



# THE LOGBOOK

A Publication of the  
**Wayne E. Meyer Institute of Systems Engineering**

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Naval Postgraduate School, 777 Dyer Rd., Mail Code 97, Monterey, CA

June 2004  
Volume 11

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Associate Director for Education

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Associate Director for Experimentation

## Maritime Domain Protection Task Force Hard at Work

The Maritime Domain Protection Task Force (MDP-TF) was formed at NPS in January 2004. The task force is commissioned with investigating issues surrounding protection of the United States, its vessels, and citizens from terrorist threats originating in the maritime domain.



This multi-year effort will pursue several research initiatives in order to define, design, and aid implementation of a national Maritime Domain Protection system. The envisioned system will provide capabilities to deter, interdict, or defeat threats as far from U.S. borders as possible, and will be based on a concept of multiple lines of defense and domains, coordinated through a national command and control system.

The Task Force schedule includes research on a process for improving current vulnerability versus capability assessments and an initial description of the current national system by this fall. Concurrent efforts will include work in system design and advanced capabilities in Maritime Domain Awareness (MDA), the establishment of a classified Maritime Domain Homeland Defense database and reference library, and the creation of a classified Maritime Domain Protection war gaming facility to provide a "test bed" for local, state, federal, and DoD concept of operations development. Current research initiatives include:

- Systems Engineering Design and Integration – Dr. Tom Huynh ([thuynh@nps.edu](mailto:thuynh@nps.edu))
- Vulnerability and Threat Assessment – CAPT Steven Ashby, USN ([sbashby@nps.edu](mailto:sbashby@nps.edu))
- Maritime Domain Awareness (MDA) System Demonstration – Dr. Herschel H. Loomis ([loomis@nps.edu](mailto:loomis@nps.edu))
- Identification and Documentation of the Content and Structure of the Existing National MDP Data Sources – Dr. Magdi Kamel ([mkamel@nps.edu](mailto:mkamel@nps.edu))
- Maritime Domain Protection War Laboratory – LTC Saverio Manago, USA ([smmanago@nps.edu](mailto:smmanago@nps.edu))
- Applied At-Sea Technology - METOC Effects on Radar/IR Surveillance in Maritime Domain Protection System – Dr. Kenneth L. Davidson ([kldavids@nps.edu](mailto:kldavids@nps.edu))

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For additional details, please visit the MDP-TF web site at:

<http://www.nps.edu/Academics/MeyerInstitute/MDP/>

This June, the task force will host two symposia; the first is a mini-symposium on Maritime Domain Protection from 9-11 June. Participants including MDP-TF research teams, NPS Homeland Security curriculum faculty, and guests, will exchange initial progress information and share ideas.

The second is the Threat and Vulnerability Assessment Symposium from 15-17 June. The goal is to identify current near-term threats and key vulnerabilities in MDP. For more information, please contact team leader CAPT Steven Ashby, USN ([sbashby@nps.edu](mailto:sbashby@nps.edu)).

The Task Force is led by CAPT Jeff Kline, USN ([jekline@nps.edu](mailto:jekline@nps.edu)), of the Meyer Institute. For more information or to be added to the MDP-TF mailing list, please email Ann Wells, MDP-TF Information Manager ([abwells@nps.edu](mailto:abwells@nps.edu)).



## Project Brief Summary – MSSE Port Hueneme

Cohort 2 of the Masters of Science in Systems Engineering distance learning program at NSWCPHD was tasked to develop the combat system for a family of Littoral Combat Ships for their Capstone Project. The ships will be assigned to the protection of a hypothetical Sea Base in the South China Sea in 2016 as well as protecting sea and air vehicles as they transit a corridor in a Ship To Objective Maneuver (STOM). In this role, the ships are required to be modular -- reconfiguring to accept different mission packages during a 48 hour in-port period. Protection provided will be provided against all likely threats including anti-ship cruise missiles, aircraft, mines, torpedoes, and swarming small boats. The starting point for this three quarter-project was the ship design and preliminary set of requirements developed by last year's NPS-resident Total Ship Systems Engineering class as well as a previous project completed by Cohort 1.





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## Systems Engineering and Analysis (SEA)

One of the key roles of the Meyer Institute is assembling large, multi-disciplinary teams to tackle large-scale problems of interest to the Navy. Some of the teams are predominantly faculty teams and are managed by the Associate Director for Research, CAPT Jeff Kline, USN. Others are primarily student teams and are managed by the Associate Director for Education, Dr. Dave Olwell. The student teams produce two studies each year, corresponding with the spring and fall quarter graduation of the Systems Engineering and Analysis (SEA) cohorts. The Institute's Board of Advisors plays a key role in identifying possible topics and assuring that the problem selected returns the maximum benefit to the Navy for the resources committed to the study.

In April, the Meyer Institute announced the project for the SEA class graduating in December 2004. The study focuses on a key concern of Joint Expeditionary Warfare, which is engineering a systems solution to the logistics flow through the Sea Base to support the Joint Forces. In particular, the team will study the role and design of the systems ("connectors") to connect the Sea Base with its supply sources, its supported forces, and the components internal to the Sea Base. The team will explore surface and air platform solutions, as well as engineered processes. They will pay particular attention to the interfaces between the connectors and the ships of the Sea Base. They will also consider how the Sea Base can and should support Joint Forces, not just Naval forces.

This project will be the fourth consecutive NPS integrated campus research project to examine important facets of expeditionary warfare for the Navy. The results of these projects have been influencing the evolution of the Navy's expeditionary warfare development.

Distinguished Professor Dave Schrady (Dschrady@nps.edu) has assumed overall leadership of this project from Professor Emeritus Chuck Calvano, who has retired from NPS. Senior Lecturer Paul Shebalin (pshebali@nps.edu) will lead the SEA student team. Associate Professors Fotis Papoulias (papoulias@nps.edu) and Robert Harney (harney@nps.edu) will lead the Total Ship Systems Engineering student team. We expect more than a dozen other faculty members, and several dozen students, to also contribute to the project.

This project will be completed in December 2004. The project final briefing is scheduled for Thursday, 2 December, in Monterey. Mark your calendars!



*You are Invited!*

*Wayne E. Meyer Institute of Systems Engineering  
Integrated Project Final Brief*

**3 June 2004**  
at  
*Naval Post Graduate School  
Glasgow Hall, Room #102  
Time: 0900*

*Also.....*

*Graduation Ceremony/Reception*

**18 June 2004**  
at  
*Naval Post Graduate School  
Bullard Hall, Reception Area  
Time: 0830 Reception  
1000 Graduation*

