

**The Torso Model –
a Tool for Unmanned Testing of
Self Righting and Stability
Properties of Life Jackets**

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GOAL OF THE DEVELOPMENT OF THE TORSO MODEL

- **Develop a test arrangement for unmanned testing of turning force and stability of life jackets in adult as well as children sizes.**
- **The method should demonstrate reproducible results in standardized, repeatable tests.**

SELF RIGHTING PROPERTIES

- **Testing performed using human test subjects**
- **The behaviour of the test subject can influence strongly on the results**
- **Test method not sufficiently specified**
 - **body speed in water**
 - **position of hands**
 - **lung volume**

Result: Variability in the results obtained for the same life jacket in repeated tests.

STABILITY PROVIDED BY THE LIFE JACKET

- **No standard specify requirements for stability provided by the life jacket**
- **No test method available to measure/estimate the stability provided.**

TORSO-MODEL

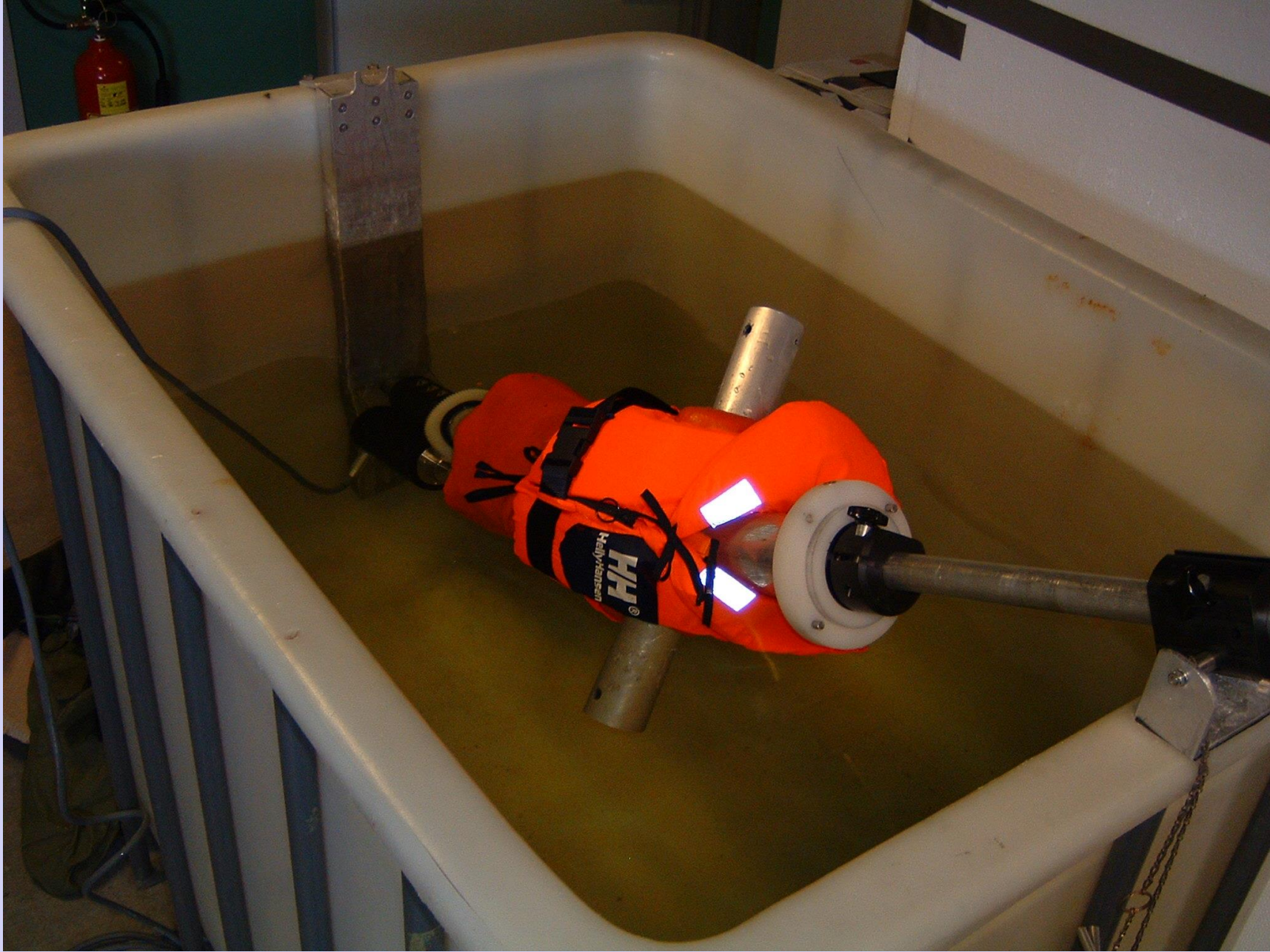
- **Consisting of a torso (adult or children size) made in fibreglass mounted on a centrally positioned axis.**





POSITIONING IN WATER

- **The body axis with the torso can be positioned in a water filled test tank in any selected angle with the water surface.**

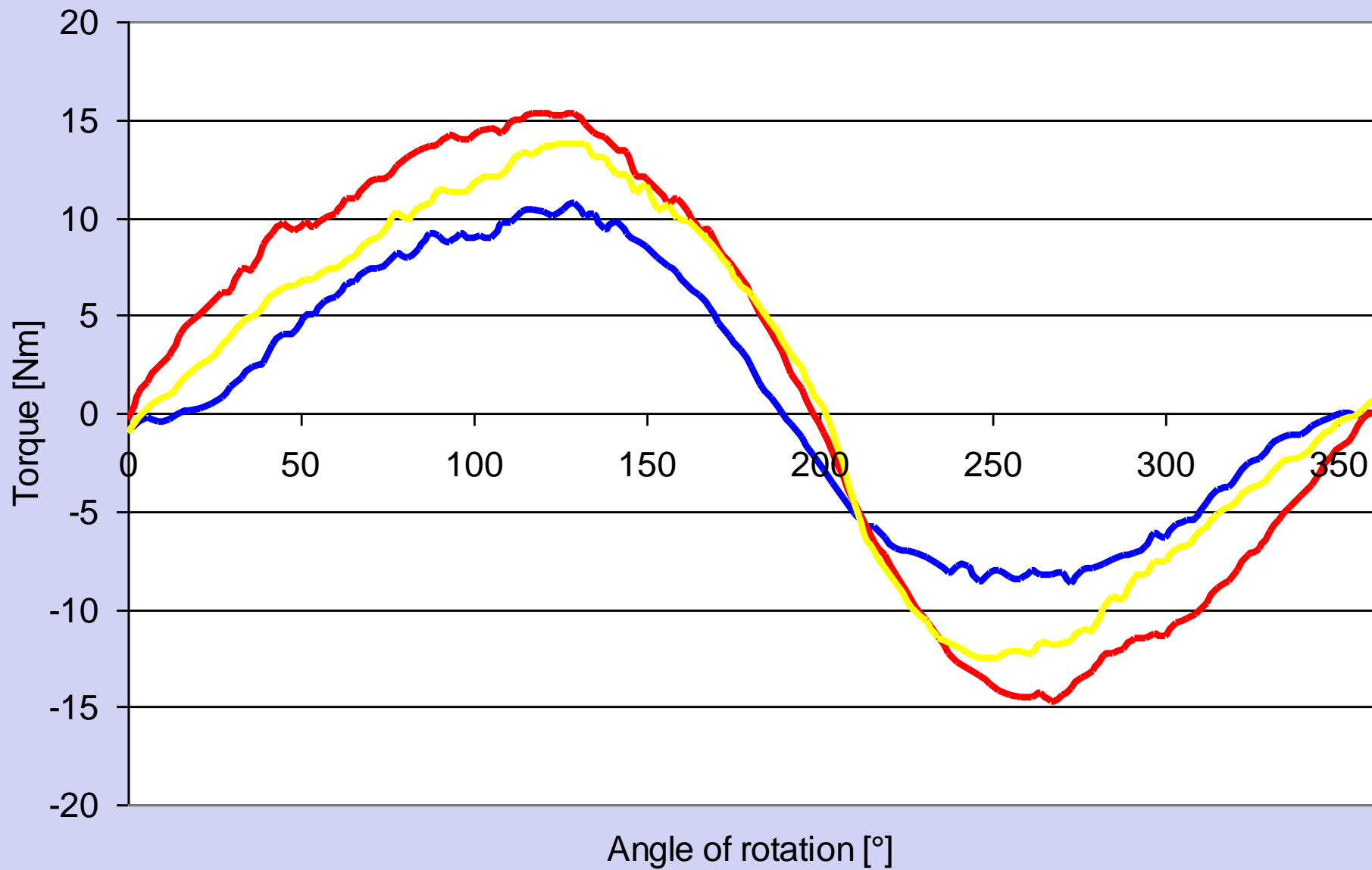


MEASUREMENT OF TURNING FORCES

- The torso model with the life jacket can be rotated around the body axis while the acting force (torque) is measured at any position during the rotation.
- The turning of the torso may be performed manually or motor driven.







CONCLUSION

- **The evaluation of the test arrangement using a variability of life jacket has demonstrated that the new test equipment can provide reliable and reproducible results and discriminate well between life jackets regarding self-righting properties as well as stability.**