Electrical/Computer Engineering Design Project Proposal

Title: *Retail Ice thickness Sensor for Level Ice Use Safety*

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Supervisor: *T.B.D.*

Description

The challenge is to come up with the electronics and packaging for a device that can detect and read-out the thickness of an ice cover without augering holes. The idea is to mount the device in a shaft/rod that can be carried like a walking stick or ski-pole. A send-receive sensor may be placed on the bottom end providing the raw (acoustic?) data - with a micro processor and readout on the handle so that one can easily and rapidly test ice thickness as one advances out onto a frozen water body. Perhaps by the action of tapping the stick on the ice - or by discharging a ping, the readings may be taken at discrete locations (not like continuous feedback of metal detectors).

Two analogues of this may be considered - small hand-held a fish finder acoustic device, and, a blubber thickness device used to measure fat on living/swimming whales. The product is to be developed with the idea that it become a retail item for sale and use across the country - by organizations such as schools, outfitters, fire departments, etc.

Roles

1. *Three EE or CoE students could work on this project. Skills and interests include signal processing, electronics design, user interface design, packaging.*