

Man in cold water gambles to test heat treat

Two Canadians have developed an emergency rescue treatment for people suffering from the potentially fatal chilling of the body's inner organs known as hypothermia.

The new rescue device has been named the Heat Treat by its inventors Dr. John Hayward and Robert Douwens, of the University of Victoria in British Columbia.

Until recent years it was assumed that the greatest threat facing people in boating accidents was drowning. The greatest threats facing those lost in the wilderness were, naturally, assumed to be starvation or attack by wild animals.

These assumptions have been disproven by research — much of it conducted by Hayward, and Drs. Martin Collis and John Eckerson of the School of Physical Education at UVic — showing that in cold water and climes, the greatest threat of all is often hypothermia.

After spending several years studying animal hibernation, Hayward and his colleagues began in the early Seventies to look at the body's responses to immersion in cold water. Working with a research team and volunteers who subjected themselves to carefully monitored testing in uncomfortably cold water, they began developing a science of cold water survival.

"Cold feet don't kill. It's the heart"

The team came up with detailed advice on what people can do to stay warm

longer in potentially fatal conditions, and designed and patented the UVic Thermo-float jacket, now the best-selling flotation jacket in the world. They also developed the SeaSeat, an inflatable pint-sized raft which can be carried in the pocket of the Thermo-float.

However, Hayward explained that up to now, there had been a gap in the research. The problem of hypothermia has been identified and techniques and equipment to combat rapid cooling developed, but the problem of what to do to rewarm people who have reached hypothermic levels before rescue remained unresolved until recently.

Treating a rescued hypothermic victim is tricky due to the dangerous "afterdrop" factor, a cooling of the body's core temperature that continues even when the outer body is being rewarmed, "It's the cooling of the heart that is critical. A heart temperature near 28 degrees Celsius kills.

The afterdrop can increase if the body is rewarmed from the outside in rather than from the inside out. Once the extremities and skin temperature are restored to normal, the message "I am cold" does not go to the brain. Nevertheless, the core temperature continues to drop as increased circulation drives cold, stagnant blood from the peripheral tissues to the inner body.

About five years ago, Hayward's research team began collaborating with the

United States Coast Guard on a study of rewarming methods. They found that inhalation of moist, warm air through the respiratory tract and lungs delivers heat where it is needed most — into the chest.

Methods of inhalation rewarming are now used routinely in hospitals and an electrically powered inhalation rewarming unit has been developed for the field, but electricity is not always available in remote regions where hypothermic victims are found.

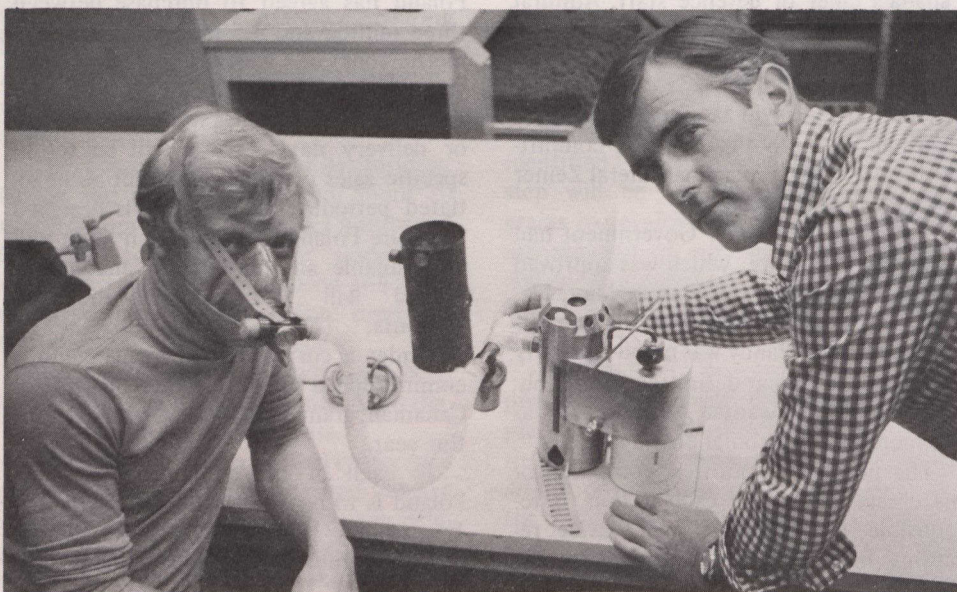
Using coffee cans, Douwens started making prototypes for a "propane-fired sophisticated kettle". He also designed a face mask and air tube and a valve system which controls the mixture of steam and air breathed to ensure a temperature of 44 to 45 degrees Celsius.

The stainless steel device is light (three kilograms), portable, works independently of electricity and — very important from a rescue party's point of view — works almost instantaneously even in extreme cold. It starts producing steam within ten seconds, saving time which could be crucial to the life of a seriously hypothermic victim.

Manufacturers have also expressed interest in the Heat Treat but Hayward and Douwens postponed responding until the final tests were conducted last summer.

The cost of producing the unit by hand is estimated at about \$500, but if it is mass-produced the retail price could be about \$200.

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Donna Danylichuk

Inventors Douwens (left) and Hayward want a local firm to help heat cold hearts.

Canada-U.S.S.R. sign exchange pact

Canada and the Union of Soviet Socialist Republics signed a two-year program of scientific, academic and cultural exchanges at the conclusion of the Fifth Canada-U.S.S.R. Mixed Commission Meetings held in Moscow, November 19-22, 1979.

The Mixed Commission was established following the signing of an Exchanges Agreement between Canada and the Union of Soviet Socialist Republics in Ottawa on October 20, 1971. The Mixed Commission usually meets once every two years, alternately in Canada and the U.S.S.R., to review the progress of the existing program and to develop a program for the following two years. The recent agreement will cover the 1980-81 period.