



Effectiveness of Training on Collision Regulations of Boat Captain: Modified Basic Safety Training Course with Typhoon Awareness with Maritime Industry Authority Region V1

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ABSTRACT

Safety of life at sea is very important aspect in terms of navigation. The purpose of the study is to determine the level of awareness of the Boat Captains in terms of sounds and lights signal and lights and shapes on Collision Regulations by using the validated questionnaires that the author was provided based on the International Collision Regulations for Preventing Collision at Sea. The study was conducted to the different areas of Region V1 namely: Boracay Island Malay, Aklan, Estancia, Roxas City Capiz and Guimaras Province. The study was conducted last November 2018 to November 2019. Participants of the Modified Basic Safety Training Course with Typhoon Awareness and Collision Regulations conducted by the Maritime Industry Authority, Region VI Iloilo City and Iloilo State College of Fisheries, were utilized as respondents of the study. The respondents were composed of One Hundred Eighty boat captains through stratified sampling using the Slovin's formula. A quali-quantitative research design was employed in the study. Open ended validated questionnaires were administered to the selected respondent. Focus group discussion was conducted to get reliable data from their personal experiences at sea. Answered questionnaires were gathered, tabulated, and analyzed using appropriate statistical tool. The results of the study in the sounds and lights signals the mean of pretest is 3.05 it is knowledgeable while on posttest is 4.41 it means more knowledgeable and level of awareness in terms of lights and shapes the mean of pretest is 5.86 it is knowledgeable and the mean of posttest is 7.88 more knowledgeable. The significant value of the level of awareness in terms of sounds and lights signals is 0.437 while in terms of lights and shapes the significant value is 0.953. There is a significant difference between the level of awareness of boat captains in term of sounds and lights signal and lights and shapes before and after the Modified Basic Safety Training with Typhoon Awareness and Collision Regulations was conducted. The Collision Regulations training is really need of the boat captain in their profession. The MARINA must provide a Memorandum Circular pertaining to the Boat Captains that they must have a Certificate on the "International Collision Regulations Course" so that they are aware about the Rules of the Road and they can apply on their profession and can minimize or prevent whatever accident happen onboard.

1. Introduction or Problem.

Basic safety training offered maritime students' as well as professionals the different trainings on personal survival technique, disaster management and others while disaster preparedness is a process of ensuring that an organization has complied with the prevention measures. It is assumed as a state of readiness to contain the effects of a forecasted disastrous event to

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minimize loss of life, injury and damage property. It is extensively defined as a way to provide rescue, relief, rehabilitation and other services in the aftermath of the disaster. It entails the capability and resources to continue to sustain its essential functions without being overwhelmed by the demand placed on them, first and immediate response – emergency preparedness. Training is not a “recreational” luxury to be implemented when times are good, but a continuous effort that is even more valuable when times are rough. Proper planning of disaster awareness and disaster preparedness activities in isolation from people’s daily lives and everyday concerns will rarely succeed. This is because people’s interest in disaster preparedness fades if it has been a long time between disaster events. Typhoon affect the natural environment and cause harm to trees and other vegetation, including crops that communities may rely on for sustenance or trade or both. In addition, these typhoons do not only destroy the agricultural and industrial properties but also killed thousands of lives. Equally, the Philippines is a nation surrounded by water. In so much so, the nation sees many water-related accidents and disasters on a yearly basis. Literally, thousands of people have been killed by ferry and boating accidents in the Philippines. Due to the fact our nation consists of 7,563 islands, and many are not able to afford air travel or they are located too remote to an airport facility, ferry boats are the predominant mode for national travel. Likewise, bad weather, especially during typhoon season, poor maintenance, overloading of vessels – especially during the Christmas season as families return to their villages for reunions – and lax enforcement of regulations has brought many tragedies. Natural disaster caused by eliminate change are among the greatest threats faced by the world, especially the developing countries.

COLREGS were adopted as a convention of the International Maritime Organisation in 1972 but they have been amended several times since. The Rules are divided into five parts A-E covering: General Rules (A) Steering and Sailing (B). One of the most important innovations in the 1972 COLREG was the recognition given to traffic separation schemes - Rule 10 gives guidance in determining safe speed, the risk of collision and the conduct of vessels operating in or near traffic separation schemes.

Basic safety training offered maritime students’ as well as professionals the different trainings on personal survival technique, disaster management and others while disaster preparedness is a process of ensuring that an organization has complied with the prevention measures. It is assumed as a state of readiness to contain the effects of a forecasted disastrous event to minimize loss of life, injury and damage property. It is extensively defined as a way to provide rescue, relief, rehabilitation and other services in the aftermath of the disaster. It entails the capability and resources to continue to sustain its essential functions without being overwhelmed by the demand placed on them, first and immediate response – emergency preparedness. Training is not a “recreational” luxury to be implemented when times are good, but a continuous effort that is even more valuable when times are rough. Proper planning of disaster awareness and disaster preparedness activities in isolation from people’s daily lives and everyday concerns will rarely succeed.

This is because people’s interest in disaster preparedness fades if it has been a long time between disaster events. Therefore, disaster awareness activities will have the greatest impact when they are integrated into broader program strategies that seek to alleviate everyday community problems and hazards such as basic health care water scarcity and potability, sanitation concerns such as garbage collection, employment and community based first aid. While it is a fact that a community may be exposed to various natural and technological hazards, oftentimes, the reality of the situation is that people may not see the practicality of disaster preparedness suggestions and messages when they are trying to provide for themselves and their families in difficult and harsh economic environments. Study suggested approaches to disaster emergency relief, such as empowering the communities to prepare for natural disasters. Typhoon affect the natural environment and cause harm to trees and other vegetation, including crops that communities may rely on for sustenance or trade or both. In addition, these typhoons do not only destroy the agricultural and industrial properties but also killed thousands of lives [8]. Equally, the Philippines is a nation surrounded by water. In so much so, the nation sees many water-related accidents and disasters on a yearly basis. Literally, thousands of people have been killed by ferry and boating accidents in the Philippines. Due to the fact our nation consists of 7100 islands, and many are not able to afford air travel or they are located too remote to an airport facility, ferry boats are the predominant mode for national travel. Likewise, bad weather, especially during typhoon season, poor maintenance, overloading of vessels – especially during the Christmas season as families return to their villages for reunions – and lax enforcement of regulations has brought many tragedies. Natural disaster caused by eliminate change are among the greatest threats faced by the world, especially the developing countries. She furthered mentioned that climate change and disaster risks are the defining issues of our time, their increasing trend driven by economic growth brings to fore a human development issue and a human security concern that calls for urgent action. Over the last couple decades, the number of ferry accidents has reached catastrophic levels. December 1987: In the world’s worst peacetime shipping disaster, The Dona Paz ferry collides with an oil tanker off Mindoro island near Manila, leaving more than 4,000 dead; October 1988: The Dona Marilyn ferry sinks off the central island of Leyte, leaving more than 250 dead; December 1994: A Singaporean freighter hits the ferry Cebu City in Manila Bay, leaving about people 140 dead; September 1998: The Princess of the Orient ferry sinks off Batangas City south of Manila. About 150 die; April 2000: The cargo vessel Anahanda, overloaded with passengers, sinks off the southern island of Jolo. Approximately 100 people die; February 2004: Islamist militants firebomb the Superferry 14 near Manila Bay, leaving 116 dead; June 2008: The Princess of the Stars ferry sails into a typhoon and tips over near the coast of Sibuyan island. close to 800 people are killed; November 2008: Don Dexter Kathleen, small wooden-hulled ferry, capsizes in freak winds off the central island of Masbate, leaving 42 dead; December 2008: The ferry Maejan capsizes off the northern Philippines, leaving 30 dead; May 2009: The Wooden-hulled

Commander 6 cracks open and sinks just south of Manila, leaving 12 dead; September 6, 2009: Nine people killed after the Superferry 9 tilts sharply and sinks near the city of Zamboanga and last December 24, 2009: Twenty seven people are missing as the Catalyn B with 73 people on board collides with a fishing vessel at the opening of Manila Bay. Academy and the LPU Maritime Training Center. The researcher was prompted to conduct the study so that community may understand about the hazards and risks to which they are exposed. This will improve preparedness and help citizens respond to local early warnings.

2. Objectives.

1. What is the training's effectiveness on the Boat Captains in sound and light signals and light and shape in Collision Regulations before the training conducted?
2. What is the training's effectiveness on the Boat Captains in sound and light signals and light and shape in Collision Regulations after the training conducted?
3. Is there a significant difference in the Boat Captains' effectiveness in sound and light signals and light and shape before and after the training conducted?

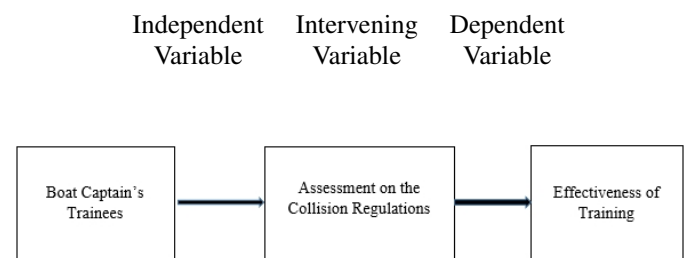
3. Theoretical Framework.

When it comes to safe behavior, Zohar and Luria (2003) identify a paradox in that individuals indulge in careless behavior even though they know that it might have adverse consequences. They explain this by advocating that human behavior is guided by the principle of maximizing expected utility. The perception of this utility is in turn distorted by a melioration bias, meaning that people tend to overestimate benefits of short-term results, and a rare-event bias which means that people generally underestimate the assessed likelihood of being adversely affected by rare events. As a result of these cognitive mechanisms, Zohar and Luria (2003) argue that individuals overestimate the short term costs of acting safely, such as time loss, increased efforts and personal discomfort, to an extent where it outweighs the likelihood of being struck by the negative consequences that risky behavior might have. Consequently the perceived equilibrium of maximized utility is placed at a position that, at a first glance, facilitates the procedures that the individual takes part in. Unfortunately the same equilibrium will, from a broader perspective, lead to an increased rate of injuries, accidents and ultimately disasters. To make matters worse, Zohar and Luria state that the above mentioned phenomenon is augmented by the fact that safe behavior leads to non-events while unsafe behavior gives immediate feedback in the form of tangible benefits. This, in turn, results in a reinforcement based learning that leads the individual towards unsafe behavior patterns. One example of such a theory, frequently applied to shipping (Stenmark, 2000), is that of Perrow's (1999) normal accidents. Perrow sees a problem with highly complex organizations as a great number of interconnected components has a tendency to create unforeseeable chains of events. He goes on to subdivide complexity into two dimensions.

Another theory that deals with catastrophic breakdowns in organizational activities refers to such occurrences as man-made disasters (Pidgeon & O'Leary, 2000). Just as in the theory of Perrow's normal accidents the unpredictable nature of complex socio-technical systems is acknowledged but this model uses sociological concepts in order to explain how this leads to undesired events. According to Pidgeon and O'Leary, organizational members share perceptions and assumptions of the system they are a part of, the hazards it may be subjected to and the appropriate actions to deal with such hazards. These perceptions and assumptions may over time be deflected away from reality to an extent where the organization is no longer capable of managing the situations in which it might find itself. Financial risk (Miu *et al.*, 2010; Terzic *et al.*, 2015), health risk (Vellojin, 2011), toxic substance risk (Aschberger *et al.*, 2010; Tong *et al.*, 2002), natural disaster risk (Apel *et al.*, 2004), underground storage risk (Deel *et al.*, 2007), air transport safety risk (Harkleroad *et al.*, 2013), marine transport safety risk (Goerlandt, 2015), food safety risk (Stirling *et al.*, 2006), emerging technology safety risk (Som *et al.*, 2012), drinking water safety (Roser *et al.*, 2015), buildings safety (Bukowski, 2006) and major industrial accident risk (Ale *et al.*, 2014; Grote, 2012), are among the many subjects, mentioned in scientific literature about risk assessment.

4. Conceptual Framework.

The paradigm of the study shows the independent variable which are the Boat Captain's Trainees, the intervening variable which is the assessment on the collision regulations and the dependent variable is the effectiveness of training.



Safety of life at sea is very important in terms of navigation. Navigation is transferring a passengers and cargoes from one place to another in a safest and shortest distance. Now a days with the changing of our environmental climate. Many accident/incident happened at sea due to strong current, big waves even theirs no signal that our navigators must be always prepared for that. That's why the purpose of conducting this study is to determine the level of awareness of our boat captains in terms of sound and light signal and light and shapes in Region VI and Guimaras Province participants and to give knowledge, enhanced and trained on how to prevent accident/incident happen onboard. Life is so very important for everything else in this world. That's why we give importance about the training on collision regulations for the safety of the crew, passengers and cargoes onboard.

5. Methods.

Research Design.

Descriptive a qualitative/quantitative research design.

Locale/Study Site.

Selected areas in Region VI namely: Boracay Island Malay, Aklan, Estancia, Roxas City Capiz and Guimaras Province.

Respondents.

Boat Captains in selected areas in Region VI namely: Boracay Island Malay, Aklan, Estancia, Roxas City Capiz and Guimaras Province.

Sampling Techniques.

Stratified sampling using Slovin's formula.

Research Instrument.

Validated Survey Questionnaires in sounds and light signals and light and shapes based on international collision regulations 1972.

Data Gathering Procedure.

Make a proposal regarding the MBSTC training with Typhoon Awareness to be approved by the President of the Administration then after the approval sending an invitation letter to the MARINA for the resource speaker and after the approval make a courtesy call to the Mayor of every selected areas to inform about the training to be conducted after the approval of the Mayor coordinate with the president of the organization and met the boat owners to inform the training to be conducted by the MARINA and ISCOF so that they will inform their crew to participate in that said training.

Data Analysis.

Data gathered will be recorded and subject to statistical analysis.

The Level of awareness in sounds and lights signals result was presented using the following:

Scale	Description
5	5.00 - 4.21 Very Much Knowledgeable
4	4.20 - 3.41 Much Knowledgeable
3	3.40 - 2.61 Knowledgeable
2	2.60 - 1.81 Less Knowledgeable
1	1.80 - 1.00 Very Less Knowledgeable

The Level of awareness in lights and shapes result was presented using the following:

Scale	Description
5	8 - 10 Very Much Knowledgeable
4	6 - 7.99 Much Knowledgeable
3	4 - 5.99 Knowledgeable
2	2 - 3.99 Less Knowledgeable
1	0 - 1.99 Very Less Knowledgeable

6. Development (application and results).

Findings with analysis and interpretation

The study aimed to know the effectiveness of Boat Captains in Region VI. It also assessed the experiences of the Boat Captains in maneuvering and handling the ship in terms of bad weather. The response for each questions and its findings are presented in the succeeding table.

Table 1 result of the pretest and posttest on sound and light signals:

Mean	Descriptive
Pre-Test 3.0	Knowledgeable
Post-Test 4.4	Very Knowledgeable

Table 2 result of the pretest and posttest on lights and shapes:

Mean	Descriptive
Pre-Test 5.9	Knowledgeable
Post-Test 8.0	Very Much Knowledgeable

Table 3 significant result of pretest and posttest on sound and light signals and pretest and posttest on light and shapes based on the paired sample correlation.

	Correlation	Sig.
Pair 1 Pre-Test and Post-Test	-.058	.437
Pair 2 Pre-Test and Post-Test	-.004	.953

Conclusions.

- In terms of sound and light signals in the pretest result the highest score is item number one. One short blast to mean (isa ka utod nga pag busina) got a 124 respondent answered correct out of 182 respondents and the lowest item is number 5 two flashes to mean (duha ka pag igpat sang suga) 94 respondent answered correct out of 182 respondents. While on post test result the number got a highest score of 180 is item number one and the lowest item is number 5 got a score of 142. We can see that same number 1 and 5 in terms of sounds and light signals in pretest and posttest results of the highest and lowest score.
- In terms of light and shapes the pretest result the highest item is number three got a 124 respondents answered correct and the lowest item is number 10. The respondent answered 82 correct while on the post-test the highest item is number 1 got a 162 correct and the lowest item is number 6 got a 135 correct. We can see that in terms of light and shapes the result of pretest and posttest has a bigger difference.
- Based on the Paired Samples Statistics the result of sound and lights signals in pretest is 3.0495 it means that it is knowledgeable base on the scale I was presented and the

post test result is 4.4121 it mean that more knowledgeable while on the light and shapes the result of pre-test is 5.8571 it means that it is knowledgeable base on the scale that I was presented and the result of posttest is 7.8791 it means that it is more knowledgeable.

- Based on the paired sample correlation the result of pretest and posttest on sound and light signals is 0.437 and paired 2 on pretest and posttest on light and shapes is 0.953. It means that both of them has a significant effectiveness on the training.
- Modified Basic Safety Training with Typhoon Awareness and Collision Regulations is very important to the Boat Captains and Motormen in Region VI.
- Many Participants thankful to the Marina and ISCOF for conducting a training because it is a big help for them to give ideas and improve their knowledge regarding the safety of life at sea.
- Some boats are not equip with the lifesaving appliances for their safety.

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