Daniel M. Curley

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Evaluation of Design Methods for Modular Expeditionary Small Boat Pier

The U.S. Navy has identified a need to quickly design and build small boat piers in support of peacetime and contingency operations throughout the globe. Shipping containers can serve as modular "building blocks" to construct the landing platform of such piers. Since the Navy already has the equipment and containers prepositioned in strategic locations, a pier built from shipping containers would provide a quick and cost effective means to accomplish the mission. This report provides a proof of concept and a field manual for engineers to design an expeditionary small boat pier constructed from 40' shipping containers. It identifies potential failure modes and provides analytical engineering solutions derived from the latest design manuals and recent research documents. A case study demonstrates the implementation of this paper as a field manual for the design of a container pier, which is capable of resisting the hydrodynamic forces and scour imposed by a 3 foot significant wave height.