Abstract Submitted
for the DFD08 Meeting of
The American Physical Society

Investigation of the behavior of a ventilated supercavity[1]
WILLIAM HAMBLETON, MEGAN WILLIAMS, ELLISON KAWAKAMI, ROGER ARNDT, University of Minnesota — The topic of supercavitation is of considerable interest to drag reduction and/or speed augmentation in marine vehicles. During the present experimental work, the ventilated supercavity formed behind a sharp-edged disk is investigated utilizing several different configurations. Results regarding cavity shape, cavity closure and ventilation requirements versus cavitation number and Froude number will be presented. Additionally, effects related to flow choking in a water tunnel test section are discussed. Results obtained are similar in character to previously reported results, but differ significantly in measured values. Cavity shape, particularly aft of the maximum cavity diameter, is found to be a strong function of the model support scheme chosen.

[1]Sponsored by ONR

Roger Arndt
University of Minnesota

Date submitted: 29 Jul 2008 Electronic form version 1.4