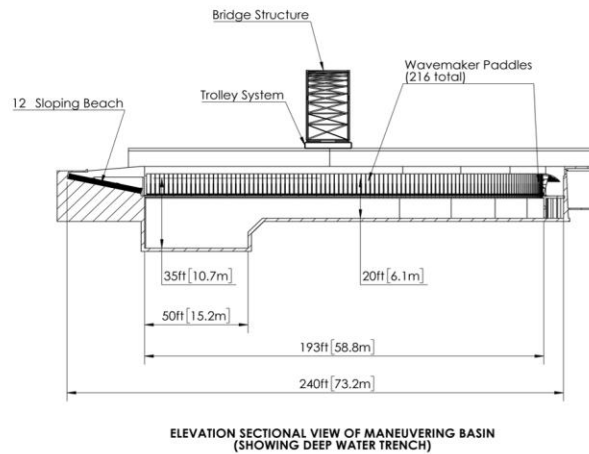
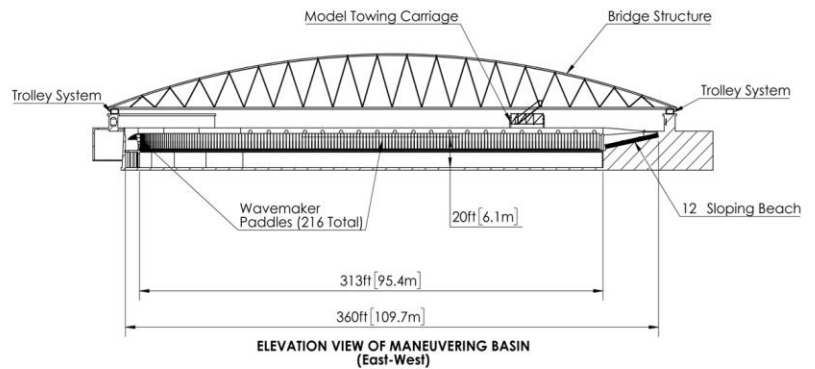
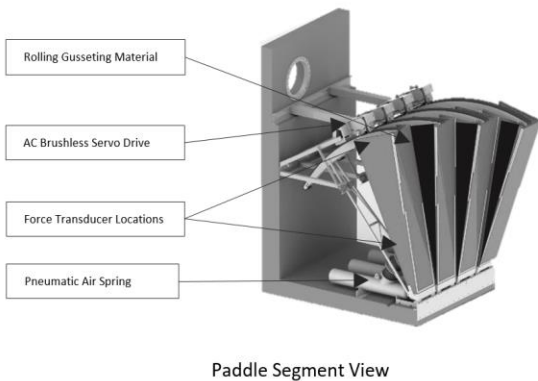
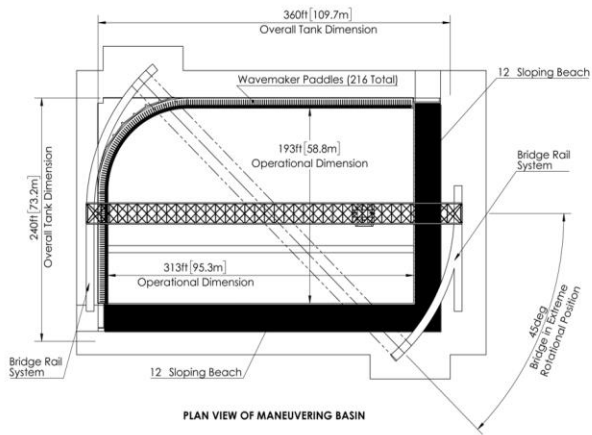


MANEUVERING AND SEAKEEPING BASIN (1961/2013)



DESCRIPTION OF WAVE BASIN: Indoor basin, overall length 110 m (360 ft), width overall 73 m (240 ft), depth 6.1 m (20 ft) with a 10.7 m (35 ft) deep by 15.2 m (50 ft) wide trench parallel to the long side of the basin on the south side. Large underwater viewing windows are located in the basin wall, water kept photographically clear by recirculating filters. Overhead catwalks and camera platforms are available for observation and photography and Hi-definition video. Overhead cranes located in fitting areas and over basin centerline.

BEACH TYPE & LENGTH: Wave absorbers are a discontinuous 12 deg. slope style type made up of seven permeable layers of rectangular precast concrete bar panels resting on an impermeable beach. They are located along the full length of the two sides of the basin opposite the wavemaker units. Beach absorption is on average 97% effective, worse case being 92% at 0.28 Hz.

DESCRIPTION OF BRIDGE: Basin is spanned lengthwise by a 114.6 m (376 ft) bridge supported on a rail system that permits the bridge to traverse one-half the width of the basin and to rotate through angles up to 45 degrees from the longitudinal centerline of the basin. Tracks attached to the bottom of the bridge support the towing carriage, bridge width is constant 6.1 m (20 ft).

DESCRIPTION OF CARRIAGE: A 6.1 m (20 ft) wide by 6.6 m (21.8 ft) long by 2 m (6.76 ft) high towing carriage is hung from the bridge. This 147 kN (16.5 ton) carriage has a maximum speed of 7.7 mps (15 knots) and is driven by a pair of opposing traction wheels powered by 93kW (125 Hp) electric motors thru a worm gear drive.

DESCRIPTION OF WAVEMAKER: 216 "Finger" type paddles, 3 m (10 ft) high, with a pitch of 0.658 m (26 in) along the west and north banks of the basin. Each wavemaker paddle comprises of a 3.46 kW (4.64 Hp) electric motor, producing motions thru a toothed-belt on a circular-sector. To minimize generation of singularities the wavemaker has a curved corner with 60 paddles, with 106 on the long side and 50 on the short side. The paddles operate both as a wave generator and active wave absorber.

WAVEMAKER CAPACITY: The wavemaker has a frequency range of 0.20 to 2.0 Hz and can generate regular waves from 0.4 to 32.0 m (1.6 to 105 ft) in length and up to 0.9 m (35 in) in height. The wavemaker can produce model sea spectra of any distribution up to 0.5 m (19 in), modal period dependent.

DIRECTIONAL AND OTHER CAPABILITIES: The wavemaker can produce multi-directional and short-crested seas. This includes multiple sea systems coming at ± 45 deg headings from the west or north banks, as well as short-crested seas at a prescribed spreading. Specific time histories can be produced anywhere in the operational area of the basin. Wave grouping and episodic events can also be synthesized. All wave programs can be pre-viewed prior to generation on the computer monitor using the Virtual Wavemaker, which is the hub of the wave synthesis software.

WAVE MEASUREMENT: There are six single point ultrasonic transducers and one directional array consisting of twelve ultrasonic transducers permanently installed along the MASK bridge. Supplemental ultrasonic transducers and capacitance rods are available for use as needed.