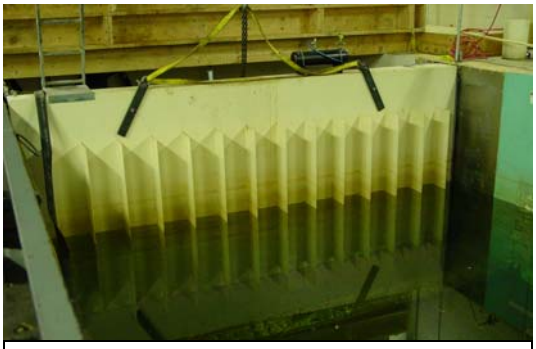
**Resistance Tests at the OERC Tow Tank**

The OERC operates a 54 metre towing tank for use in various tests in the ship design and offshore research fields. Tank dimensions are shown on the drawing below.

The towing carriage is powered by four 11kW dc drive motors with a torque rating of 47.0 Nm each. They can propel the carriage to a maximum speed of 5.0 m/s with a maximum acceleration rate of 2.0 $m/s^2$

Some of the tests that are carried out include standard ship resistance, self propulsion, open propeller tests, podded propeller tests.

The tank is also equipped with a hydraulically actuated wave board. The board is powered by a 125 hp hydraulic pump, delivering a system operating pressure of 3,000 PSI. The board is also controlled by an MTS 407 controller, and is enhanced by a PC driven in-house software program designed for delivering random waves. This allows us to also carry out added resistance in waves and seakeeping tests.



**Wave Board 1**

As well as the standard ship design experiments, the tank and its associated equipment can be used for other types of experiments, such as current and wave driven power generation devices, as well as research in the field of vortex induced vibration (VIV).

In the past, the tank has been used by internal and external researchers interested in such projects as:

- Calibration of current meters for plankton nets for DFO.
- Calibration of whale tags for Memorial University's Whale Research Group.
- Calibration of current flow meters for the Marine Institute flume tank.
- Damping of VIV on offshore marine risers by oceanic consultants.

Tow tank specifications:

- Maximum tank length: 54.7m, including beach
- Usable length: 35.0m *(determined as maximum less safety zone and beach)*
- Maximum tank depth: 3.04m
- Maximum carriage speed: 5.0m/s
- Maximum carriage rate of acceleration: 2.0 $m/s^2$