Boating Accidents

Accelerating up a wave and causing boat to launch 40ft into the air. Impact upon landing caused the boat to crack in half, injuring the passengers and driver. <http://www.dailymail.co.uk/news/article-2298785/Dramatic-moment-600k-powerboat-flung-40ft-air-driver-speeds-huge-wave.html>

Sensors involved: Throttle – Detects acceleration. Accelerometer – High impact. Touch sensors – Judgement of control of boat

If the driver becomes unconscious due to the impact he will most likely let go of the steering wheel and throttle leading to the engine stalling. The initial force would also trigger a high alert situation with the information gathered from the accelerometer.

Powerboat is travelling at extreme speeds and hits a wake causing the driver to lose control. http://jukinvideo.com/videos/focus/Crashes-Boat/seven-person-boat-crash/147/4387/1/5rZXN0NTpxAlGx5AngVZhlu5ze5Cz74x

Leading up to the incident the driver rapidly accelerates with full throttle reaching a high speed. Once the high speed is achieved the throttle is eased off but the speed is maintained. This is because a bow forms in front of the boat (powerboat handbook) meaning less of the boat is on the water, reducing overall friction. Therefore, a solution needs to be found to obtain a predicted speed instead of simply relying on the throttle position. A count down system could be programmed so that the predicted speed is slowly reduced. Also, rapid movement of the throttle is made as the driver attempts to control the movement of the boat. Roll also occurs as the boat becomes thrown about, in an ideal situation the system would be able to reduce the revs of the engine, but this requires a compatible component.

High speed turn causes all passengers to be ejected from the RIB. <http://www.theguardian.com/uk-news/2014/jan/30/speedboat-crash-kill-cord>

When cornering at high speeds the centrifugal force can violently throw the passengers about, occasionally leading to ejection as such in this case. Both the accelerometer will show high readings and if the driver is unable to stay in control the touch sensors will relay this information back to the system leading to a safe shut down of the engine.

No information how, but out of control power boat injures children in rowing boats. <http://www.sunshinecoastdaily.com.au/news/coach-91-says-age-no-factor-powerboat-accident/2426180/>

Adds to the need of extra safety.

A report with information on the main causes of boating accidents and deaths during 2013 in the U.S.

<http://www.uscgboating.org/assets/1/AssetManager/2013ReportRevised.pdf>

46% of accidents occur in open motorboats with the most likely cause being operator inattention. Operator inattention is not well specified, however other elements such as sharp turns are also listed.