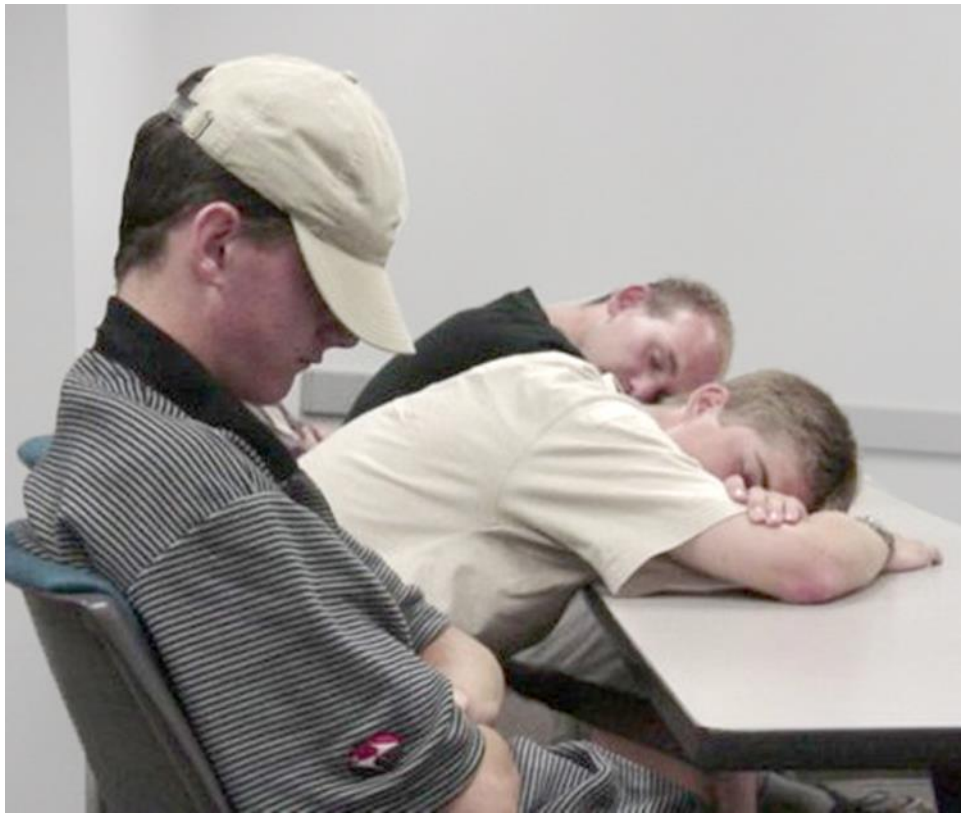
Assuring Proficiency as well as Compliance

Hands-on Training Solutions

Does training make mariners safer?



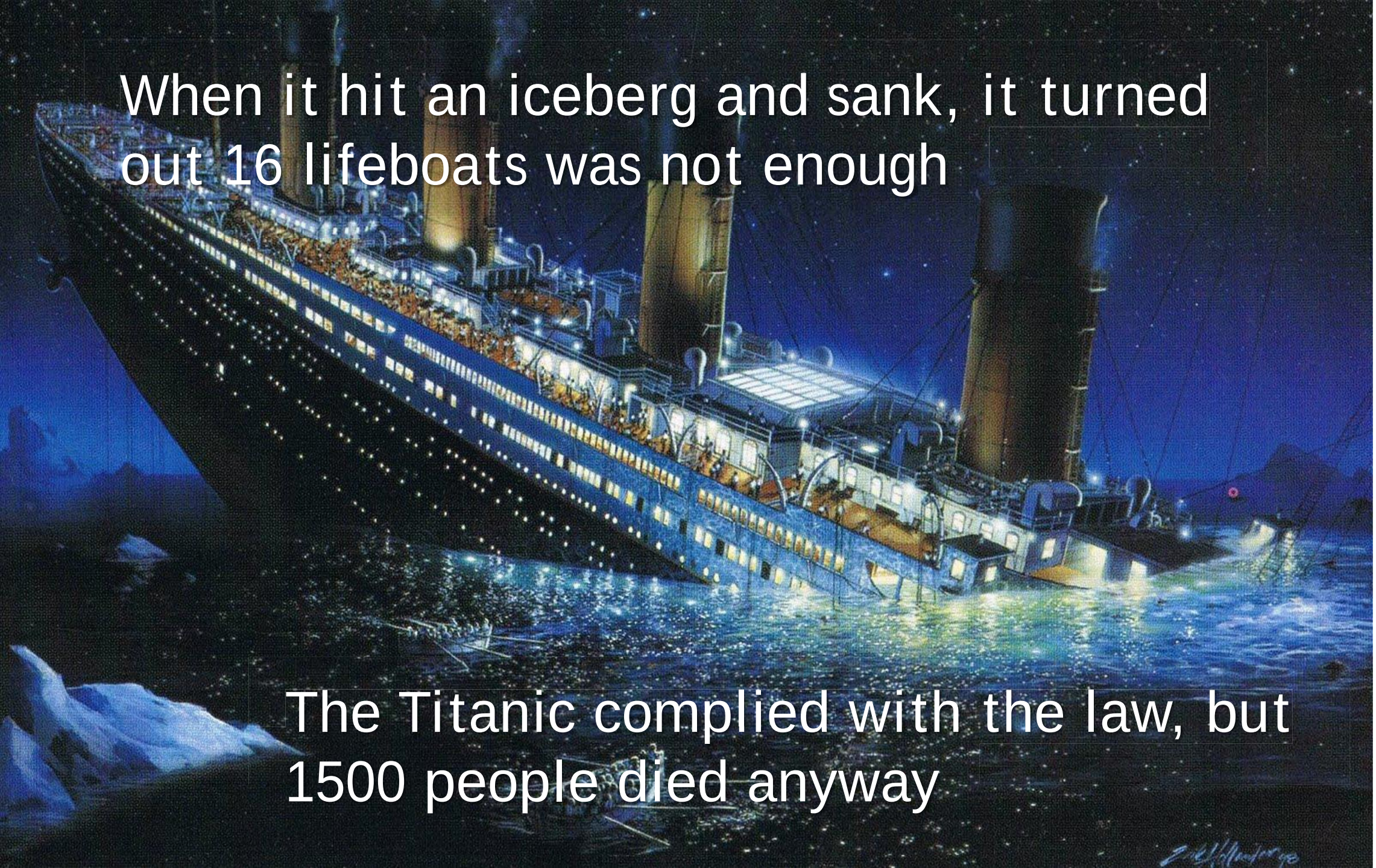
Does Confidence equal Proficiency?

Will this put out a fire?

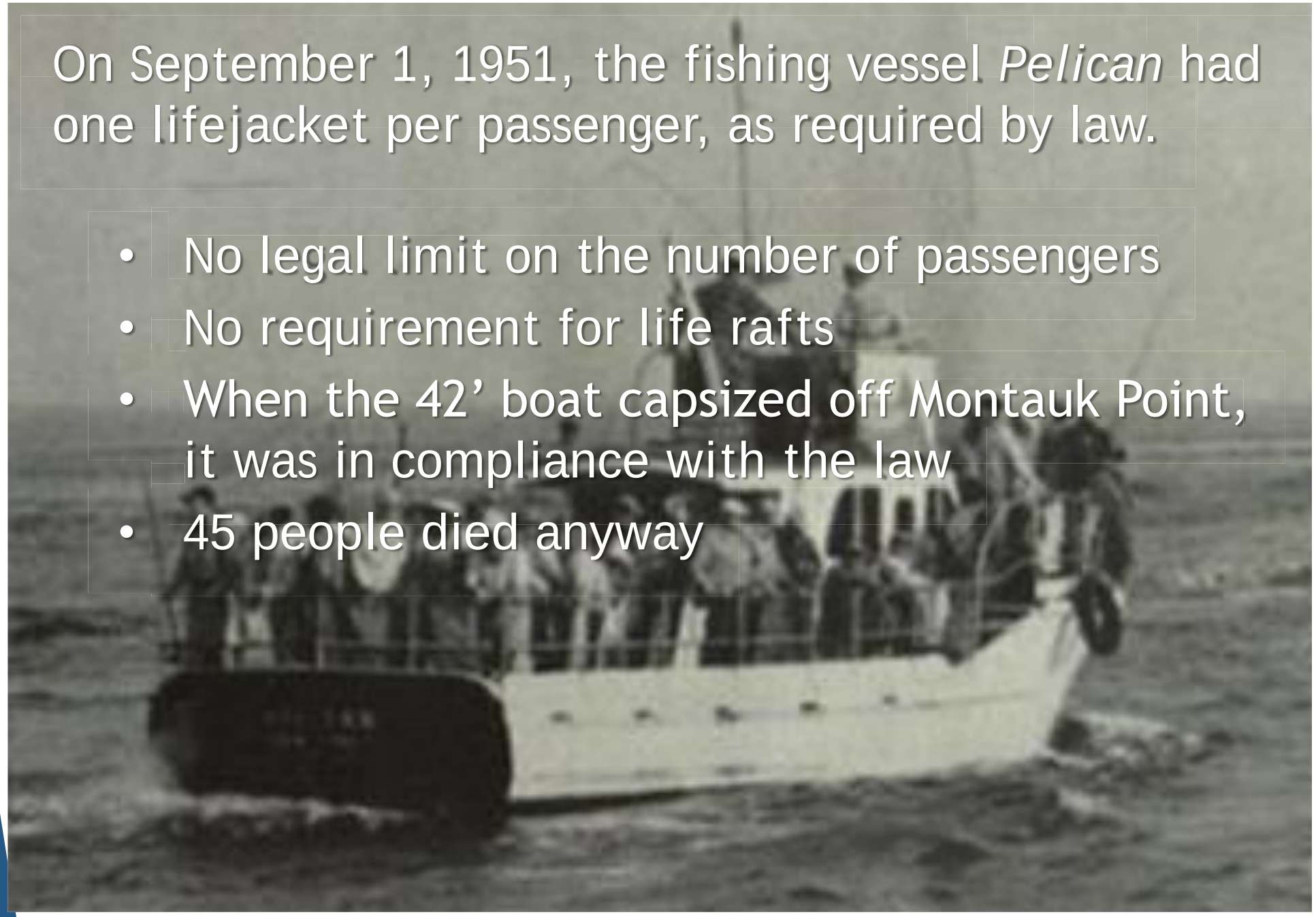
Does compliance keep you safe?

In 1912, British passenger vessels over 10,000 tons were required to carry 16 Lifeboats.

The Titanic had 16 Lifeboats.

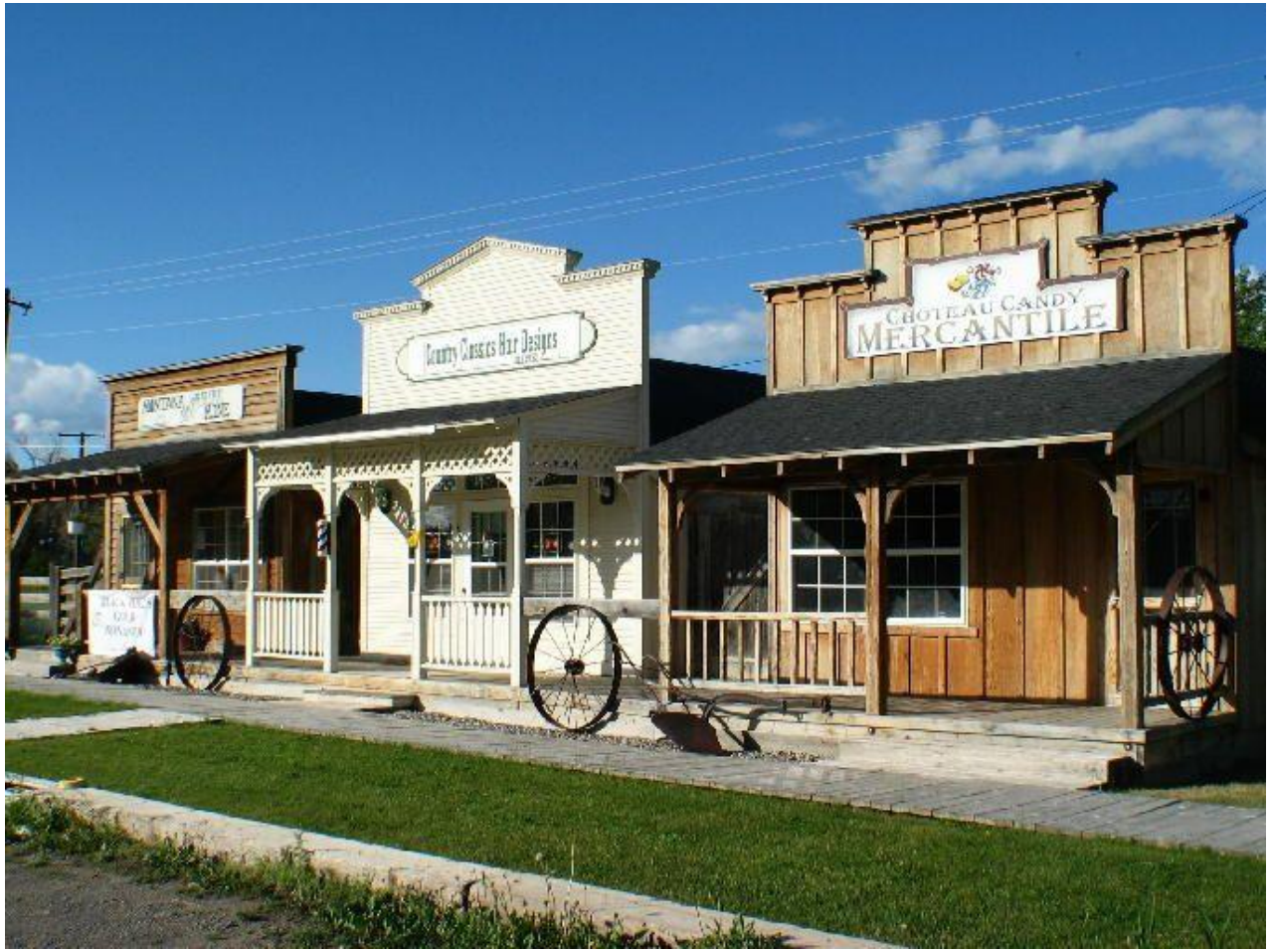

When it hit an iceberg and sank, it turned out 16 lifeboats was not enough
The Titanic complied with the law, but 1500 people died anyway

On September 1, 1951, the fishing vessel *Pelican* had one lifejacket per passenger, as required by law.



- No legal limit on the number of passengers
- No requirement for life rafts
- When the 42’ boat capsized off Montauk Point, it was in compliance with the law
- 45 people died anyway

Things aren’t always what they seem….



Appearance does not always assure *Capability*

Compliance does not always equal *Proficiency*

What are the Subchapter M *training requirements*?

- §140.420 Emergency drills and instruction
- §142.245 Requirements for training crews to respond to fires
- §140.515 Training Requirements (Occupational Health and Safety)

What are the training *Objectives* of Subchapter M?

- Mariners come home safe

What are the training *Objectives* of Subchapter M?

- Prevent damage to equipment, infrastructure and the environment

Your company's Subchapter M Training requirements are specified in your

Towing Safety Management System,

or

Health and Safety Plan

Is <u>your</u> *TSMS* or *Health and Safety Plan* designed to help:

- Mariners come home safe?
- Prevent damage to equipment, infrastructure and the environment?
- Or is it just designed to get you a COI?

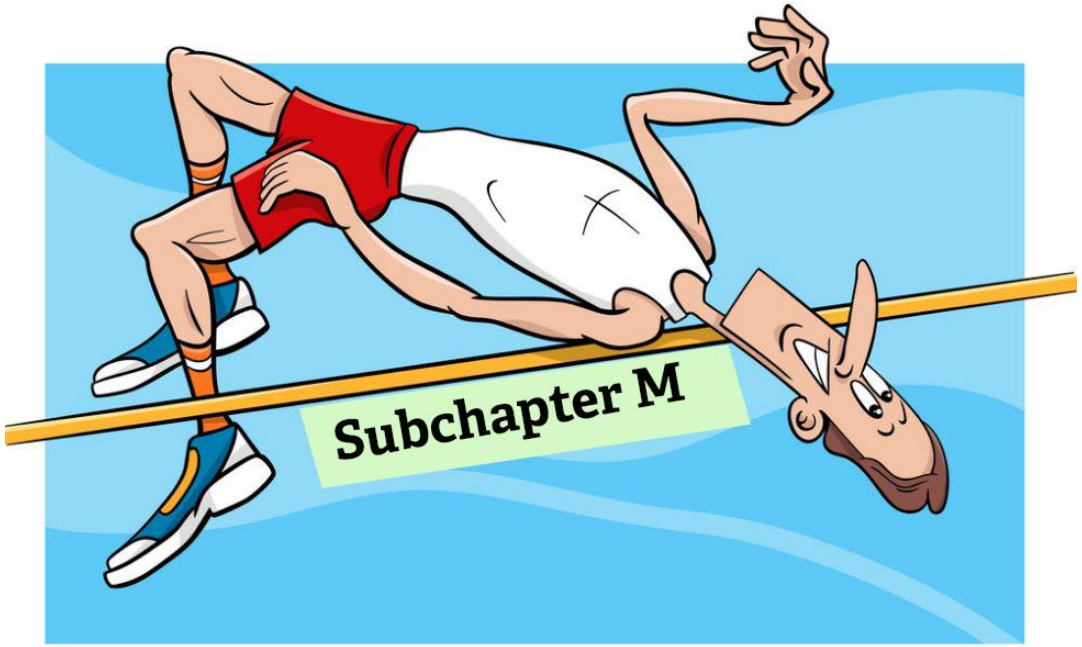
Does your *TSMS* or *Health and Safety Plan* help:

- Is your plan based upon achieving Compliance?

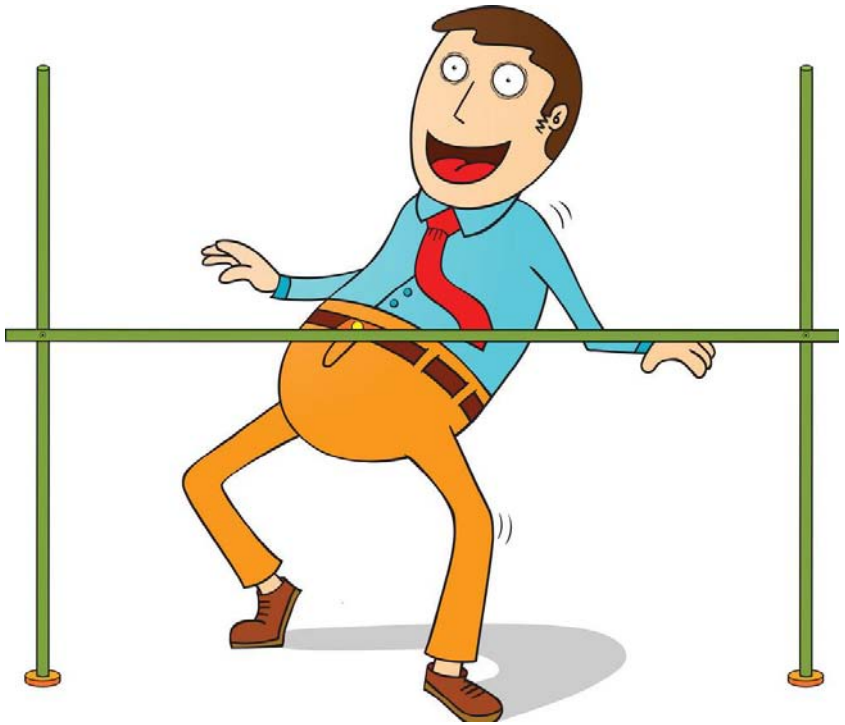
  Or

- Assuring Capability?

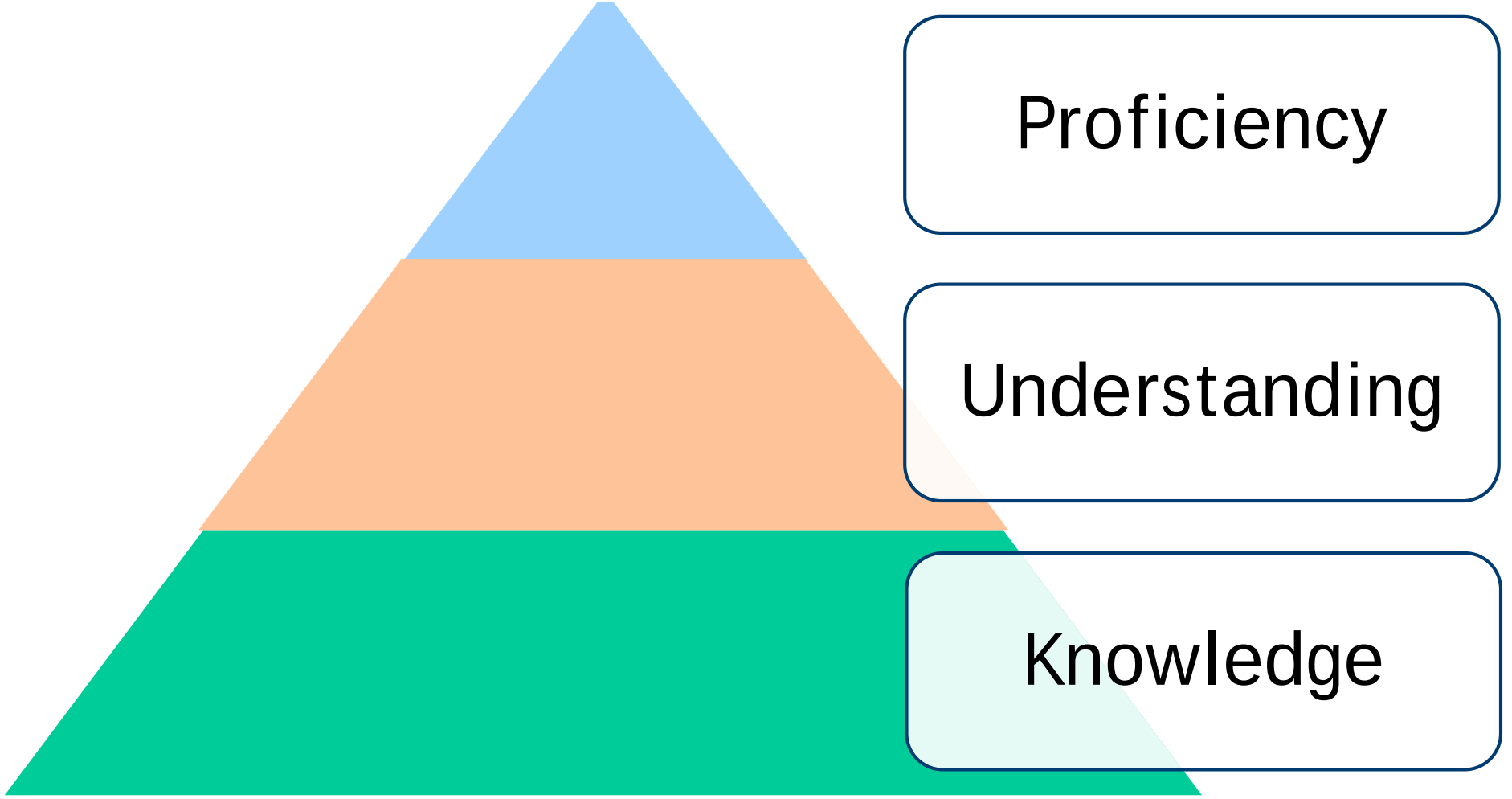
Are you trying to get over the bar?



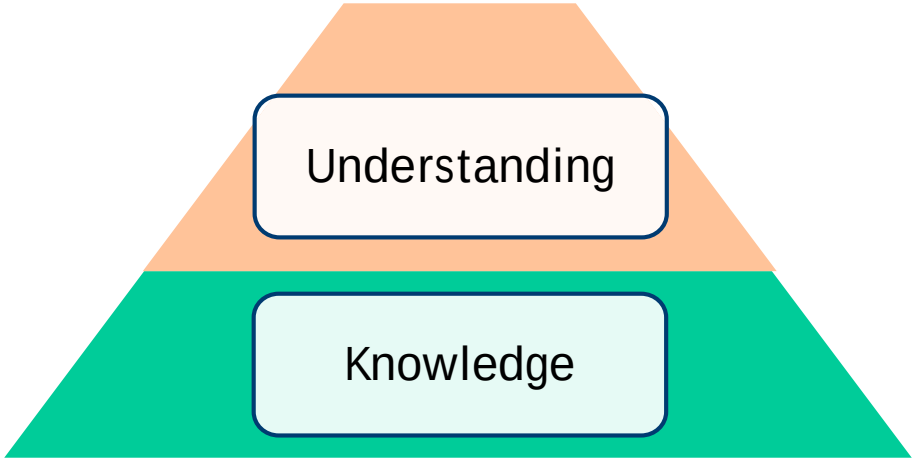
Or wiggle under it?



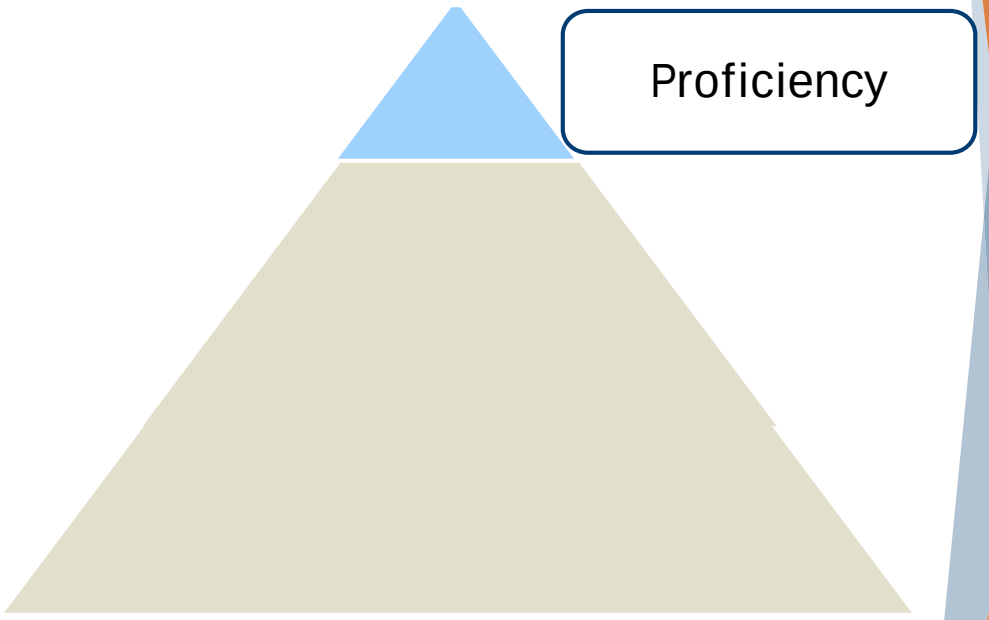
Helping mariners come home safe and preventing damage to equipment, infrastructure and the environment requires 3 things:



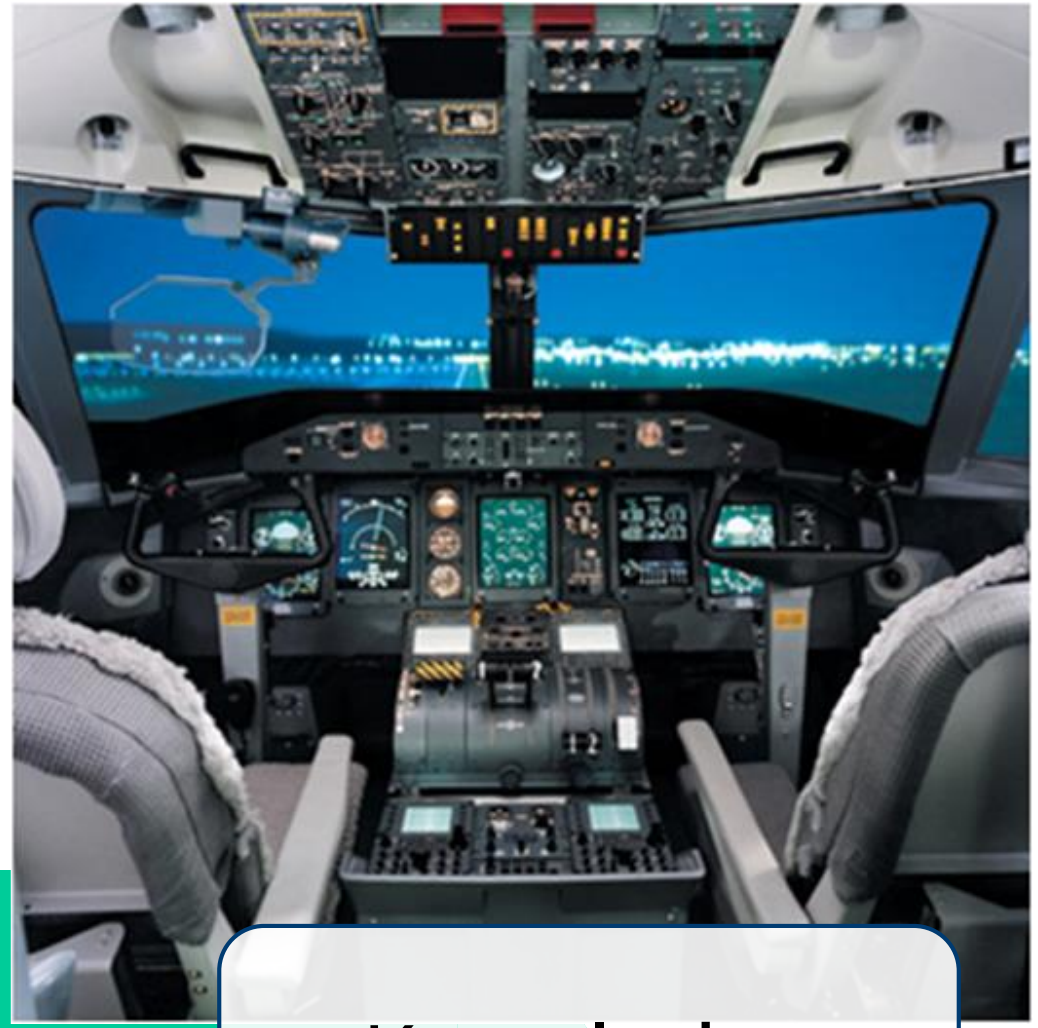
Knowledge and Understanding are the foundation



Proficiency is what you build on the foundation



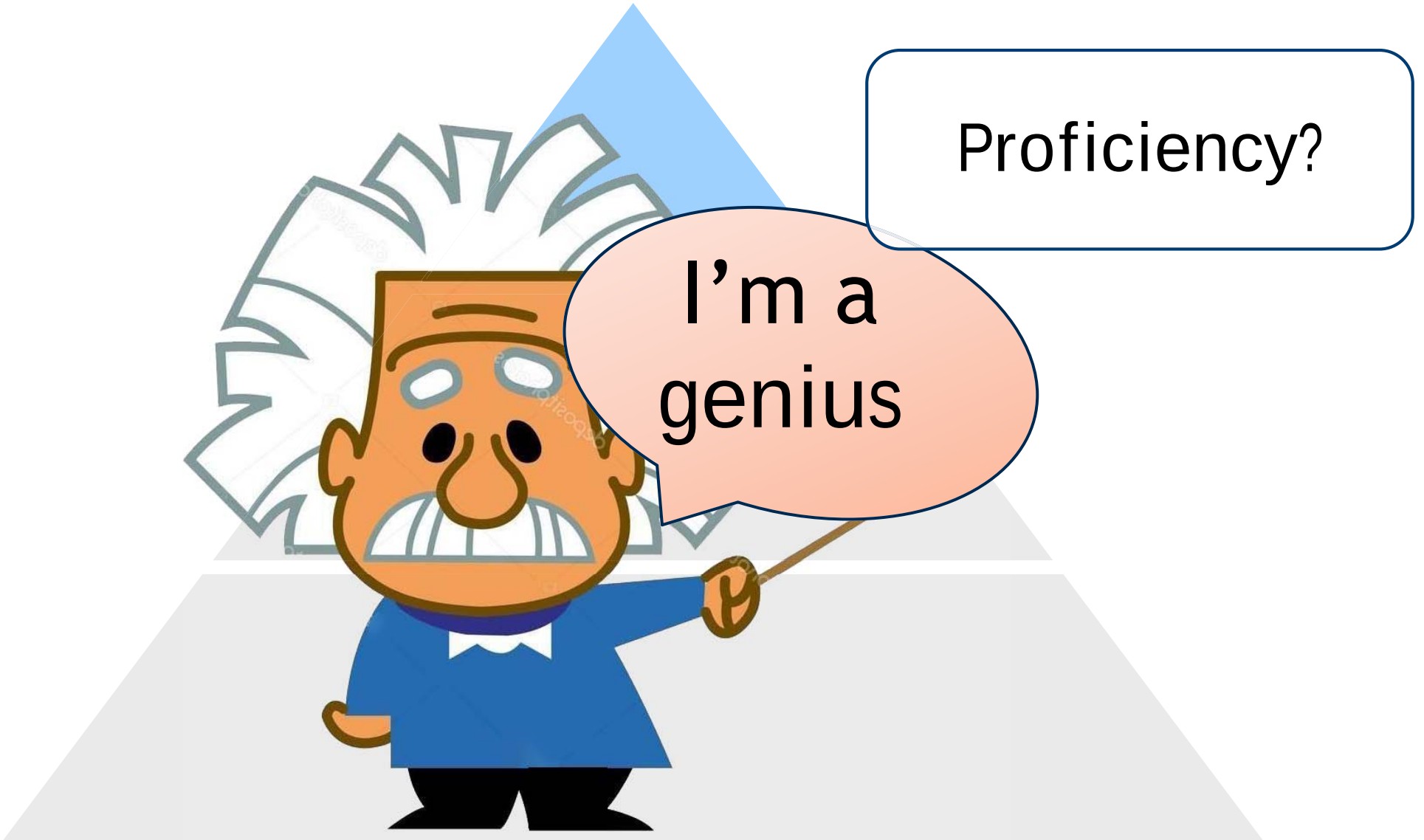
“This is an airplane cockpit”



Knowledge

“These are the throttles”

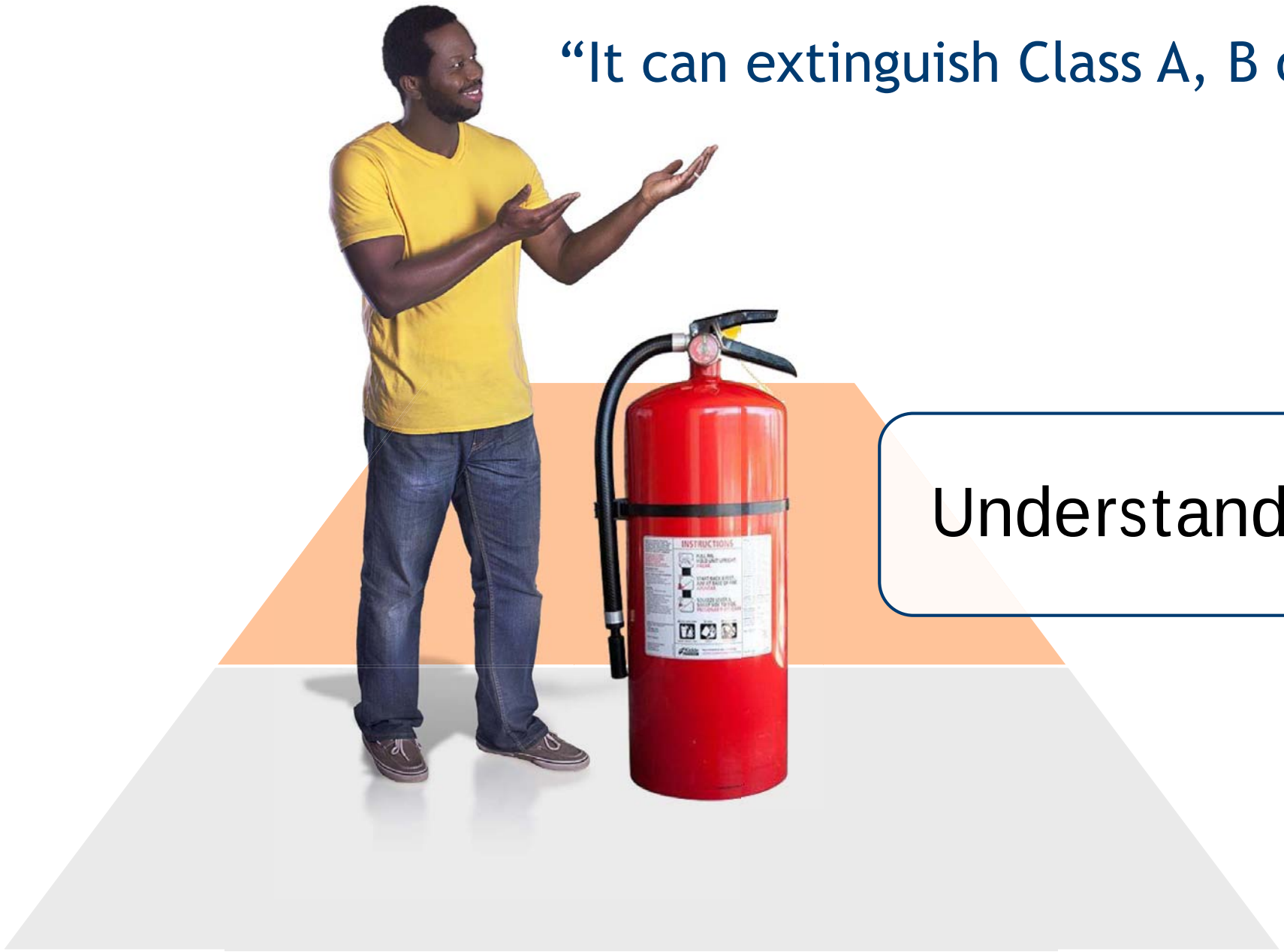
Understanding


Proficiency?
I’m a genius

Proficiency

“That’s a fire extinguisher”

Knowledge

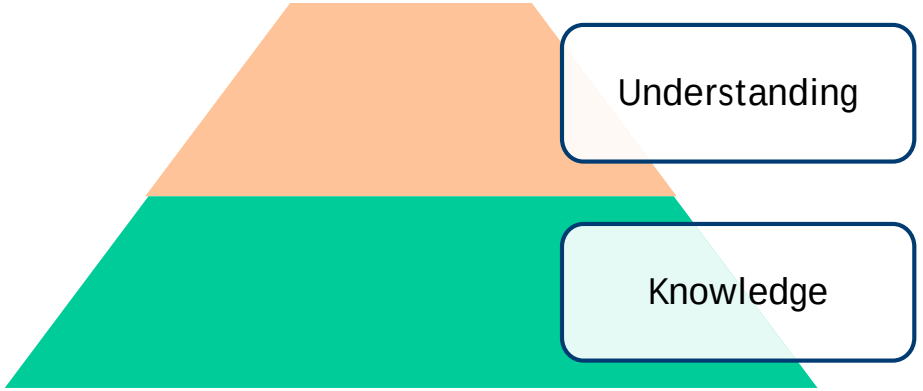


“It can extinguish Class A, B or C fires.”

Understanding

Proficiency

If all you have is a foundation….



You may get wet when it rains….

If the foundation is weak…

Proficiency may be lacking…

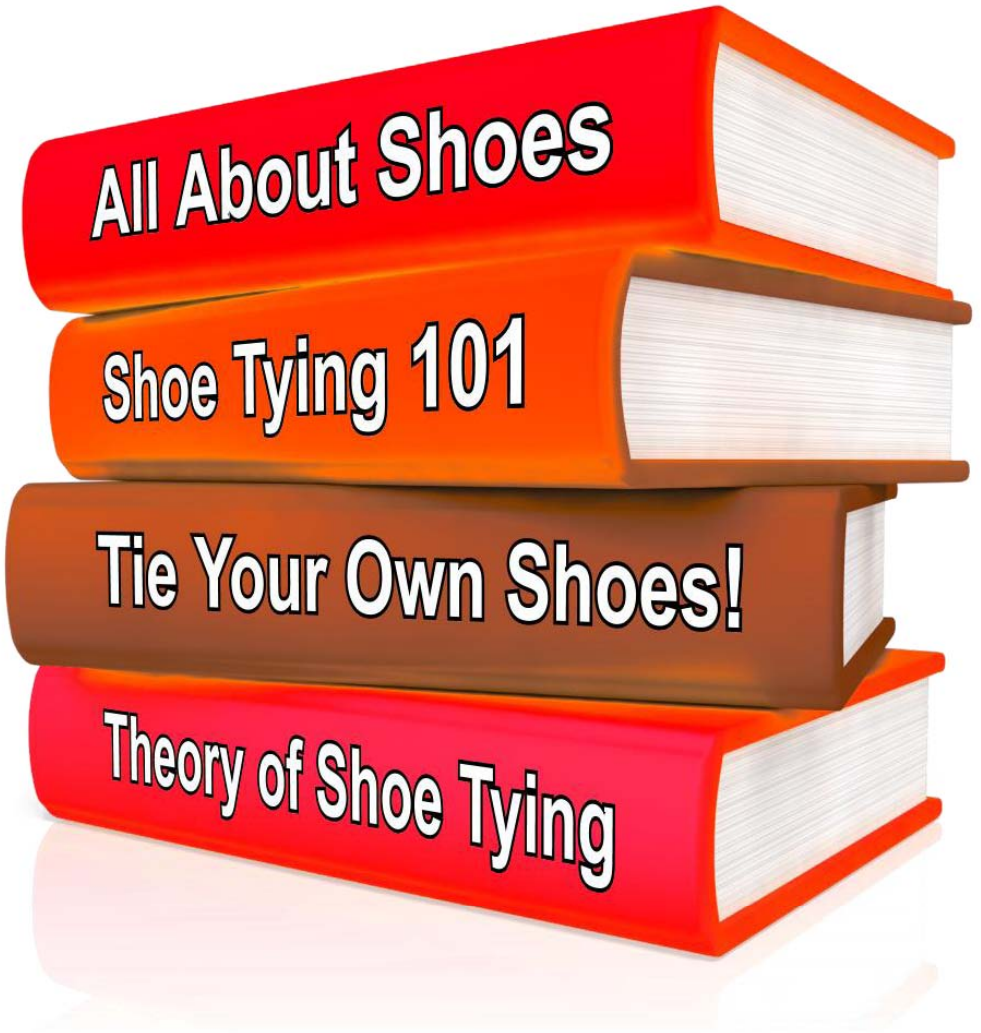
Little Jimmy needs to learn to tie his own shoes…

How does Jimmy achieve Proficiency?

- By thinking about it?

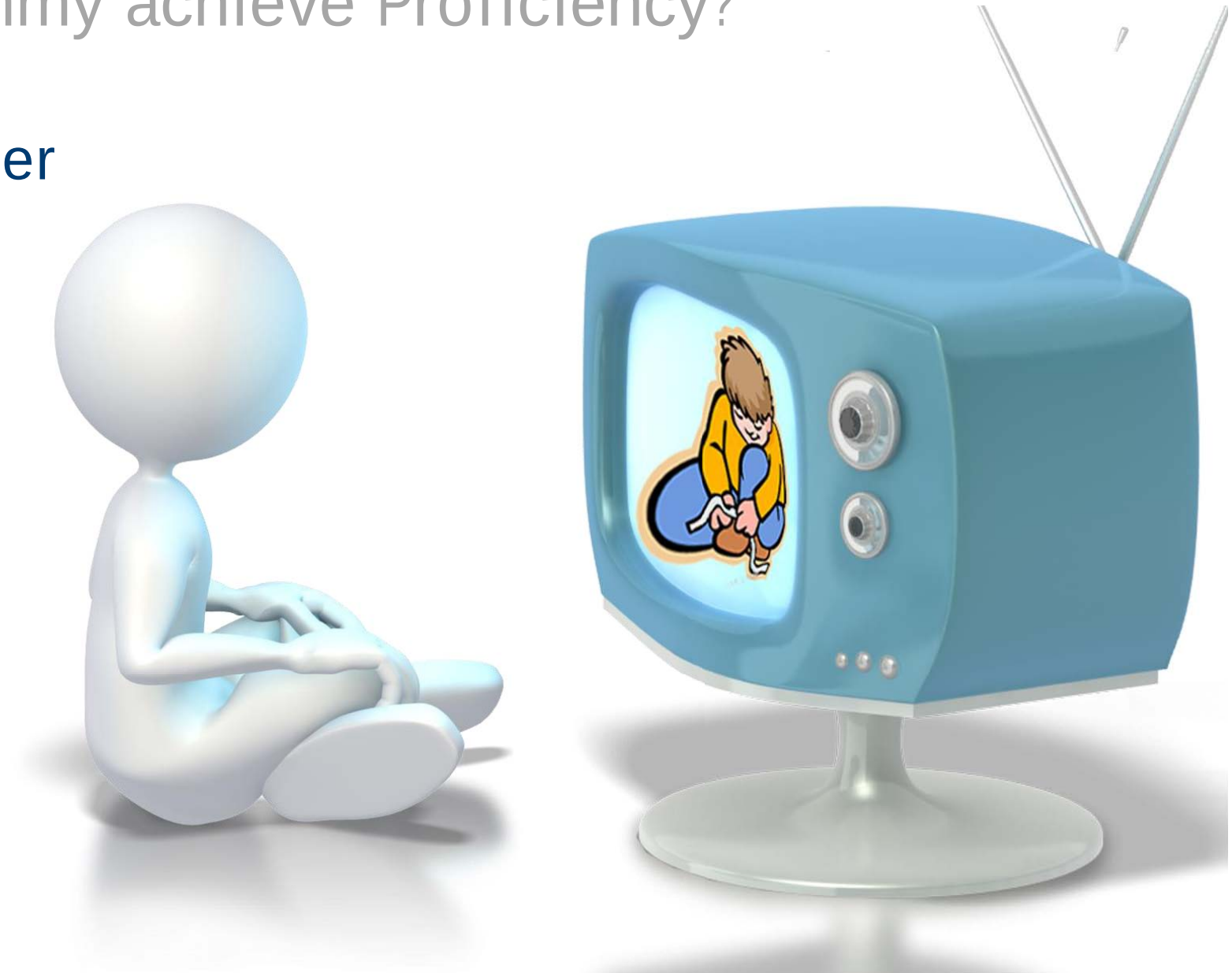
How does Jimmy achieve Proficiency?

- Reading Books?

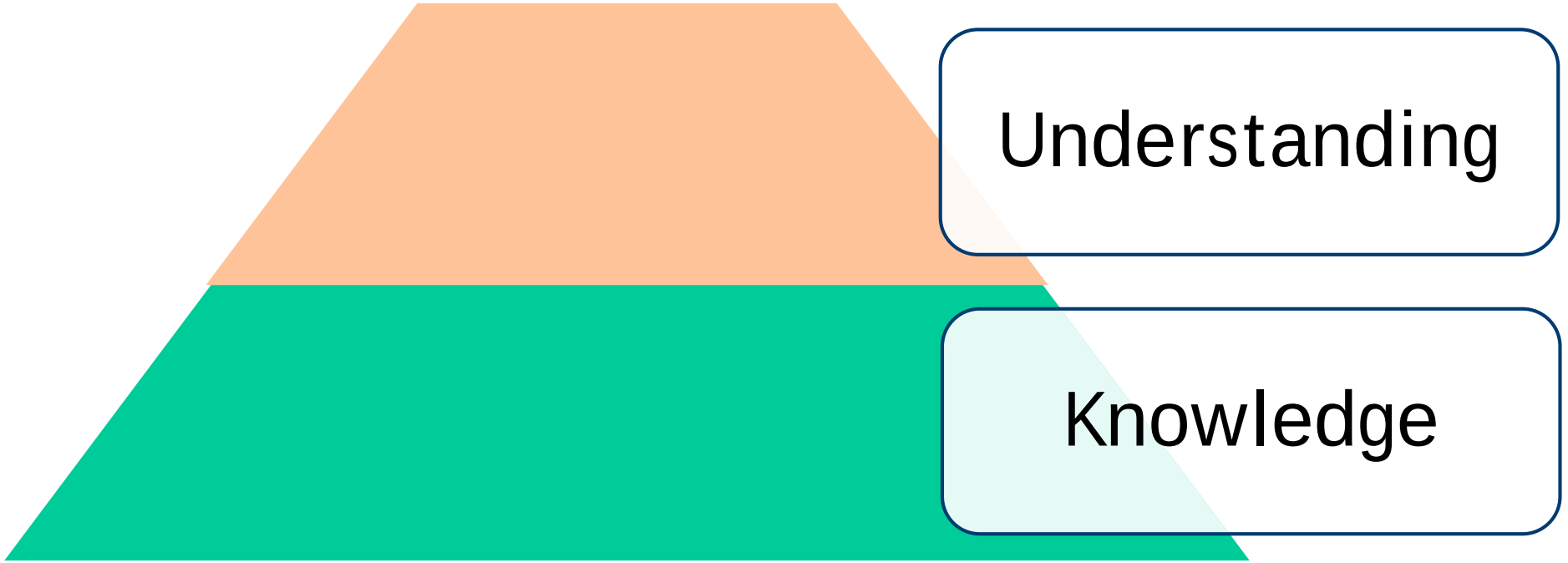


How does Jimmy achieve Proficiency?

- Watching other people?



Thinking, reading and watching provide knowledge and understanding, but



The ONLY way Jimmy can become Proficient at tying his shoes…

- Is to practice tying his shoes!

How good were you the first time you tried…

- Riding a bicycle

How good were you the first time you tried…

- Using a computer

How good were you the first time you tried…

- Operating a tugboat

How good were you the first time you tried…

- Managing an emergency

“I’ve never actually done this operation before.”

Sometimes, it IS your first rodeo.

46 CFR§140.420 Emergency drills and instruction.

- (a) Master's responsibilities. The master of a towing vessel must *ensure* that drills are conducted and instructions are given to *ensure* that all crewmembers are capable of performing the duties expected of them during emergencies.

The master of a towing vessel must ensure that drills are conducted and instructions are given to ensure that all crewmembers are capable of performing the duties expected of them during emergencies.

Abandoning the vessel

The master of a towing vessel must ensure that drills are conducted and instructions are given to ensure that all crewmembers are capable of performing the duties expected of them during emergencies.

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The master of a towing vessel must ensure that drills are conducted and instructions are given to ensure that all crewmembers are capable of performing the duties expected of them during emergencies.

Responding to other threats to life, property, or the environment

That’s a huge responsibility!

Crewmembers must be proficient in emergency skills

- If they are not, it’s the Master’s fault

How do crews become Proficient at emergency skills?

Magic?

Training!

Training!

- Knowledge
- Understanding

How do you become Proficient at emergency skills?

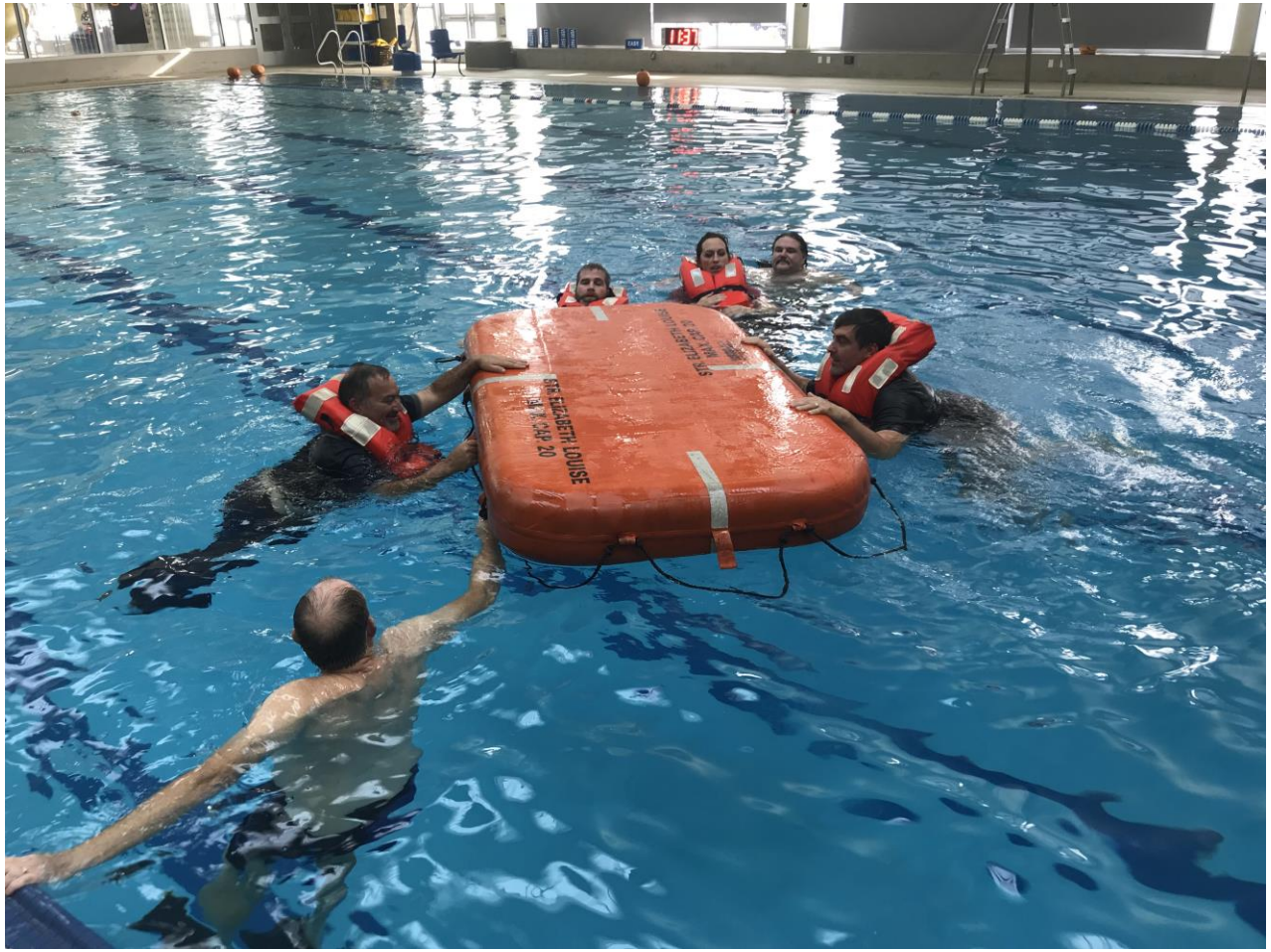
- Hands-on practice
- Demonstrations of competency

How do you become Proficient at emergency skills?

- Hands-on training
- Demonstrations of competency

How do you become Proficient at emergency skills?

- Hands-on training
- Demonstrations of competency



How do you become Proficient at emergency skills?

- Hands-on training
- Demonstrations of competency

How do you become Proficient at emergency skills?

- Hands-on training
- Demonstrations of competency

How do you become Proficient at emergency skills?

- Hands-on training
- Demonstrations of competency

How do you become Proficient at emergency skills?

- Hands-on training
- Demonstrations of competency

How do you become Proficient at emergency skills?

- Ongoing Assessments (Emergency Drills)

Why is Proficiency so important?

- Compliance keeps you on the right side of the law
  - *Proficiency puts the fire out and keeps you alive*

- Compliance gets you the COI
  - *Proficiency helps you come home safe*

United States of America
Department of Homeland Security
United States Coast Guard

Certification Date: 26 Jan 2006
Expiration Date: 26 Jan 2011
IMO Number:

Certificate of Inspection

Ex-Name: TEXAS TEASE

STAR SPIRIT	1030377	WBT5857	Passenger (Inspected)
HOUSTON TX	FRP (Fiberglass)	1160	Diesel Reduction
ELMORE AL, UNITED STATES			

LAKE LIMO LP
280 GROVE RD
KEMAH TX 77565

STAR FLEET, INC.
280 GROVE RD.
KEMAH TX 77565

This vessel must be manned with the following licensed and unlicensed personnel, included in which there must be 0 certified lifeboatmen, 0 certified tankermen, 0 HSC type rating, and 0 GMDSS Operators.

persons in crew, 0 persons in addition to crew, and no others.

passengers are on board or have access to the
a 24 hour period.

ed on the upper deck.

riod for each passenger weighing less than 90

ORMATION***

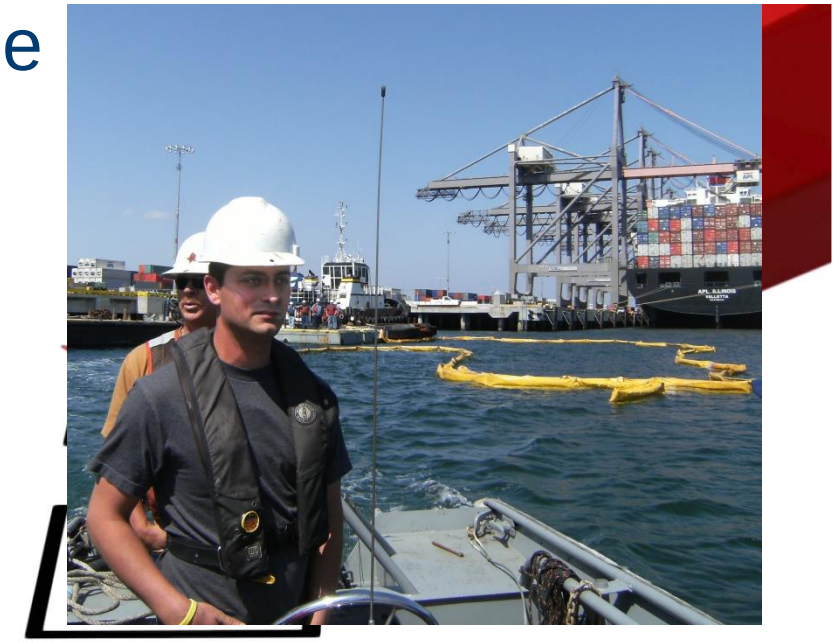
d at HOUSTON, TX, the Officer in Charge, Marine Inspection, Sector conformity with the applicable vessel inspection laws and the rules

certificate issued by:

G. J. PAITL, CDR, USCG, BY

Sector Houston-Galveston

- Compliance makes sure the proper equipment is onboard and functional
  - *Proficiency makes sure people know how to use it*



Can MITAGS help?

MITAGS

MARITIME INSTITUTE OF TECHNOLOGY AND GRADUATE STUDIES

M-Safe

Towing Vessel Safety Training

M-Safe

Towing Vessel Safety Training

- Not Coast Guard-approved
  - 1 or 2-day program
  - Only includes the topics the customer needs

M-Safe Towing Vessel Safety Training

1-DAY

MITAGS-PMI THE LEADER IN MARITIME TRAINING

M-SAFE TOWING VESSEL SAFETY TRAINING
1-DAY COURSE OUTLINE

Time	Subject	Objective	M-*SAFE* Workbook assignment
0800-0900	Introduction	Identify academic surroundings; follow safety procedures; familiarize with Instructors and fellow participants; describe the course requirements; and discuss individual expectations.	
	Threats to Life, Property, or the Environment	List hazards and risks found on towing vessels	Complete applicable worksheets identifying hazards and risks found aboard tugs
		Describe procedures for reporting unsafe conditions	
		Waste management procedures	
	Health and Safety Plan	Discuss the elements of a Health and Safety Plan	Complete SMS Orientation Worksheet
0900-0930	Risk Management and Controls	Describe the "Hierarchy of Controls"	Record examples of each type of Control as practiced aboard tugs
0930-1030	Safe use of Equipment	Company Safety Rules	Complete Safe Procedure Worksheets provided for each type of activity
		Identify the proper procedures when operating deck machinery, line handling, hand tools, ladders and abrasive wheel machinery PPE	
1030-1130	Hazardous Communications	Demonstrate ability to extract data from a Safety Data Sheet	Complete SDS worksheet questionnaires based on products carried aboard vessels
1130-1200	Confined Space Awareness	Describe the precautions associated with confined spaces	Identify and list confined spaces found aboard tugs
		List the steps to be taken prior to entering a confined space	
	Lockout/Tagout Procedures	State the importance of controlling hazardous energy when servicing equipment	Document proper securing of hazardous energy sources aboard tugs
		Describe means and devices for securing hazardous energy	

MITAGS-PMI
MARITIME INSTITUTE OF TECHNOLOGY & GRADUATE STUDIES
PACIFIC MARITIME INSTITUTE

M-SAFE TOWING VESSEL SAFETY TRAINING FOR G & H TOWING
COURSE OUTLINE

Time	Subject	Objective	M-*SAFE* Workbook assignment
1200-1230	LUNCH		
1230-1330	Fire prevention and response	State best practices to prevent fire	Complete applicable worksheets
		Take effective action on discovery of fire	Draw a diagram indicating the location of all firefighting equipment on assigned tug
		Extinguish a fire with portable extinguisher and fire hose	Describe the procedure for discharging the fixed fire extinguishing system aboard a tug
1330-1400	Flooding prevention and response	State best practices for maintaining watertight integrity	Draw a diagram indicating the location of all watertight closures aboard a vessel
		Demonstrate plugging and patching techniques	Document in ***M-SAFE Workbook*** items which could be used to plug, patch and shore holes in the hull or ruptured piping
		Operate a portable dewatering pump	Under supervision, set up and operate a dewatering pump aboard a tug
1400-1430	Fall overboard prevention and recovery of persons from the water	State best practices for fall overboard prevention	List fall overboard procedures applicable to assigned tug
		Describe the techniques for recovering persons from the water	Describe the use of man overboard equipment carried aboard assigned tug
1430-1500	Abandoning the Vessel	Don a personal flotation device	Draw a diagram indicating the location of all lifesaving equipment on assigned tug
		Describe liferaft launching procedures	
1500-1630	Practical Exercises	Fire	
		Flooding	
		Abandonment	
		Rescue	
1630 - 1700	Written Exam	Successfully complete a written exam of 50 questions	

M-Safe Towing Vessel Safety Training

2-DAY

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MARITIME INSTITUTE OF TECHNOLOGY & GRADUATE STUDIES
PACIFIC MARITIME INSTITUTE

THE LEADER IN MARITIME TRAINING

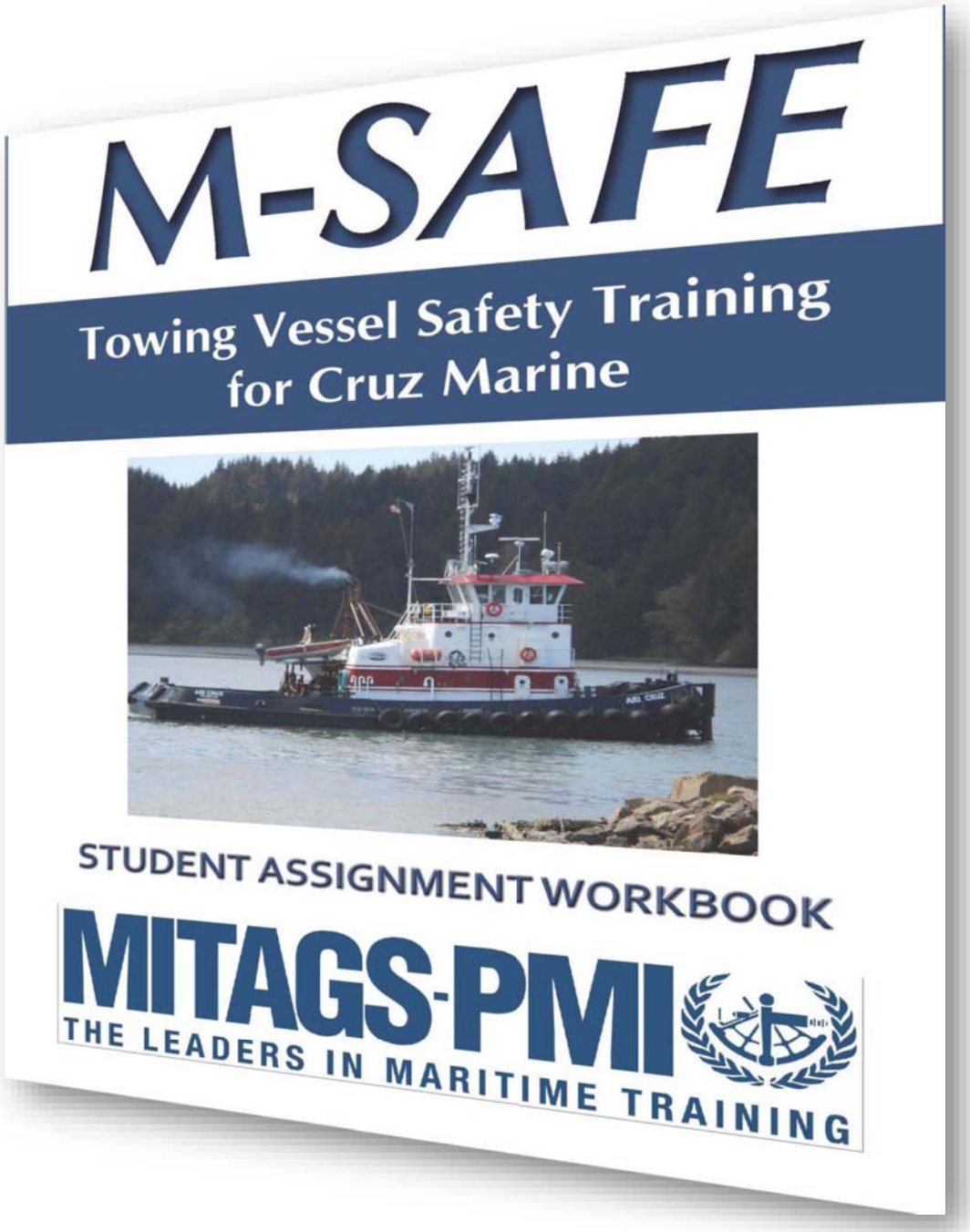
M-SAFE TOWING VESSEL SAFETY TRAINING

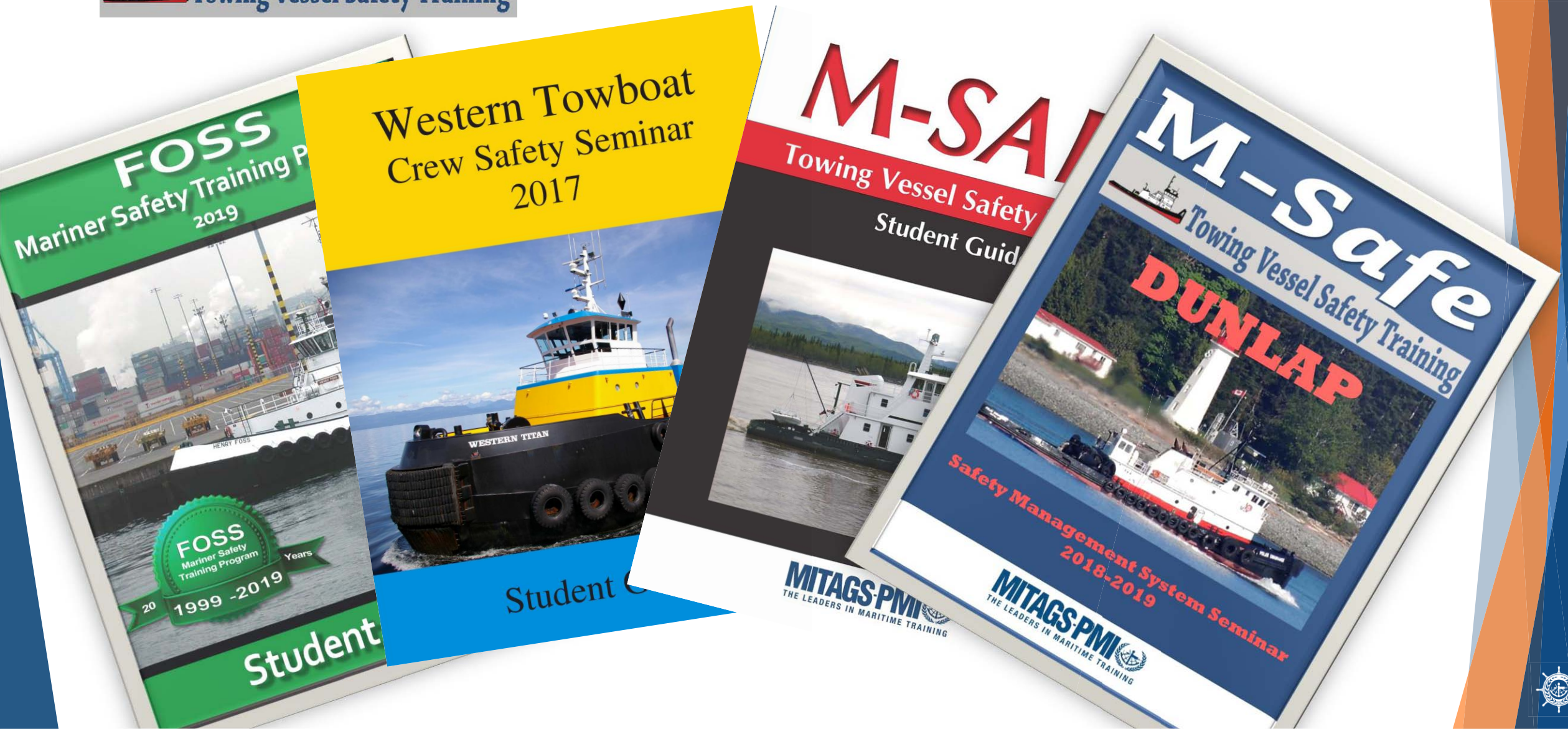
Course Schedule

Time	Day 1	Day 2
0800-0830	Introduction and Orientation	Threats to Life, Property, or the Environment
0830-0900	Health and Safety Plan	Safety Orientations
0900-0930	Reporting Unsafe Conditions	Safety Meetings
		Oil Spills
0930-1000	Hazard and Risk Assessment and Mitigation	Towing Emergencies
1000-1030	Proper Selection of PPE	Fire
1030-1100	Safe use of Equipment	Flooding
1100-1130		Abandoning the Vessel
1130-1200		
1200-1300	**Lunch Break**	**Lunch Break**
1300-1330	Hazardous Communication and Cargo Knowledge	Recovering Persons from the Water
1330-1400	Safe Use of Hazardous Materials and Chemicals	Emergency Drills
1400-1430	Confined Space Entry	Practical Exercises
1430-1500	Respiratory Protection	
1500-1530	Lockout/Tagout Procedures	
1530-1600		
1600-1630	Training for Persons Other Than Crew	Written Exam
1630-1700	Practical Assessment	Review, Critique, Issue Certificates

M-Safe
Towing Vessel Safety Training

- Includes custom student guide based on company operations and TSMS or HSP

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Safety Management System Seminar
2018-2019
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Towing Vessel Safety Training

- Hands-on activities to build proficiency

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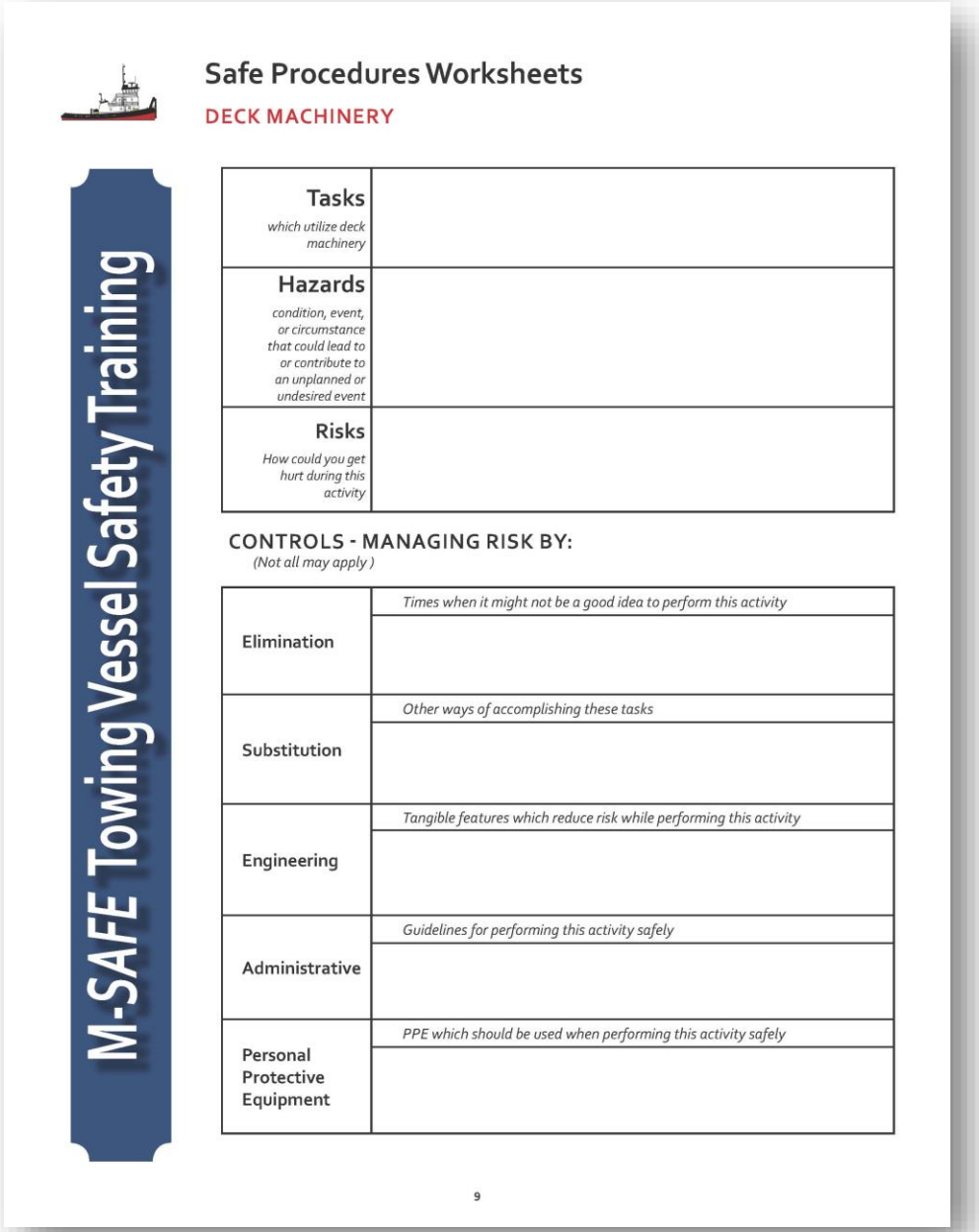
Towing Vessel Safety Training

- Follow-on workbook to document assessments and proficiencies



Safe Procedures Worksheets

DECK MACHINERY

M-SAFE Towing Vessel Safety Training

Tasks *which utilize deck machinery*	
Hazards *condition, event, or circumstance that could lead to or contribute to an unplanned or undesired event*	
Risks *How could you get hurt during this activity*	

CONTROLS - MANAGING RISK BY:
(Not all may apply)

Elimination	*Times when it might not be a good idea to perform this activity*
Substitution	*Other ways of accomplishing these tasks*
Engineering	*Tangible features which reduce risk while performing this activity*
Administrative	*Guidelines for performing this activity safely*
Personal Protective Equipment	*PPE which should be used when performing this activity safely*

9

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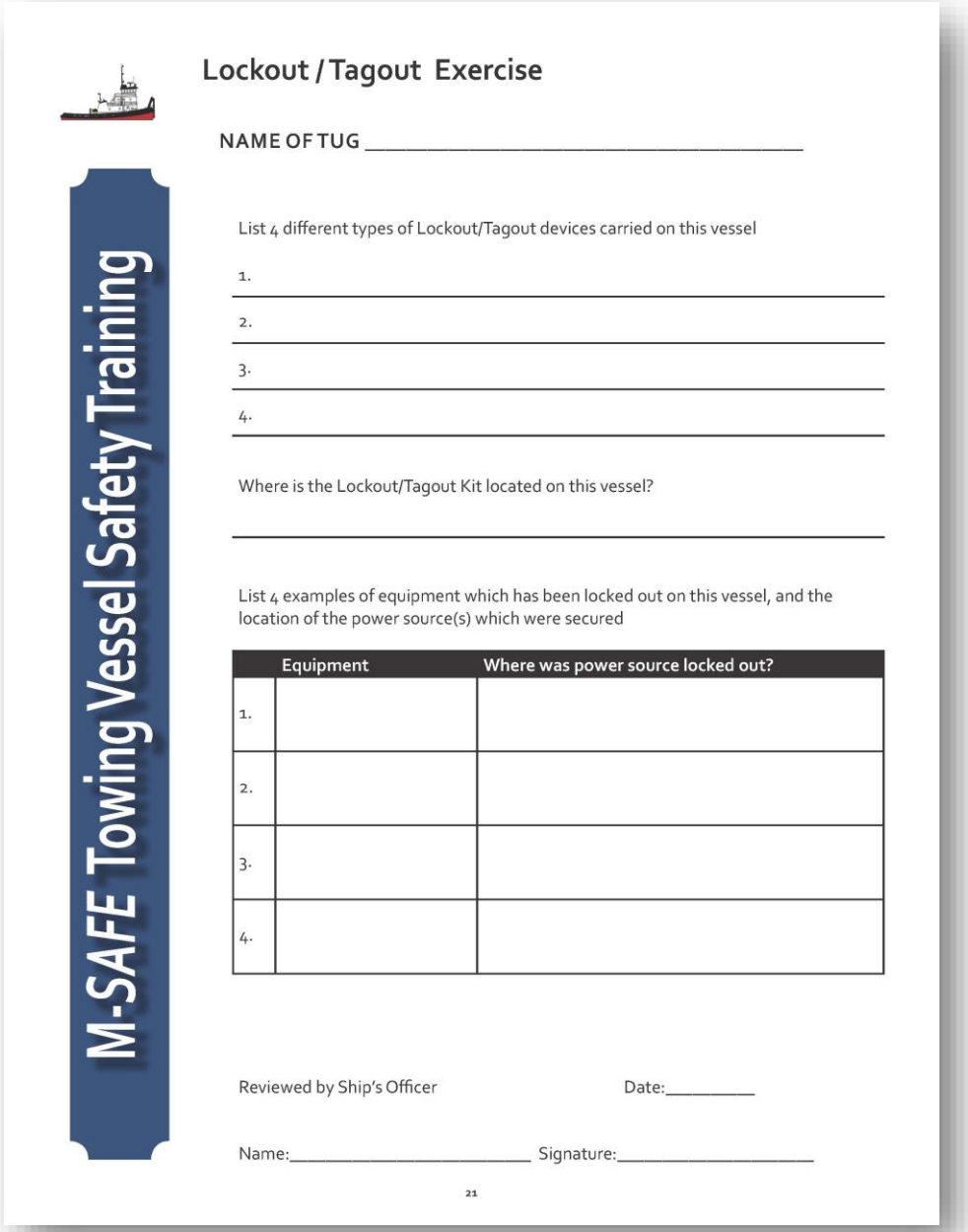
Towing Vessel Safety Training

- Follow-on workbook to document assessments and proficiencies



M-SAFE Towing Vessel Safety Training

Lockout / Tagout Exercise

NAME OF TUG _____

List 4 different types of Lockout/Tagout devices carried on this vessel

1. _____
2. _____
3. _____
4. _____

Where is the Lockout/Tagout Kit located on this vessel?

_____

List 4 examples of equipment which has been locked out on this vessel, and the location of the power source(s) which were secured

	Equipment	Where was power source locked out?
1.		
2.		
3.		
4.		

Reviewed by Ship's Officer Date:_____

Name:_____ Signature:_____

21

- Offered at MITAGS or Customer's location

- Can be taught by MITAGS or Licensed to Customer to teach in-house

M-Safe
Towing Vessel Safety Training

- Company Seminars and Workshops
  - How to Run and Assess Emergency Drills

Emergency Drill Template

Vessel		**Date**		**Time**	
		Underway		**Pierside**	

Topic *Nature of the situation*	☐ Fire	☐ Abandon Ship	☐ Rescue
	☐ Security	☐ Lost Barge	☐ Flooding
	☐ Loss of Steering	☐ Oil Spill	☐ Medical

Location *Where on the vessel is this happening?*	*Conduct your drills in different parts of the vessel, not just the ones which are easy to reach. Emergencies can happen on the tug's deck, on the barge, in the engine room, the galley, staterooms, laundry and any number of other places.*
Evaluation Criteria *What determines success or failure? What competencies are being measured?*	*These are the objective performance behaviors you are measuring. For example:* • *Can the crew rescue a non-responsive victim from the water?* • *Does the crew know how to rig and run a dewatering pump?* • *If carried, can the crew don immersion suits in less than two minutes?* • *Does the crew know how to indirectly fight a fire in the engine room?* • *Can a watchstander take effective action to maintain control of the vessel if steering is lost?* • *Can the crew safely and effectively deploy containment boom in the event of an oil spill?*
Scenario *What is the emergency? What caused it to happen?*	*Describe the situation which caused this emergency. How did the fire break out? How did a person fall over the side, and what sort of condition are they in? Why is there flooding in the engine room?* *Crewmembers can often relate better to drills which are based on real emergencies that have happened before, whether on their own vessels, or vessels of similar type.* *Drills based on things that have happened before can be used to demonstrate responses which are effective, and others which are not.*
Substitutions *What helps the crew visualize the situation?*	*You wouldn't really set a boat on fire for a fire drill, but how would you simulate a fire? You won't really launch a life raft, but how far will you go in your simulation? How would you simulate a person in the water, or a medical emergency?*
Initiation *How does the drill start?*	*How will the drill begin? Will a random crewmember "discover" something such as a sign disclosing the emergency, such as "This is a drill - heavy smoke coming from this stateroom - contact bridge when you find this," or* *Will the person in charge personally disclose the situation to a crewmember, saying something like:* *"You have just lost steering - what are you going to do?" or* *"Fred just cut his arm to the bone - what are you going to do?" or* *"Larry just fell over the side while we are at the dock - what are you going to do?"*

M-Safe
Towing Vessel Safety Training

- Company Seminars and Workshops
  - How to Run and Assess Emergency Drills

Fire Drill Evaluation

Vessel		**Date**	
Initial Actions by Discoverer	**Promptly sounded alarm?**		
	Provided accurate information?		
	Search for trapped personnel?		
	Secured power?		
	Secured ventilation?		
	Took effective initial action to mitigate situation?		
Initial Actions by Watch Officer	**Promptly sounded alarm?**		
	Promptly made distress call?		
	Referenced Station Bill?		
Initial Response by Crew	**Recognized emergency signal?**		
	Mustered at designated location?		
	Accounted for ALL personnel?		
	Acquired emergency equipment en route? *(Portable extinguishers, Immersion Suits)*		
	Properly attired? *(Battle dress for fire, warm clothing for abandon ship)*		
	Took proper route to muster location? *(Did not transit smoke-filled passages, transited externally)*		
Response to Scenario	**Scene Leader in charge?**		
	Scene Leader kept wheelhouse informed?		
	Team well-coordinated?		

M-Safe
Towing Vessel Safety Training

- Company Seminars and Workshops
  - Damage Control

M-Safe

Towing Vessel Safety Training

- Company Seminars and Workshops
  - Man Overboard Recovery

M-Safe
Towing Vessel Safety Training

- Company Seminars and Workshops
  - Confined Space Awareness/Rescue

M-Safe

Towing Vessel Safety Training

- Company Seminars and Workshops
  - HAZCOM/HAZWOPER

M-Safe

Towing Vessel Safety Training

- Company Seminars and Workshops
  - Oil Spill Response

M-Safe

Towing Vessel Safety Training

- Company Seminars and Workshops
  - First Aid and CPR

M-Safe Towing Vessel Safety Training

- Company Seminars and Workshops
  - Other Emergency Response and Health and Safety topics

NOTES

M-*SAFE* Towing Vessel Safety Training

ANALYZING RISK

The Relationship between Safety, Tasks, Hazards and Risk

What is Safety?

Before we can evaluate if a situation is safe or unsafe, it would help to know exactly what we mean when we use the word "Safety."

One of the best definitions for safety is "*Freedom from Unacceptable Risk.*" Note that the concept of safety does not mean freedom from ***all*** risk. There is always the chance that in spite of all

Safety:
Freedom from Unacceptable Risk

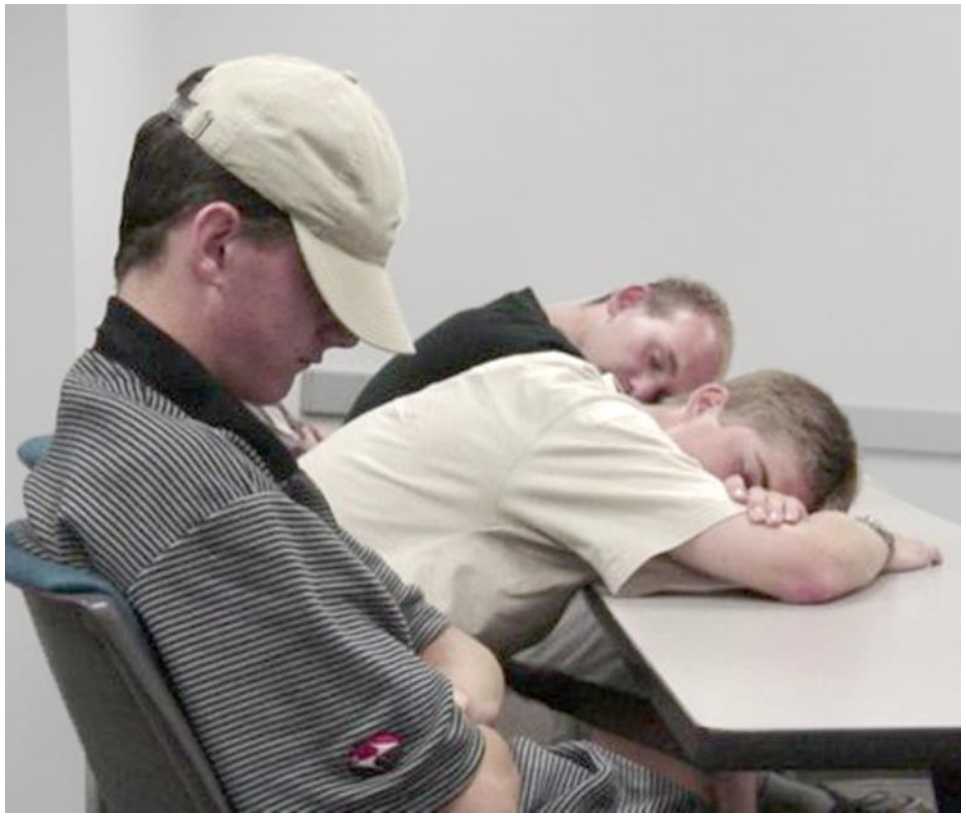
precautions, things can still do wrong. Even if you are doing everything right, it is always possible that other people's actions, mechanical failures, or forces of nature can put you in jeopardy. Getting a towing vessel underway, powering it with flammable fuels, floating on a a river or the sea, and sharing the waterways with other vessels will always pose a certain degree of risk. The only way to eliminate ALL risk on a towing vessel would be to never set foot on one!

Once we understand that risk is always present, not just on towing vessels, but in life itself, we then we need to learn to evaluate risk, so that we can distinguish between ***Acceptable*** and ***Unacceptable*** risks. In order to be able to do this, we need to look at the relationship between **Tasks, Hazards** and **Risks.**

Once we understand the relationship between those three elements, we can develop the safest way of carrying out the jobs which are part of working on and running a towing vessel. These are called ***"Best Practices."*** Best Practices help you identify hazards and avoid taking unacceptable risks.

In Summary

Does Training make mariners safer?



Not if it puts them to sleep!

Not if they don't understand it!

Training make mariners safer when it combines:

- Knowledge,
- Understanding, and
- Proficiency

Does Confidence equal Proficiency?

I got this!

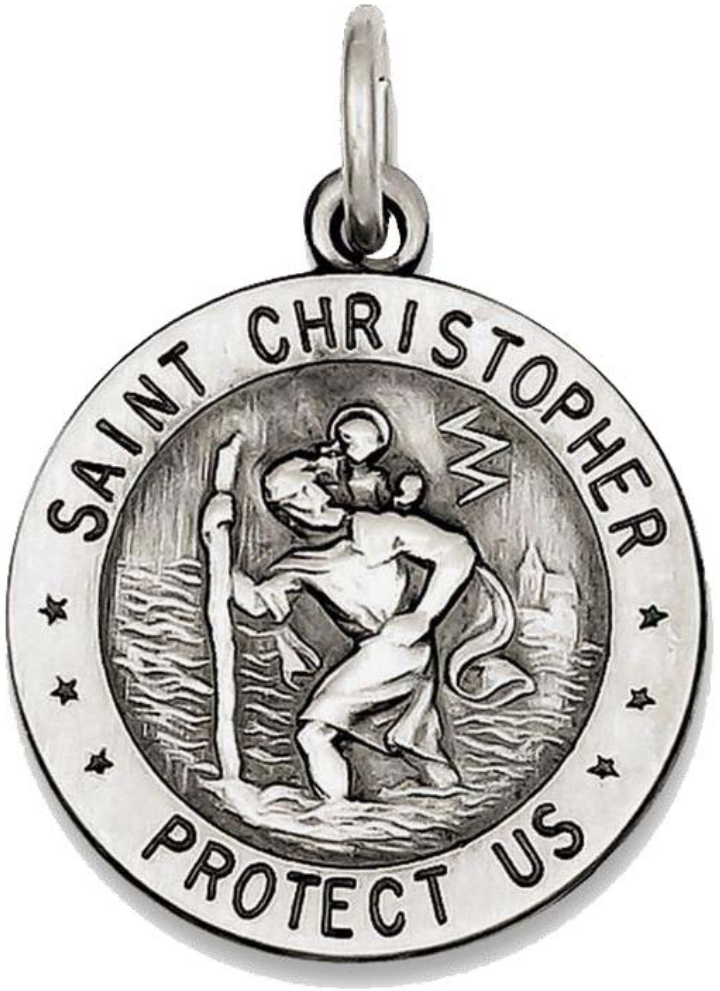
Bad training (or lack of training) can kill you!

Will this put out a fire?

Only if used by a person who has been trained to properly use it

A training certificate is not a St. Christopher Medal

- Good training = Good results
- Poor training = Disappointment



What do we need to come home safe?

COMPLIANCE

PROFICIENY

Does Training equal Proficiency?

- It depends upon the training
- It depends upon the assessments

Does Training equal Proficiency?

- If training only provides knowledge and understanding, what is the point?
- If there is no roadmap to proficiency, why bother?
- It’s like going to a fancy restaurant and leaving your wallet at home

Remember…You don’t get what you Expect.

- You get what you Assess
- People don’t “rise to the occasion;” they rise to their level of proficiency

Without Proficiency you are a helpless bystander at best, and a victim/casualty/statistic/headline at worst.


Don’t let this happen to you!


Look beyond compliance.


Insist on a quality training program.


Insist on Proficency.

Thank You

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