



"Thermofloat" jacket demonstrated by University of Victoria scientist John Hayward, one of its developers.

New life-jacket triples survival chances in cold water

The number of deaths caused by exposure in oceans and lakes will be lessened through the efforts of three scientists at the University of Victoria (UVic) in British Columbia.

After four years of research, much of it in the chilly Pacific waters surrounding Vancouver Island, on which the City of Victoria is located, Drs. John Hayward, Martin Collis and John Eckerson have developed a windbreaker-style jacket to triple the time of survival in cold water.

They have also come up with data that dispels a number of often fatal misconceptions about how people should behave and how their bodies react when they have been plunged by accident into cold open water.

The new UVic "Thermofloat" jacket, which was introduced on the commercial market earlier this year for a price of about \$70, can be worn for years as an ordinary windbreaker on land or sea, but which with a few simple adjustments can be transformed immediately into a floating wetsuit.

"In my opinion, it's the world's best all-around life preserver," said Dr. Hayward, who is in charge of UVic's "Man in Cold Water" project.

The jacket, insulated with closed-cell foam rubber, has a flap tucked in the back that can be brought up under the groin and around the thighs, which

seals the wetsuit around the torso. A protective hood hidden in the collar, the colour of bright orange, has reflecting tape to increase its visibility in the dark. Inside pockets can also contain a "mini-raft", which increases survival time, and a flare-launcher the size of a pencil.

Loss of body heat factor

Dr. Hayward noted that, until now, regulation life-jackets for boaters, fishermen and sea-rig operators had been designed to prevent drowning when in fact a significant percentage of deaths were due to exposure caused by hypothermia (loss of body heat).

"In all waters, save tropical, hypothermia is a threat," said Dr. Eckerson.

"Cold water safety is a sadly neglected area of water safety around the world," Dr. Hayward said. "When one normally thinks of water safety, one thinks of the danger of drowning. But since the avoidance of drowning is so easy with flotation devices of many types, then the real significant problem that's left, and isn't easily solved and which so few people haven't really been thinking about, is exposure. And this can happen all too rapidly in waters such as Canada's."

In waters as cold as those off the coast of British Columbia (between 5

and 10 degrees Celsius year-round), people have been found dead only a few hours after a boating mishap. This would not have happened so soon had the victims known how to behave properly and had vital areas of their bodies — chest, groin, neck and head — insulated against the cold in the manner provided by the thermofloat jacket.

With the jacket, a person's life expectancy is extended from two or three hours to nine or ten hours in water near 10 degrees C. Without the jacket and using behavioural techniques recommended by the UVic scientists, survival time can be increased to four hours.

"The important thing is that we're not trying to give indefinite survival-time increase. We're trying to get every extra minute or hour we can so there is a better chance for rescue," they say.

Most of the work on hypothermia was done by German scientists at Dachau who, by cooling prisoners to a near-death temperature below 30 degrees C were exploring ways of rewarming persons. Considerable research on cold air carried out in Canada's Arctic has some bearing on cold-water survival but it probably had inadvertently led to fatal confusion in the minds of many boaters: that the more active one is in cold water the warmer one keeps. That's fine in cold air, said Dr. Hayward, but in cold water the opposite is true.