"HAVE YOU GOT IT?" OVERCOMING THE FUTILITY OF TRAINING MARINERS ABOUT COLLISION REGULATIONS

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Abstract

Despite aids to navigation, there are too many collisions involving deep-sea ships, tugs, workboats, fishing vessels, and recreational boats. Nautical trainers claim to teach collision regulations (COLREGS), but training has little to do with learning. Most mariners have only a surface (or no) understanding of maritime "rules of the road." In British Columbia, collisions have caused multiple fatalities and traumatized rescuers. Lecturing is not a good way to prevent collisions at sea. The British Columbia Institute of Technology's Marine Campus is committed to "excellence in training." The author reflects on his experience as a student there and suggests the institution adopt less authoritarian and more participatory, engaging, and respectful ways of fostering learning. Teaching COLREGS is as much a theoretical as a practical problem. Marine institutes should back away from training, put less focus on teaching and more on having people learn together.

Résumé

Malgré les aides à la navigation, il y a trop de collisions impliquant les navires de haute mer, remorqueurs, bateaux de travail, de pêche et les bateaux de plaisance. Les formateurs nautiques prétendent qu'ils enseignent les règlements pour prévenir les abordages (COLREGS), mais la formation a peu à voir avec l'apprentissage. La plupart des gens de mer n'ont qu'une compréhension en surface (ou même aucune compréhension) des "règles de la route" maritimes. En Colombie-Britannique, les collisions ont causé plusieurs morts ainsi que de nombreux sauveteurs traumatisés. Le cours magistral n'est pas la bonne façon de prévenir les collisions en mer. Le campus marin de l'Institut de Technology de la Colombie-Britannique s'est engagé à offrir une formation d'excellence. L'auteur reflète sur son expérience en tant qu'étudiant auprès de l'Institut et suggère à l'Institut d'adopter des méthodes moins autoritaires, plus participatives, engageantes et respectueuses afin de favoriser un meilleur apprentissage. L'enseignement des règlements pour prévenir les abordages est un problème théorique autant que pratique. Les instituts maritimes devraient prendre du recul face à la formation, placer moins d'importance sur l'enseignement et mettre plutôt l'emphase sur le fait que les gens doivent apprendre ensemble.

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Introduction

Two adult education graduate students were crossing Georgia Strait at night in a small sailboat. They ducked the stern of a tug and their boat was almost immediately thrown on its side by the front end of a log boom making way. Just before being sucked under the boom, the students yelled and shone a light at the tug. Seeing the light, the tug operator throttled back and the log boom slowed. The students escaped almost certain death. When the pleasure craft *Sun Boy* experienced something similar, five people died.

In a high-technology era when most vessels are equipped with electronic navigation systems, there are still too many collisions. All over the world, nautical training institutes teach collision regulations (COLREGS). Yet most mariners have only a skimpy (or no) knowledge of them. Why? Part of the answer may reside in the failures of training and the lack of focus on learning.

The author operates a salvage business with workboats, and, as part of the process of securing a captain's licence, needed to study at a marine institute where COLREGS (or, in the United Kingdom, "rules of the road") are the centrepiece of nautical training.

The British Columbia Institute of Technology's (BCIT's) Marine Campus sits on a waterfront location on Vancouver Harbour. In advertising, it promises "excellence in training" (BCIT recruitment advertisement, 2008, p. 34). The author is not averse to excellence and it was a relief to be a participant and not the teacher. With two notebooks open and pen in hand, he was a very motivated learner. But the centrepiece of nautical training—COLREGS—felt like a vessel in trouble: a catastrophe waiting to happen.

The author often crosses busy shipping lanes in rain, fog, or snow. He needs to know COLREGS. With this as a backdrop, the purposes of this study were to:

- Critically reflect on the process of learning COLREGS at BCIT's Marine Campus; and
- Make recommendations concerning the relative merits of nautical training anchored in theory derived from adult or higher education.

Methodology

The author enrolled in, paid money for, and participated as a learner in courses at what is now known as the BCIT Marine Campus. Apart from taking copious notes, he asked questions, participated in discussions, joined lunchtime gossip sessions, sat in life rafts, studied radar and other electronic aids, extinguished fires, went to the library, and completed an exam on COLREGS. He positioned himself as a regular student and workboat operator, and said nothing about other affiliations. This study involved participant observation. The author had three tasks: first, learn COLREGS; second, pass the exam; third, gather data for this study.

The author was an assiduous note-taker, with two notebooks. The first was for notes on rules, aids to navigation, lights, and sound signals. The second was to make notes about the class. Because the instructor did almost all the talking, at times there was not much to put in the second book except comments about students snoozing, yawning, looking out

the window, leaving early for coffee, or displaying other bodily signs of resistance. At first, the instructor did not know notes in the second book were about his pedagogy. But, when the course ended, the author disclosed his purposes to several BCIT instructors who, without much prompting, shared their views on teaching COLREGS.

In addition, for the purposes of the study, there were determined (though mostly unsuccessful) searches for literature on teaching COLREGS. Even BCIT librarians were puzzled by scant resources. Making contact with the Nautical Institute in London, England, yielded nothing. It was the same in Ottawa libraries (such as the one at the National Search and Rescue Secretariat). The author knew what was needed. He has been running commercial boats for more than 25 years, is chair of the Lower Mainland Canadian Coast Guard Advisory Council, and involved with decisions about installation of new and removal of old aids to navigation. He has been an active participant in discussions about rescue diving and destaffing lightstations. He has also been studying, teaching, writing about, and practising adult education for about 45 years.

Collisions Kill

About 53 pages of collision regulations are, simply, COLREGS. All over the world, mariners forget or ignore them—with devastating consequences. COLREGS constitute rules of the road for mariners; they specify what lights, shapes, and sound signals are used and which is the "give way" or "stand-on" vessel in various conditions. For example, if my boat is overtaking yours in a river, which vessel gives way?

Common myths about COLREGS include the notion small boats must always give way to large ones, or that sail gives way to power. Although there are Canadian variations, COLREGS are the ultimate metanarrative. They apply everywhere and, as court rulings demonstrate, are not overridden by local customs or rules. Any mariner, commercial or recreational, should know them.

In a busy waterway like the Saint Lawrence river, Georgia Strait or out on the harbour, serious consequences flow from ignorance of COLREGS. After terrible incidents in British Columbia, it took years of careful negotiation to strengthen COLREGS pertaining to lights on log booms (Canadian Marine Advisory Council, Pacific Region, 2003).

Trainees in nautical institutes are often poorly motivated and lack the energy or interest needed to learn COLREGS. Even officers preparing to run warships or students in the Coast Guard college are not enthused by the task. It is too often a grim and individual process of self-study, where failure on an invalid test leads to loss of face, a stalled career and, dammit, the need to enroll again next year.

Ghastly Consequences

The consequences of failing to obey COLREGS were demonstrated in a horrific fashion when the push barge *Arctic Taglu* collided with the fishing vessel *Bona Vista* just outside Active Pass in British Columbia at around 2:43 a.m., July, 21, 1993. Visibility was good and weather calm. The author was 23 miles away, but responded to this incident with no

idea it would have such serious and long-term repercussions for those involved with the attempted rescue.

Years later, Coast Guard divers who stood on the upturned hull of *Bona Vista* are still traumatized. Six people were trapped inside, and all eventually died. For rescuers, the sound of people pounding on the hull and yelling for help left four legacies (Bell, 1993; Boshier, 2001, Lee, 1993).

- First, rescuers never forgot the screams. One diver went on permanent disability and never returned to the Coast Guard.
- Second, this and similar incidents motivated Rescue Coordination Centre marine controller Mike Stacey (with support from the National Search and Rescue Secretariat) to build a Cap-Sav device, which involves drilling a hole into an upturned hull and inserting air, light, and a communications system.
- Third, the Federal Court of Canada ruled Coast Guard failure to ensure a vessel had appropriate running lights was a significant contributing factor to the accident.
- Fourth, *Bona Vista* stirred up controversy about whether there should be properly trained and equipped rescue divers on the Coast Guard hovercraft (Bell, 1993, p. 1; Boshier, 2001).

The Transportation Safety Board (TSB) report on this incident noted unqualified crew members with inadequate watchkeeping abilities have contributed at least in part, to between 45 and 50 per cent of all collisions, groundings and strikings involving fishing vessels in Canadian waters. As well, the TSB found *Bona Vista* had "non-standard navigation lights" (and was thus in violation of COLREGS). The Board suggested many small fishing vessels had improper lights, and, as such, "potential existed for other collisions under similar circumstances" (Transportation Safety Board, 1996, p. 10). Two years later, on October 31, 1995, *Arctic Taglu* was involved in another collision—this time with the fishing vessel *Roxana Glen* at night on the Fraser River.

Two other dramatic lapses occurred when, in fog, a Royal Sealink catamaran collided with a ferry while heading through Active Pass on its maiden voyage. The sparkling new high-speed catamaran was crowded with television cameras. The accident was an inauspicious start for a fragile company that soon disappeared. The second lapse involved *Queen of Alberni,* a B.C. Ferry which collided with a bulk carrier. For good reasons, ferry collisions attract attention, and, as events in the English Channel, North Sea, and British Columbia demonstrate, too easily lead to multiple casualties.

Five Dead

A Vancouver pleasure boater on *Sun Boy* out to enjoy a fireworks show apparently failed to recognize the significance of running lights on *Jose Narvaez,* a tug towing a barge into Vancouver Harbour. The *Sun Boy* cut behind the stern of the tug and collided with the towline (a steel cable); the boat flipped and five people were trapped in the cabin and drowned (Police probe, 1999, p. 1; Barge lighting, 1999, pp. B1, B5).

After five fatalities on *Sun Boy,* the TSB urged "the Department of Fisheries and Oceans ... to ensure that operators of pleasure craft ... possess adequate competency and basic knowledge of navigation safety, including the requirements of the *International Regulations for Preventing Collisions at Sea*" (the COLREGS) (TSB, 2002). But, like many other TSB recommendations, this one would wither on the vine, and there are still large unresolved questions about learning COLREGS.

Collisions in Canadian Waters

Other recent collisions (and one near collision) in Canadian waters investigated by the TSB were as follows:

- April 12, 1995: Bulk carrier *Ziemia Zamojska* with the cargo ship *Cicero*
- May 28, 1995: Fishing vessel *Eagle* with the tug *Craig Foss* and her barge
- June 3, 1995: Fishing vessel *Sandra Carol* with the tug *Ocean Warrior*
- August 16, 1995: Container ship *Cast Bear* with the container ship *Canmar Europe*
- August 22, 1995: Tug *Brochu* with the oil tanker *Jade Star*
- March 23, 1996: Fishing vessel *Natalie Don II* with the cargo ship *Ada Gorthon*
- August 11, 1996: Large passenger ship *Statendam* with the tug *Belle Isle Sound* and her barge (near collision)
- November 25, 1996: Cargo ship *Mallard* with the bulk carrier *Canadian Enterprise*
- June 23, 1997: Fishing vessel *Nicole Claude* with the fishing vessel *Frederic C*
- July 25, 1997: Bulk carrier *Orhan Ekinci* with the tanker *Bum Dong*
- July 29, 1997: Fishing vessel *Westisle* with the tug *Coastal Destinations* and her barge
- September 10, 1997: Fishing vessel *Navegante* with the fishing vessel *Teresa Maria*
- April 10, 1998: Bulk carrier *Agawa Canyon* with the tanker *Emerald Star*
- August 29, 1998: Ferry boat *Anik* with an unnamed open boat
- September 4, 1998: Fast ferry *Incat 046* with the fishing vessel *Lady Megan*
- September 14, 2000: B.C. Ferry *Spirit of Vancouver Island* with the pleasure boat *Star Ruby*
- November 12, 2002: Cargo ship *Stella Nova* with the bulk carrier *Canadian Prospector*

- May 2, 2003: Coast Guard ship *Sir Wilfred Grenfell* with the fishing vessel *Genney and Doug*
- December 22, 2003: Pleasure craft *Mistral Packmore* with the tug *Tiger Shaman*
- January 11, 2004: B.C. Ferry *Queen of Surrey* with the tug *Charles H. Cates*
- August 11, 2004: Container ship *Canadian Senator* with the pleasure craft *Mondisy*
- August 14, 2004: Pleasure craft *Sheddey-O* with the tug *Elmer H*
- June 3, 2005: Fishing vessel *Sandra Carol* with the tug *Ocean Warrior* and her two barges
- July 19, 2005: Chemical tanker *Jo Spirit* with the bulk carrier *Orla*
- September 12, 2005: Chemical tanker *Maria Desgagnes* with the sailing vessel *El Tio*
- September 26, 2005: Container ship *Cast Prosperity* with the chemical tanker *Hyde Park*

Collisions and Strikings

On June 30, 2005, the B.C. Ferry *Queen of Oak Bay* plowed through a marina and into hard ground in Horseshoe Bay. Only an embankment stopped it from spilling lattes at waterfront coffee shops. Because no other vessels were involved, this was a "striking," not a collision. It was the same on March 22, 2006, when the B.C. Ferry *Queen of the North* struck a rock in Wright Sound and sank, killing two people.

For the TSB, a collision is "an impact between two or more vessels under way" (TSB, 2002). The Canadian TSB investigates only the most serious marine "occurrences." There are no resources for investigating minor incidents. There are many more groundings, fires, and strikings than collisions. Yet, despite radar, global positioning, and an array of other systems, there are enough ship collisions in Canada to merit concern. Many collisions, particularly involving smaller vessels, are never reported.

Table 1 shows the number of collisions investigated by the Canadian TSB in recent years.

Table 1

Number of Collisions Investigated by the Canadian Transportation Safety Board, 1989–2008

Year	Number of collision occurrences
1989	45
1990	33

1991	38
1992	23
1993	27
1994	40
1995	18
1996	21
1997	15
1998	17
1999	22
2000	16
2001	16
2002	15
2003	24
2004	12
2005	20
2006	19
2007	13
2008	15

What looks like a decline does not mean fewer collisions. Federal cuts have limited the number of incidents investigated by TSB inspectors, who are easily overwhelmed by big investigations (such as the Swissair crash or sinking of *Queen of the North*).

After a collision, those involved like to go home and say nothing. Hence, almost every tug and workboat in Canada has dents and damage resulting from unintended encounters with hard objects. On VHF radio Channel 16, there are colourful altercations between mariners complaining about "idiots," "fuckwits," "jerks," and "arseholes" disobeying (or not knowing about) COLREGS.

There are significantly more collisions at sea than those reported by authorities. As continuously noted in TSB annual reports, investigating them all is far beyond federal resources assigned to the task. Hence, investigators look only at large or serious marine occurrences pertaining to prevention.

Lack of knowledge concerning COLREGS is a worldwide, not just a B.C. or Canadian problem. Joshi and Schafer (1997) boldly claimed "the lack of proper interpretation of collision rules is prevalent among most of today's watchkeeping navigators" (p. 10), while in London, the International Maritime Organization, the Nautical Institute, and others debate what can be done. Even Her Majesty's Royal Navy is puzzled about how to do a better job teaching COLREGS and what theory and pedagogy best suits their needs. The learners are adults, but the navy is addicted to training. To what extent can adult education be folded into authoritarian naval or nautical traditions? And is this a job for adult or higher education?

Bad Teaching

COLREGS are an arcane part of nautical training, and bad teaching is legion. The situation is so bad some authorities tried dumping the problem into computer simulations (Sandberg & Stewart, 1996). Using simulators, the learner observes other vessels for several minutes before having to commit to a course of action. However, in far too many jurisdictions, including British Columbia, simulators are wrongly presented as the answer to the problem.

Advocates of technologically mediated forms of learning are prone to lapse into uncritical and utopic thinking. Having made a mess of classroom teaching, they assume learning will be more effective online or in a computer simulation. Increasing numbers of shipowners (such as Seaspan and B.C. Ferries) send prospective employees to BCIT for only basic training. Then, new prospects take on-the-job training using company vessels.

Steer for the Mountain

In British Columbia, only a tiny fraction of inshore (particularly fishing) vessel owners have knowledge of COLREGS. Most seafarers are not deep-sea mariners. Instead, they run small inshore fishing vessels, water taxis, tugs, and the like. They will never see a full-bridge simulator and are not inclined to buy COLREGS training software. They navigate using radar.

Commercial fishermen will bring a relative or neighbour on board as a temporary deckhand, and, not long after leaving port, the newcomer will be standing watch in darkness, rain, or fog.

"Just steer for that mountain and call me if it gets snotty," says the captain as he heads for a bunk.

Because of their importance, COLREGS will continue to be at the forefront of classroom-based nautical education. Hence, the remainder of this article is aimed at classroom instructors in marine institutes looking for ways to motivate learners and engage them in the process of learning COLREGS.

"Have You Got It?"

The author was in the back row of the COLREGS class at BCIT. There were tugboat deckhands, ferry operators, fishermen, whale-watch personnel, and small vessel owners. Several were sent by employers. There were 19 men and two women. Both women insisted they were "fishermen" (and snorted at the Canadian Broadcasting Corporation (CBC) or university notion of "fishers"). The two women knew more about COLREGS than anyone else in the class.

We were 21 individuals. But there would be no getting into a circle for introductions or efforts to attach names to faces. All that mattered was course content and the exam. Experienced mariners were in the room, but their perspectives would not count for much. However, because collision regulations are a pedants paradise, and involve matters of life and death, the author was excited.

The instructor entered, stood behind a raised lectern, and looked at a copy of the *Office Consolidation of the Collision Regulations* (with Canadian modifications). An Englishman, he looked to be about 65 years old, had grey hair, and wore a navy blue sweater with a nautical logo embroidered on the starboard side. There was a blackboard behind him, a window with a harbour view to the right, and no sign of teaching aids such as models.

He cleared his throat, looked over his glasses, said he was a retired sea captain, and started to lecture: the short title, the interpretation, the application, the standards. He looked down to read a sentence, then, for some rules, removed his glasses, looked up, and scanned the class.

"Have you got it?"

And so on—day after day.

"Write it down. It will all be on the exam," he said.

"Have you got it? he asked, looking over his glasses. "Then let's move on ..."

"'Rule 27: Vessels not under command or restricted in their ability to maneuver.'" He read the rule and made eye contact with the class.

"Have you got it? Yes?"

If nobody said anything, he would go to the next rule. Nobody dared admit they had not "got it." The author was tempted, but not "getting it" was something better suffered in private. Besides, the exam was still far away.

"'Rule 28: Vessels constrained by their draft.' Have you got it?"

After many years at sea, he had come ashore and was now a nautical instructor. He had no alternatives to the lecture. Knowing it was tedious, he punctuated the class with war stories: "Once we were in the Red Sea when the *Hercules Maru* came around the corner and the old man said pass to starboard." War stories filled up class time, but created few ripples of delight. For a generation accustomed to text messaging and YouTube videos, grey-haired sea stories did not mean much. Just as the instructor was hard-pressed to use learner experience, the class would not be validating his. The author enjoyed the war stories, but many classmates yawned. Many resented being there.

Boston versus Vancouver

On about the fourth day of the course, we were into traffic separation schemes when a young fisherman wearing a singlet and boots looked at his watch and realized the Vancouver Canucks ice hockey team was playing in Boston. It was an important game and would be televised in the pub across the street. Nicknamed "Big Bruiser," he promptly left with most classmates in tow. Books and pens left on desks indicated they might be back when the game ended.

"It ain't easy! Students are not what they used to be," ventured the author to the instructor who looked with disbelief at empty seats.

Not to be deterred, the instructor gamely continued to explain traffic separation schemes – such as the one off Point Grey in Vancouver. A few hours later, errant learners (and soon to be mariners) returned, most smelling like a brewery.

The two women had remained in class, but now asked for the hockey score. With the score settled, the instructor coolly said, "Shall we continue then?"

Rule 37: Distress signals. Thirteen of them, including "a square flag having above or below it a ball or anything resembling a ball." Or a "smoke signal giving off orange coloured smoke. These are distress signals."

Have you got it?

When winter flu arrived, the instructor had to cover classes for sick colleagues. We were now left alone in the classroom—for hours at a time, or an entire morning. There were too few instructors to teach all the scheduled classes at the Marine Campus.

It was reassuring to know senior administration was not running a ship—just a training institute. Nobody would die because learners were badly treated or the institute poorly managed. Other participants seemed to regard the situation as normal, and several spent the morning in the cafeteria. Those who travelled long distances in darkness to make it to early morning classes went looking for an instructor. Nascent student resistance was quelled with talk of impending exams.

Although the absence of an instructor created spaces for self-study most classmates did not see it this way. No instructor meant no work today. Nobody went to the library, nor was there any notion of getting into groups to learn from each other.

After the instructor had been gone two hours, the author went to the front, showed flashcards, and tried to animate a participatory approach to learning COLREGS.

"Come on you guys, let's learn something."

The author had no authority with this group. He was not a fisherman, was older than the rest and had been accused of using "ten-dollar" words. Coupled with his assiduous note-taking, ten-dollar words and asking questions created suspicion. Moreover, the author had sought help from the two women, and Big Bruiser was resentful.

Big Bruiser urged classmates to ignore the author's flashcards, and most did. Only the two women and one or two younger and more terrified male fishermen responded. Others wanted to participate, but were dissuaded. With the instructor absent, it was cool to do nothing.

Later in the course, Big Bruiser arrived at class looking like he'd been hit by a halibut. He had a black eye and a limp. A cheekbone popped from his face. Rumours claimed there had been a pub fight over a girl. It was a matter of honour. He now snoozed through lectures. He was being groomed to take over a big boat from his dad and would be driving a powerful dragger through boisterous seas off the west coast of Vancouver Island. There would be tremendous forces on boards and nets hanging off the stern. Draggers are large and dangerous.

Big Bruiser would see red and green lights off his bow. But would he know their meaning? Off to starboard he would notice a vessel with three white lights in a vertical line. Would he realize this meant a tug and tow were in the area? If he heard five toots on a horn, would he know the meaning? What about a vessel displaying a ball and diamond in its rigging? These were important matters but could be left to later. For now, his pride was wounded and face hurt.

"Shall we continue?" said the instructor with just the slightest trace of a smile at Big Bruiser.

In trade magazine advertisements, BCIT says, "Many of our instructors are master mariners with worldwide and local experience, utilizing their extensive skills to deliver a wide variety of courses" (Recruitment advertisement, 2008, p. 41). Our instructor had seen a lot and retirement was just over the breakwater. There were many things he could have said to Big Bruiser, but he dared not make inquiries of a personal (or even professional) nature.

The instructor understood boundary maintenance. He was like the captain (or old man) on a ship. What Bruiser did in his personal life was one thing, COLREGS something else. The instructor had seen too many intoxicated waterfront struggles over women, and, in the end, believed the exam would sort out triflers.

"So ... shall we continue? What about Rule 2(b)?" he said, looking at Big Bruiser.

" 'Rule 2(b): Due regard shall be had to all dangers of navigation and collision and to special circumstances'," he read.

The old man was telling Bruiser something about life. The two women understood, and looked at the bereft fisherman. But Big Bruiser wanted sympathy, not an elaboration of COLREGS or lectures on the meaning of life. Under the black singlet was a vulnerable man suffering the wrath of a demanding father. He was also terrified of the exam.

The instructor was again slowly reading the rule. "'Rule 2(b): Due regard shall be had to all dangers.'"

"Due regard!"

"All dangers."

"Have you got it?"

Overcoming the Exam

For most of the group, COLREGS had little to do with running vessels at sea. As the instructor reiterated time and again, the rules concerned only two things: "covering your arse" and "passing the exam." This was a central theme of lunchtime conversations, and the instructor was an accomplice in this construction of why we were there. There was even an acronym: CYA! Learning was rarely mentioned. It was wrongly assumed all teaching involves learning.

There were elaborate dissections of the personalities of various Coast Guard examiners. Rote memorization was the favoured strategy. Those in the know claimed it was necessary to get old exams from the library. This year's exam would be built from items randomly drawn from earlier versions. At first the author resisted this plan, but then did the same as the rest. He got old exams from the library and was shocked to find many items violated the most elementary rules of test construction.

Poorly Constructed Tests

Multiple-choice tests are an inferior way of examining something as dynamic as vessels making way on water. The COLREGS exam violated most rules pertaining to multiple-choice test construction, and, in some cases, even instructors were hard-pressed to pick "correct" answers. Item stems were poorly written, and, in some cases, the gradation between correct and incorrect responses so piffling only a pedant could detect what was going on.

Sometimes all responses were correct, but some allegedly more correct than others. Most worrying were items where a wrong answer was scored correct. It was important to identify these, and, during the exam, deliberately choose the incorrect option because it would be scored as the right one. There were too many items offering "none of the above" or "all of the above" as possible answers. The fact the U.S. Coast Guard or Royal Navy in the United Kingdom are infatuated with multiple-choice tests does not excuse their use in Canada. The author felt sorry for classmates and concerned by his own impending performance.

COLREGS Rule 5 says, "Every vessel shall maintain a proper lookout . . . so as to make a full appraisal of the situation." So there is a place for subjectivity, even common sense and good judgment. Despite this, the multiple-choice test did not make room for subjective ontology or qualititative perspectives. It was a matter of right or wrong. Port, starboard. Bow, stern. Red, green. Right, wrong. CYA!

Any Feedback Is Better Than None

Heaping questionable pedagogy on psychometric incompetence and professional malpractice, the testing authority would not tell candidates their final scores. They justified this by claiming embarrassment could occur if, at B.C. Ferries, a deckhand scored 98% while a captain or first officer scored 48%. What mattered most was not COLREGS or running ships. Instead, it was the status of the ship's officer, the maintenance of company discipline, and saving face.

There was now a possibility of student rebellion and the author would have been a willing leader. If Big Bruiser was capable of starting a pub fight, how would he respond to bad test items? Withholding marks shielded BCIT and the Coast Guard from irate learners. So much for immediate being better than delayed feedback.

By the time classmates were told they had passed or failed, the class had disbanded and most learners had gone to sea. There never was much student solidarity, and it would be difficult to organize a rebellion after the course ended. Even so, the author was determined

to get his marks. He had not sat an exam for many years, and was intensely interested in this one. He tried charm, persuasion, admonition, and chatting-up the secretary at the exam office. How about lunch? Nothing worked. At the time, these were Coast Guard exams, but are now administered by Transport Canada.

By 2009, the Coast Guard had a program of education for recreational boaters. It was being phased-in according to the age of the boater. By September 2009, Canadian boaters were obliged to have a plastic card attesting to their competency. Competency was assessed with a multiple-choice test administered online by sometimes inept, corrupt and dodgy "service providers."

How many rotten multiple-choice items reside in Transport Canada, Coast Guard, and boating-safety service provider computers? The rise of mediocrity disguised as excellence and the decline of interest in quantitative methodologies at universities have spawned an epidemic of bad tests. Even Canadian police officers have to endure psychometrically-flawed multiple-choice tests.

A multiple-choice test is not a durable predictor of piloting or boat handling skills. In Atlantic Canada and British Columbia, many competent and successful commercial fishermen are running multi-million dollar boats without having sat a COLREGS test. As well, many people responsible for collisions have passed a COLREGS exam. Even Coast Guard ships and B.C. Ferries have collisions. What most matters are boat handling and making good judgments, not the ability to navigate flawed multiple-choice exams.

Invoking Adult Education

Videos, CD-ROMs, and other devices can make the process more interesting, but they reinforce unequal power relations and construct learners as passive recipients of information. Even interactive simulators like Sandberg and Stewart's (1996) make learning an individual rather than a collective process. The solution resides in learners and their active involvement.

The best adult education respects and uses learner experience. Learning is a social and active process, and the responsible instructor will create a climate wherein participants learn from each other. The instructor should ensure participants understand principles or theory buttressing each regulation, or, as Joshi and Schafer (1997) explained, there must be "understanding" and "interpretation." Although simulators, flashcards, videos, and other devices are useful, there is more to learning than rote memorization or so-called "awareness."

Different cultures call for different processes. Because many training establishments lack resources, the impoverished but conscientious instructor can secure scrap wood and make model ships with lights and shapes easily mounted or removed. Participants can work in pairs, maybe using cue sheets to name the regulation to be simulated. The physical act of moving models, correcting courses, giving way, standing-on, and the discussion and reasoning evoked by these actions, will result in more learning than if students listen to a lecture or snooze through PowerPoint presentations.

As well as COLREGS, the author needed to complete courses on marine emergency duties, electronic communications, and piloting. Piloting involves navigation and a condensed version of COLREGS. In this course, the author had a chance to compare the Big Bruiser class with one taught by Captain Peter Ireland.

Ireland was reputed to be one of the better and more participatory instructors at BCIT, and he provided a good demonstration of what is possible with meagre resources. He used models to create collision scenarios and continuously asked, "Who gives way?" or "Which is the stand-on vessel?" People called out responses from all corners of the room, and then, most importantly, Ireland would ask, "Why is this the stand-on vessel?

"Why, why, why . . . ?"

Sometimes he created situations where the needed action was unclear, and Rule 7(a)—"use all available means appropriate to the circumstances"—would be invoked. Rule 2—"nothing in these rules shall exonerate any vessel ... from the consequences of neglect"—evoked animated exchanges.

After boisterous sessions where participants challenged the instructor and COLREGS, the class would be broken into pairs to work with models, flashcards, or pencil-and-paper tasks.

Ireland's class was based more on adult than higher education methodologies. He ensured participants were working together and encouraged informality and frivolity. He deliberately asked quiet learners for a response. "Which is the stand-on vessel?"

After hearing an answer, he looked at the rest of us and said, "Is he right?"

"Yes," the class yelled.

"Why? Why is he right? Why, why, why?" asked Ireland, looking for the reason behind the rule.

As the noise level increased, questions became more complex: "Here is a float plane taxiing on water. It has a sailboat to starboard making way under power, and they are on a collision course. Which is the stand-on vessel?"

"Why, why, why ... ?"

Ireland's ship models were rudimentary but effective. It would not have taken much effort to break this class into groups, give them props, and then, using theatre, song, or mime involving high levels of audience participation, have them creatively teach a cluster of COLREGS to classmates. Or the class could have gone to the field outside, with some people dressed as buoys or lights to make a seaway for others to navigate. Ultimately, the best place to learn COLREGS is on a boat or ship at sea.

Conclusions

Too much marine education excessively foregrounds nautical traditions and the unchallenged authority of the "old man" (personified in the instructor). In another course (on emergency

duties), the author was told to stop asking questions and to "write down the lecture because it will be on the exam."

What is now needed is an approach to nautical education less founded on authoritarianism and more nested in recognizing that citizens and seafarers are in the same boat when it comes to averting tragedy at sea. Rote learning and uncritical acquiescence to rules for the purpose of passing exams or pleasing the old man are not acceptable.

Theoretical and Practical Problem

Responsible marine institutes will espouse an ideology of lifelong education committed to learning in a variety of formal, non-formal, and informal settings. There should be a willingness to let go of traditional pedagogy and find ways to involve learners.

What is needed is less training and more education, less lecturing and more learning, less abuse of power and more respect for learners. Learners should be constructed as participants rather than trainees. Before leaving for class each day, the instructor should ask, "How can I involve the learners?"

The worldwide lack of knowledge concerning COLREGS is as much a theoretical as a practical problem.

- Nautical training traditions are authoritarian and have more to do with maintaining the authority of the old man (the instructor) than with fostering vibrant forms of learning.
- Even instructors reinforce the notion teaching COLREGS mostly concerns the test, and not life at sea.
- Many nautical instructors are retired seafarers who teach in the manner they were taught. "It didn't do me any harm, so will be good for you!"
- Nautical training establishments are not research institutes. But, without research, there are few opportunities for instructors to reflect on the poverty of their pedagogy.

Embrace Adult, Not Just Higher, Education

It is tempting for instructors in nautical settings to latch onto higher education and the Scholarship of Teaching (SoT), which keeps the focus on the teacher and seems to justify creation of deadly PowerPoint presentations. When criticized for putting an undue emphasis on teaching, SoT advocates added learning. Although SoT became SoTL (Scholarship of Teaching and Learning), teaching is still at the centre and learning at the margins (Boshier, 2009; Boshier & Huang, 2008).

Invoking higher (rather than adult) education theory helps maintain boundaries between nautical instructors and frustrated learners. It reinforces the authority of the teacher and school-like atmosphere at marine training institutes.

Opting for adult education processes would cause instructors to be more open to feedback and join with participants in creating innovative and participatory learning activities. It would erode boundaries between teachers and learners.

Nautical educators need to foster community amongst learners and find more humane and less flawed ways to assess learning. Participatory techniques and respect for learner experience — as foregrounded by Knowles (1982) — may not excite the left wing of academic adult education, but would be a revolutionary development in nautical training.

There is also a strong case for developing instructional techniques tied to different dimensions of COLREGS learning. For example, in Gagne's (1985) model, learning names assigned to buoys represents verbal information; distinguishing one aid from another constitutes intellectual skills; knowing what to do in an emergency for which there is no precedent involves cognitive strategies. In addition, the learner needs to acquire appropriate attitudes and motor skills.

Because many navigation mistakes stem from cognitive errors, there may be a place for cognitive-behavioural theory. But, given the circumstances in many marine institutes, it is overly optimistic to think instructors can treat cognitive dysfunction or errors. Instead, just getting people to cooperate and take on some attributes of lifelong learning would be a major accomplishment. In very significant ways, collision avoidance depends on adult education making inroads into nautical training.

Recommendations

These recommendations flow from the author's experience studying COLREGS at the BCIT Marine Campus:

- COLREGS are best tackled in a social context where people learn together. Create "communities of practice" (Wenger, 1998), drawing on the diverse backgrounds and knowledge of learners. Erode the individual grind of learning COLREGS by getting people to work together.
- Even if it runs counter to naval or nautical traditions, break learners into groups and have them teach COLREGS to each other using creative means (e.g., theatre, songs, video).
- Never assume answering questions on a multiple-choice test translates into the proper management of a vessel at sea. Get learners onto boats and out among different lights, marks, and sounds as soon as possible.
- Have instructors put effort into preparing meaningful and participatory learning activities and events. No more droning-on from a lectern and reading COLREGS. No more using PowerPoint to render students docile.
- Ease up on teaching and training, and focus on learning.
- Marine institutes should hire adult educators into senior management positions.

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