

Killing the Kill Cord

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Problem:

Some of the deadliest accidents occur on boats due to incorrect use of the kill cord. Correctly used, the kill cord is effectively a string attached to the operator of the vessel, which in the event of an ejection, will be pulled away from the ignition, forcing the engine to stall. Unfortunately, this can be unpopular with the public as it requires wearing a physical device and therefore can be a nuisance at times such as needing to move away from the engine or switching drivers. Failures have also occurred in the past in which the cable has snapped due to environmental or production issues.

Intended Solution:

The intended solution to improve safety is to detect whether there is an operator at the controls and turn the engine off accordingly. This can be done with sensors around the helm, and integrated within the controls. A wide range of sensors will be evaluated over the course of the project, with the most suitable option being carried forward. Based on the feedback given by these sensors to a microcontroller a judgement will be made on the situation, and the necessary action will be taken. For example, there is no need to cut out an engine if the boat is in neutral and the drivers are swapping over, but if the operator is ejected at high speeds the engine will be stopped immediately. Environmental factors such as the salty water will be considered as they may affect operation of the sensors. Most importantly the need for a physical device to be worn is eliminated, therefore taking out the risk of human error. A prototype will be made in order to test and demonstrate the system.