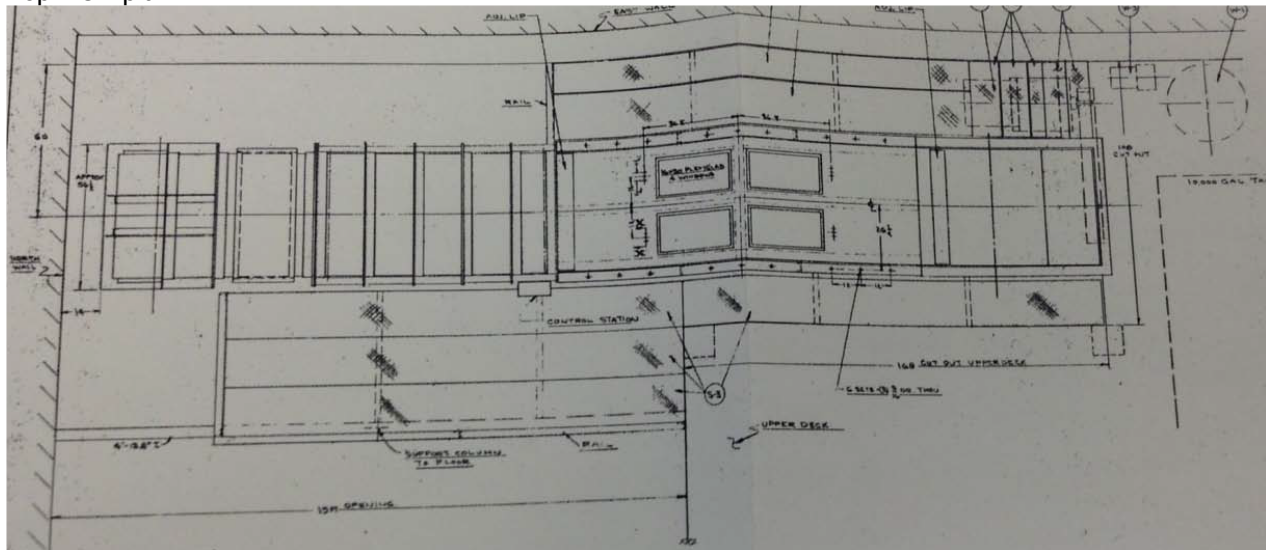


<b>Name of organization</b> United States Coast Guard Academy		<b>Year of information updating</b> 2025	
<b>Year established</b> 1876		<b>Year of joining the ITTC</b> 2025	
<b>Address</b> 31 Mohegan Ave (pen) New London, CT 06320		<b>Status in the ITTC</b> Application	
<b>Contact details</b> (phone, fax, e-mail) Michael Daeffler (860) 701-6320 Michael.S.Daeffler@uscga.edu		<b>Website</b> <a href="https://uscga.edu/">https://uscga.edu/</a>	
<b>Type of facility</b> Free Surface Circulating Water Channel		<b>Year constructed/upgraded</b> Constructed 1980, Upgraded 2015	
<b>Name of facility</b> Engineering Power Lab		<b>Location</b> (if different from the above address) MacAllister Hall Room 117	

**Main characteristics** (dimensions of tank/basin/test section; for simulators: full mission, part task or desktop)  
Free surface circulating water channel with a 12 ft long x 4 ft wide x 2 ft deep test section. The CWC uses a vertical loop circulation with a 3 to 1 contraction section prior to the test section. The maximum water velocity is 8 ft/sec.

### Drawings of facility

Top-view plan



Corss-section-view plan

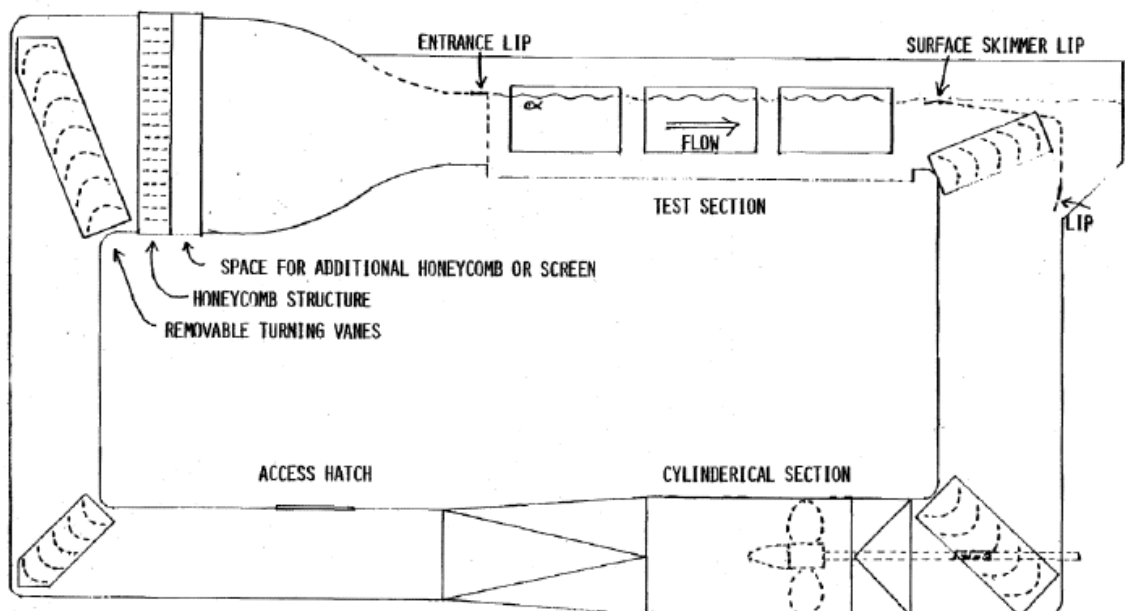


Figure 1 Profile view of the Circulating Water Channel

**Detailed characteristics** (carriages, wave/current/wind generators, instrumentations, etc.)

Maximum Water Velocity: 8 ft/s

Channel Size (test section): 12 ft long x 4 ft wide x 2 ft deep

Water Capacity: 15,000 gallons (fresh)

Material of channel: Stainless Steel for open channel; steel for remainder of loop

Type of Circulation: Vertical Loop w/ 3 to 1 contraction section

Drive System: Eddy Current Clutch Drive 1700 RPM Motor

Motor: 75HP Louis Allis Eddy Current Drive Motor

Controller: Closed Loop RPM control

Impeller: 30" & 44" Clipped (Bronze) Propeller

Air Removal: Vacuum System

**Sensors:**

Velocity: Differential Pressure across contraction section

Force: 3-axis 200N force sensor mounted on adjustable gantry above test section

Visual: 10 windows (3 both sides and 4 on the bottom)

**Applications** (Tests performed)

Primarily used by Mechanical Engineering capstones to determine resistance on Capstone projects ranging from power regeneration systems to underwater uncrewed systems.

**Published description** (Publications on this facility)

Colburn, Warren, Simpson, William, and Vernon Phelps. "The U.S. Coast Guard Academy Circulating Water Channel." *Mar Technol SNAME N* 18 (1981): 253–263. doi: <https://doi.org/10.5957/mt1.1981.18.3.253>