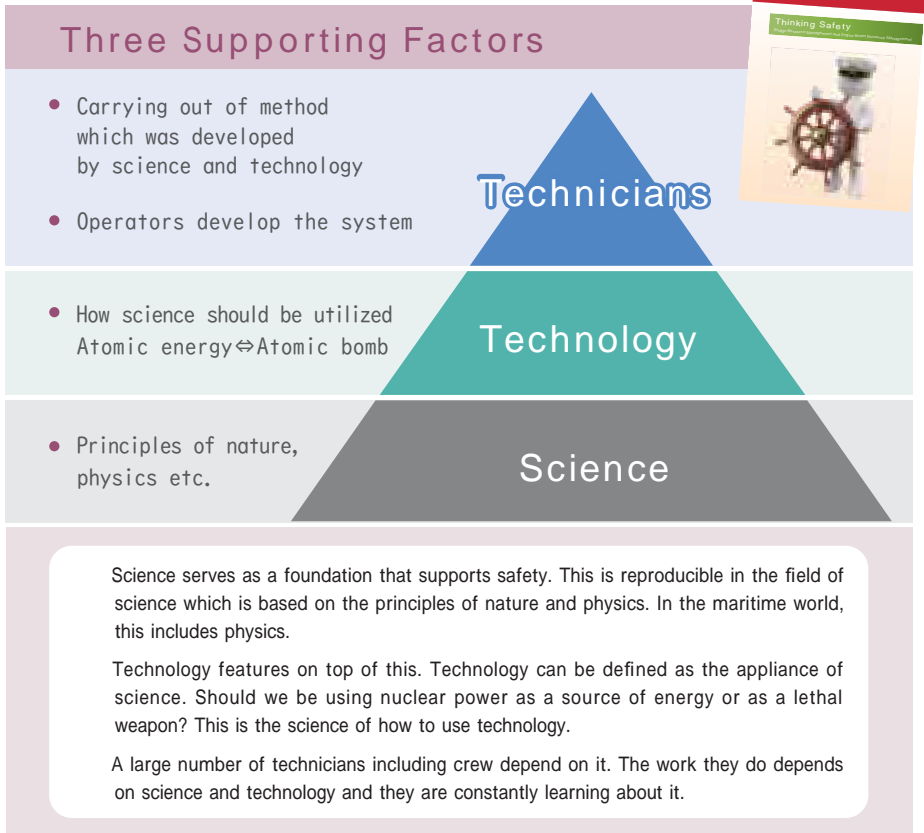
Figure 35 Three Supporting Factors

Technicians develop and operate the system, however, science and technology are also developing at the same time. These technicians must always be on the lookout for problems related to awareness and cognition, such as those mentioned above. Therefore, we need to assume that human errors will occur. We must remember that as long as there are technicians at the top of the system, no matter how much science and technology develops, that human error will always be present.

A Sense of Security Definition

ANSWER

Question 6) The answer to the question, "What is a sense of security?" was... **An international and domestic standard do not exist.** There is no one specific definition for "safety".

According to the Koujien Japanese dictionary, it is defined as below. It is seemingly a literal answer.

"There is no fear nor anxiety, but a peaceful mind (provisional translation)"

Although the following may be somewhat dated information, Masaru Kitano (Professor of Meiji University at that time) referred to a sense of security in the following way during a Nikkei BP interview in 2009. I believe that this definition will aid us in understanding our relationship with safety clearly.

Professor, Masaru Kitano commented: "Sense of security is a subjective fact and one whereby the person convinces oneself of that fact" (provisional translation)

We have been discussing both concepts regarding Safety and a Sense of Security. Is the reader aware of the fact that they are similar but then not exacly the same?

Safety can be said to be a specific and objective phenomenon. It is uniform in the way it is observed. It may be universally reproduced. In any era, safety from a technical standpoint does not change, though it requires an engineering approach. An important point to remember is that safety can be thought of something that has happened in the past. When talking about accidents that occured in the past, we say "we never want to

cause this to happen again". In other words, we tend to think of it in the past tense, and act on this accordingly.

On the other hand, as mentioned above, a Sense of Security is abstract as it is a feeling in so many words. These are subjective and non-reproducible.   We may say something like, "Wait a minute! We could rest easy until a while ago." A Sense of Security will differ depending on the individual. In addition, contrary to an engineering approach for Safety, it requires more of a psychological approach. A Sense of Security can be said to be in the present progressive   continuous   form, because this is a thought process between the present and the future.

Similar but not the same:
Safety and Sense of Security

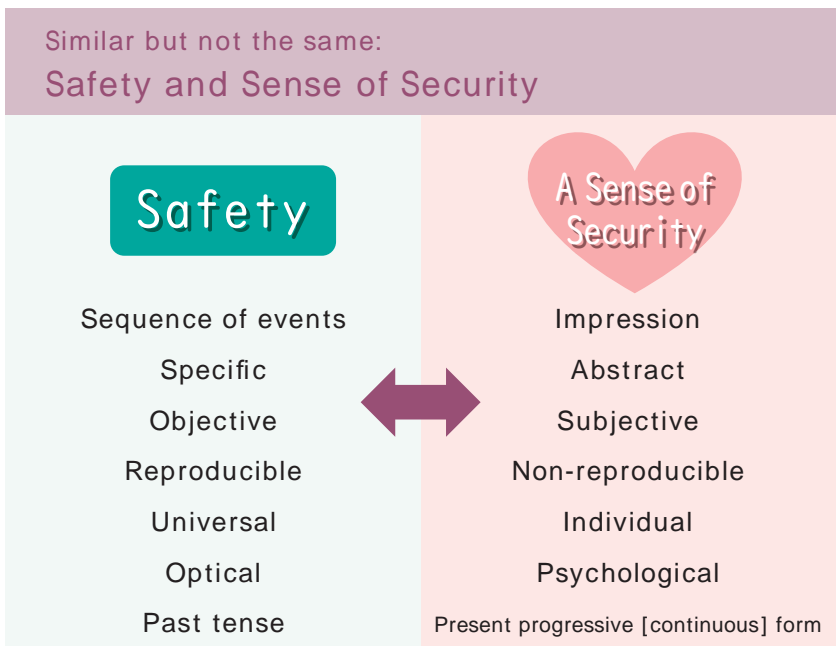| Safety	A Sense of Security
Sequence of events	Impression
Specific	Abstract
Objective	Subjective
Reproducible	Non-reproducible
Universal	Individual
Optical	Psychological
Past tense	Present progressive [continuous] form

Figure 36 A comparison of Safety and a Sense of Security

So, how do we connect Safety with a Sense of Security? If you place Sense of Security,

which is heart-shaped, personal and present progressive continuous in form, on top of Safety, consisting of a sequence of events in the past (including risks acceptable according to Science, Technology and Technicians), it will topple over, meaning that the Sense of Security is weak and unstable.
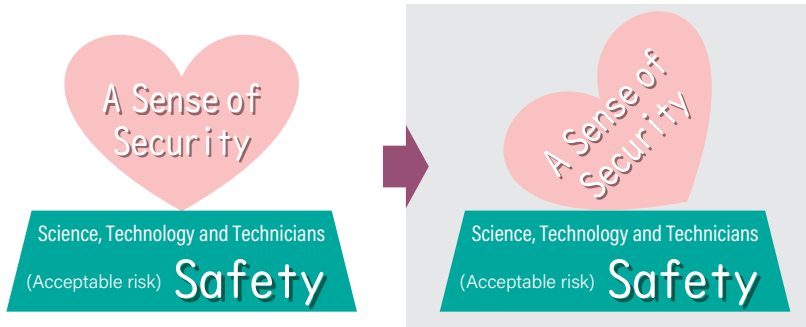
Figure 37 Sense of Security above Safety

Thus, we need to place a Wedge on either side to hold it firmly in place. Then, we must think about what these wedges are made of. According to Professor Kitano, one wedge should be trust based on communication,and the other should be Risk Communication, connecting Safety with a Sense of Security.

- **Trust** Based on Communication (as defined by Prof. Masaru Kitano)
- **Risk Communication** Connects Safety with a Sense of Security (as defined by Prof. Masaru Kitano)

Figure 38 Connecting Safety and Sense of Security

Risk Communication (From Safety to Sense of Security)

What connects Safety and a Sense of Security is trust based on communication. Thus, we are now going to look closer at "Risk Communication".

Regarding the structure of risk communication, the first level is Safety which is formed by science, technology and technicians, the next level consists of risk assessment and risk management, then on top of that comes risk communication supporting the Sense of Security in the shape of two "wedges" which mean trust.
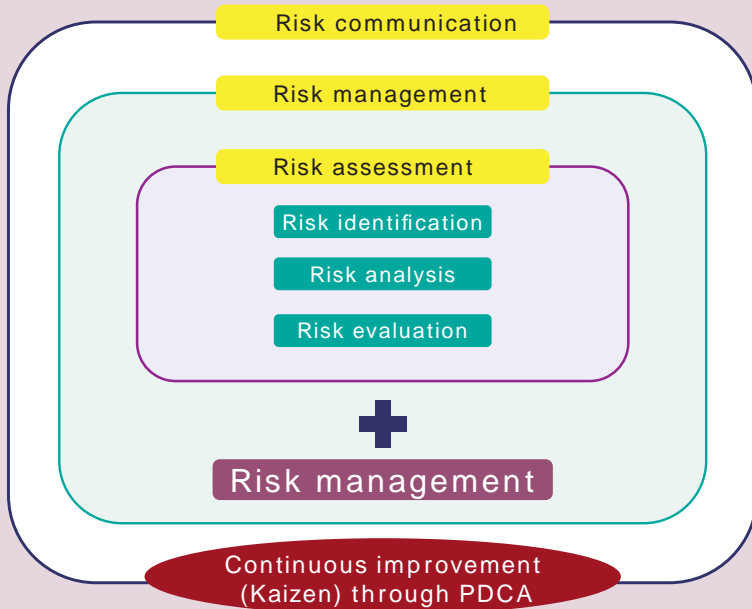

Figure 39 Risk Communication connecting

Vice-president Nagamura Yoichi of Suzuka University of Medical Science, mentioned that "Risk Communication is not sufficient in Japan".

Risk Communication (From Hitachi Solutions, Ltd. homepage)

Risk analysis: there are three different process types of Risk Analysis which help to minimize risk.

Risk communication

Risk management

Risk assessment

Risk identification

Risk analysis

Risk evaluation

Risk management

Continuous improvement (Kaizen) through PDCA

Risk assessment

Firstly, it is necessary to discover every risk factor and to identify each as a risk. Then, those identified risks shall be calculated to yield the degree of risk using two axis: Risk Probability and Influence Rate when a risk becomes apparent.

Risk management

Next, manage the risk including the setting of safety rules.

Risk communication

Evaluation and rules of Risk Communication are to be communicated to related parties. It seems that this is not well recognised in Japan, as someone mentioned "I did not know this before", even during this seminar.

Figure 40 Risk communication

As was explained in 5-2 A Model of Safety as an International Standard, it is important

to expand the Open area as much as possible with communication, so as to minimize the Unknown area.

In Wikipedia, it tells us "topic that does not have its own page to a section of a page on the subject", however, the following can be said to be examples of Risk Communication, if we look them up.

Warnings in instruction manuals for electronic products etc. are a good form of communication.

A number of pages contain precautions on how to use the products safely.

Since the derailment accident on the Fukuchiyama Line, West Japan Railway Company now issues a safety news monthly bulletin at the station.

At the supermarket Max Value: each attendant's monthly goal is written on his/ hers employee name tag. One day, the lecturer noticed a name tag that had written on it, "Goal of the month" for an employee in charge of the frozen products section in a supermaket.

"Look out for slippery areas caused by condensation so that customers do not slip over."

The lecturer was relieved and felt piece of mind. This would also be a form of risk communication.

Kobe City, where the lecturer worked, posts a Tsunami Disaster Prevention Map on a bulletin board. This is also a very good example of risk communication.

We can say that education and training that are stipulated by laws and treaties and seminars like this are good examples of risk communication.

Modern day risk communication takes the form of a homepage.

Although this is communication from the PR department, the lecturer looked up the words "Sense of Security" on the Japan P&I Club homepage. There were more than 21 hits. On the other hand, for the city of Kobe there were 240 million!

Why then is the sense of security so over used? Despite the reality that the true meaning is yet to be fully understood. It seems that it is not good to overuse the word Sense of Security, especially for those who have "Safety" at the heart of their main service, particularly the transportation sector. Because, as mentioned earlier, the word Sense of Security is the way customers feel. There are many TV commercials that put "Safety and Sense of Security" together. But, because they are similar but not the same, each meaning of the concept should be understood separately.

Why is there a need to feel "safe" and "secure"?

In Quiz 7, the participants thought about why there is a need to feel "safe" and "secure". While these words are often heard, many believe that "safe" and "secure" relates to:

Oneself, ones family members, ones company, or because ones boss says so...

Mr. Tsutsui informs us that it is "necessary for the maintenance of a sustainable society". The concept of a Sustainable Society was proposed at the Davos Forum in 1998. This led to a new concept named Sustainable Development Goals (SDGs) - international goals to be achieved between 2016 and 2030, referred to as "The 2030 Agenda for Sustainable Development (the 2030 Agenda)" that was adopted by the United Nations summit in 2015.

For details, please refer to the homepage below from the Ministry of Foreign Affairs of Japan (MOFA).

https://www.mofa.go.jp/mofaj/gaiko/oda/sdgs/pdf/about_sdgs_summary.pdf

For the maritime industry in particular, the following five goals have been set: 8, 9, 12, 13, and 14. It will be much appreciated if your companies and organizations, especially those that are global, build target management, production management, process management and a corporate culture with these SDGs in mind.

Goal 8　Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9　Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal12　Ensure sustainable consumption and production patterns

Goal13　(Climate Action)

Goal14　(Life Below Water)

Figure 41 SDGs