Canadian Council of Professional Fish Harvesters

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Stability simulator: home computer could save lives at sea

The roll of a boat can be pleasant or exciting, until that one occasion when it goes too far. Stability is a matter of life and death, and the Canadian Council of Professional Fish Harvesters is working on a new way to help keep fishing vessels right side up.

Whether your boat is big or small, looking at the stability statistics can give you a sinking feeling. Here's a quote from the Transportation Safety Board (TSB) report on a 2002 sinking: "Since 1990, TSB investigations into the capsize, foundering or sinking of 47 inspected small fishing vessels of more than 15 GRT, and 29 uninspected vessels of less than 15 GRT, have shown that these occurrences were primarily due to inadequate intact stability or stability-related unsafe working practices."

Many more incidents have occurred since then, and Transport Canada (TC) is planning new regulations. Changes in the works include more stability tests for vessels and more stability books,

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Keeping them safe: the proposed e-simulator would help Canadian fishermen across the country with stability training. (Photo courtesy of Wayne Bungay, Small Craft Harbours, DFO Newfoundland)

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which give technical information about the craft in different loading conditions. TC also wants stricter training requirements for fishermen. (See our June 2006 and December 2006 newsletters and the TC Website for more information.)

But vessels sometimes capsize even if they've had stability tests and carry stability books. Stability books are not that easy to understand and training courses sometimes fail to do the trick. Here's a quote from that same TSB report: "There continue to be occurrences involving fishers who, although having attended training courses, persisted in the use of unsafe practices. Therefore, formal training for fishers may not always achieve its objective of promoting practical application of classroom theory."

In other words, we need additional ways to spread knowledge. The report noted that "adults learn best when learning activities reflect their individual learning styles, take advantage of previous experience, relate to their everyday world, and simulate real world situations."

Fishermen generally agree that education awareness is key, but has to be done right. Discussions through the CCPFH Health and Safety Committee pointed to a new approach. If airplane and ship pilots use electronic simulators for training, and if video games draw the user in, then what about developing a game-like stability simulator for fishermen to use on their home computers?

When the Council in March, 2006 brought together fishermen's representatives, TC officials, fishery-school educators, and stability

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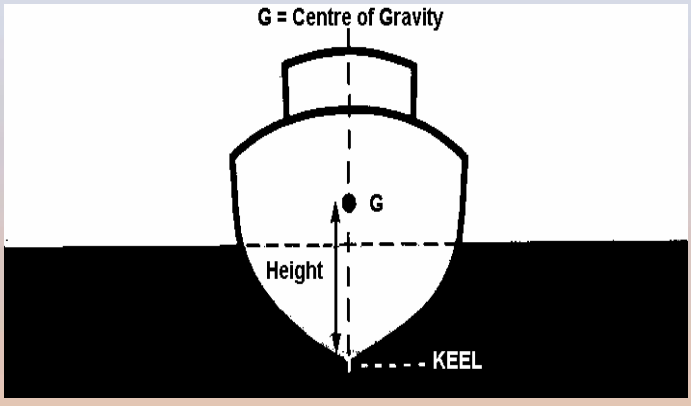

There's lots of stability information out there; the trick is to get it across to large numbers of fishermen. The centre of gravity depends upon weight distribution within the vessel and its position can be found by use of an inclining experiment. (Illustration courtesy of Roy Gibbons, Fisheries and Marine Institute)

Photo Contest – Favorite Picks!!

Here are some wonderful photos we've received as a result of our photo contest. You'll surely see these and many more in our future newsletters and publications.

Thank you to everyone who made an entry.

Photo submitted by Aiden Mahoney

Photo submitted by Captain Peter Noel

Photo submitted by Monique Anne Morin

Photo submitted by Josh Duncan - NBBC

Photo submitted by Mark Dolomount - PFHCB

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experts including a consultant to the U.S. Coast Guard, it turned out that no such simulator yet existed for smaller fishing vessels. But everyone agreed there should be one.

A working group developed the concept further. The preparatory efforts culminated in February and March 2007 workshops in St. John's, Newfoundland, again with broad representation from the industry, fishery schools, and safety authorities.

Photo courtesy of Provincial Airlines, Marine Surveillance Division, St. John's, Newfoundland

"The concept still looks good to all parties," says John Sutcliffe, executive director of the CCPFH. "The workshop made real headway and project planning is now well underway."

"Fishermen want a hands-on experience that feels real to them. Educators want a program that can work at home or on the vessel and optionally support classroom learning. The safety authorities want to get stability principles across, however it's done. And everyone agrees we need the video artistry to make it work."

As currently envisaged, the electronic "e-simulator" would give the stability feeling of vessels less than 65 feet long, especially those under 45 feet. That takes in the vast majority of Canada's fleet of more than 20,000 fishing vessels. The e-simulator program would combine a DVD with a workbook and an Internet site for Web-based learning.

Film clips and interviews would combine with interactive, video-game-like segments and instructional displays. From an on-screen selection, the user could choose a particular bay or other location to work in, and then select a vessel type resembling his or her own craft. The virtual vessel could be reconfigured with various gear arrangements and different loads, to show the effect on stability.

Different segments of the program would impart different principles of safety and stability in a friendly, easy-to-use manner. For vessels with a set of design lines, normally those over 15 gross registered tons (GRT), that architectural information could be incorporated so that the fish harvester would have a more exact version of his or her vessel in different conditions.

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(Presenting the vessel in different sea states would also be desirable, and may be possible using computer generated animation.)

Working through all the different levels of the proposed e-simulator, and learning about centre of gravity, buoyancy, roll-period testing, and much more, would take many hours all told. At the end, the fisherman would know the basic principles of stability in a way that he can intergrate and picture for real day-to-day fishing. The e-simulator could provide access to a stability learning environment and supplement classroom training. On its own, it could provide vital information to thousands of fishermen.

The e-simulator project is generating a series of cooperative partnerships accross the country that is likely to result in formal project activity in the near future. Because of the simulator's potential usefulness for home and classroom training, in Canada and internationally, various agencies are expected to provide funding. Development could take two years.

Newfoundland's Fisheries and Marine Institute and CCPFH will lead the effort.

Fishermen will be involved all along the way. Co-operation is also coming from provincial fisheries schools, Transport Canada, and other parties including Human Resources and Social Development Canada. The project steering committee includes representation from the fishing industry, fisheries schools, and Transport Canada.

The CCPFH's aim is to make the simulator available to Canadian fishermen at little or no cost.

"Everyone who fishes knows of someone whose boat capsized," John Sutcliffe says. "That's why we're getting good support for this project from fish harvesters, and other parties as well. The Council is determined to see the project through."

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Look for our next newsletter to be published in July 2007!

Picture Submissions

The Council is always looking for photos to use in our newsletters and other promotional materials. If you have a commercial fishing related photo, we'd like to see it.

The pictures featured in this newsletter are just a few of the wonderful photos we've received.

Any originals you send us will be copied and returned to you or email your digital pics to fish@ccpfh-ccpp.org

Thank you to all who have sent us photos. Please continue sending us your pictures!!!