

# Water Tunnel Tests Underwater Devices

Penn State is the home of one of the largest water tunnels in the world.

Currently the staff of the Garfield Thomas Water Tunnel, located on the corner of Route 322 and Pollock road, is engaged in testing underwater devices.

The water tunnel expected to produce valuable information on underwater devices both for non-military purposes and national defense.

Studies and designs of torpedo propellers are currently being studied. Research in the tunnel is done with the torpedo remaining stationary and the water pressure, velocity, and temperature being regulated.

### Torpedo Depth

The depth of the torpedo model in actual conditions can be determined by varying water pressure in the tunnel from minus 12 to plus 45 pounds per square inch, corresponding to depths from a few feet to a hundred feet.

The 106,000 gallons of water are circulated by a 2000 horsepower motor which can produce water velocity up to 80 feet per second, or 55 miles per hour in the working section.

Temperature is regulated by a 350 ton refrigeration system, which is used to remove the frictional heat incurred pumping the water.

The tunnel itself is 100 feet long and 32 feet high. Filled, it weighs nearly 600 tons. It is shaped like a rectangle with the largest portion 12 feet in diameter and the smallest section, the working section, only four feet in diameter.

### Largest Working Section

This working section—the largest in the world—where the models are tested contains four-inch thick plexiglass windows, through which the models are observed and photographed.

All measurements to be made and mechanisms to be controlled are done from a soundproof booth near the tunnel. Messages be-

tween engineers are relayed through an inter-communications system.

The tunnel is named after Lt. j.g. W. Garfield Thomas Jr., who was graduated in the class of 1938.

Lt. Thomas, one of the first Penn State alumni casualties in World War II, was fatally wounded after saving the lives of his gun crew at Guadalcanal.

### Ship Named For Hero

On Dec. 12, 1943, the U.S. Navy named the USS Garfield Thomas in his honor. He also received the Navy Cross.

Dr. James Robertson is director of the lab; William Martin, research associate; and Frank Lane, associate professor.

James McGinley, Thomas Pierce, Girard Cahuff, and Barnes McCormick are research assistants.

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# Debaters Slate First Meeting For Sept. 26

A preliminary meeting of freshman and upper-class candidates for the men's debate team will be held Sept. 26 in 305 Sparks. Joseph F. O'Brien, manager of the debate team, announced that tryouts for the team will be held Oct. 3.

Last year the Penn State men's team won the Pennsylvania state championship and Marlin Brenner earned an individual first place in the grand national debate championship in the informative reading division.

David Lewis placed first among the top 20 debaters following the grand champion, Richard Van Orden, of Bowdoin. Brenner placed fifth among the top 20.

The men's affirmative team placed fourth in the Big Ten, a listing of the top teams in the tournament. About 210 debaters from 45 colleges participated in the tournament.

Clair George, senior, and Brenner, who graduated in June, represented the Middle Atlantic region in competition for membership on the American International Debate teams which will tour Australia and Great Britain. Fourteen debaters attended the tournament held in Evanston, Ill.

# Rise in Food Cost Boosts Dorm Rate

A general rise in food costs during the past year has been given as the reason for a \$20 per semester increase in board at all campus dining halls. The increase is effective with the current semester and brings the total board for a semester to \$220.

In a letter earlier in the summer to parents and students, Samuel K. Hostetter, comptroller, explained that "the charge for meals at the College has been kept comparable with that at similar institutions, and every effort will be made to continue to serve the best possible meals at a minimum cost."

# College Reduces Interclass Rate

By action of the College Board of Trustees at their spring meeting, the student interclass finance fee has been reduced from 75 to 50 cents a semester.

Last spring All-College Cabinet recommended the measure as part of treasurer Emerson Jones' proposed budget. He pointed out that there was a surplus in the budget because of income from various dances held during the year.

The reduction in the student fee was taken into consideration when planning this year's budget.

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