

Expeditionary Logistics

A F U T U R E N A V A L C A P A B I L I T Y

National strategy expects the Navy and Marine Corps to provide forward presence and to project power into the littorals. Thus Naval operational doctrine—*Forward...From the Sea* and *Operational Maneuver from the Sea*—is in its essence expeditionary. Expeditionary operational doctrine requires expeditionary logistical doctrine. And doctrine without capability is empty. Expeditionary logistics gives Naval forces the ability to get to an operational theater early and remain there as long as necessary—sustained from the sea base.

Why is this Future Naval Capability Important?

Expeditionary logistics is the effective and efficient movement of equipment, supplies, and personnel between sea-based platforms and operating areas. Effective movement requires adequate distribution capability. Efficient movement requires proper coordination of all resources through information management. We seek the ability to do this from the sea base, without the necessity of building up large logistical establishments ashore. The Expeditionary Logistics Future Naval Capability (FNC) addresses critical logistical capability gaps for Naval forces engaged in expeditionary operations. In particular, it seeks to enable Operational Maneuver from the Sea, Ship to Objective Maneuver, sea state 5 logistics movement, and the logistical component of Naval command and control.

What's our investment strategy? In developing our core investment program, the Expeditionary Logistics FNC IPT focused on identifying and filling capability gaps, fulfilling commitments to funded acquisition programs, and designing a strategy that would provide the wherewithal to execute the

program. Two primary enabling capabilities will get us there:

- **First priority—Distribution:** Ability to deploy from and reconstitute to the sea base, and to supply or resupply both the sea base and maneuver units.

- **Second priority—Logistics Command and Control (C2):** Providing tactical and logistical command and control within a common C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) architecture shared with maneuver forces.



How are we filling the gaps in these enabling capabilities?

Each enabling capability has a set of milestones and transition opportunities. Our goal is to enable effective and efficient movement of equipment, supplies, and personnel between sea based platforms and into and out of operating areas.

First Priority: Distribution.

Strategic, operational, and tactical surface delivery means together bring the throughput needed to sustain an expeditionary force. Today's capabilities are severely limited by adverse weather or rough seas. Offloading comes to a stop in sea state 3 (3 to 5 foot waves, beginning to break as white

caps) but such conditions (or worse) prevail almost half the time in many areas of operation. Overcoming this limitation requires investment in technology to support: tactical surface delivery vehicles; a strategic surface delivery vehicle; and shipboard and landing force integrated packaging, handling (to include at-sea rearming), storage, selective offload, and transportation of cargo.

- **In FY 2003:** Parafoil Technology for Direct Using Unit Resupply.

- **In FY 2004:** Strike Up/Down for effective surface platform movement of materials between decks.

- **In FY 2005:** Packaging material and fendering materials to support throughput. High speed shuttle for sea-based replenishment.

- **In FY 2006:** Reconfigurable medical and maintenance facilities to support expeditionary operations. Sea base to shore surface craft for movement of supplies ashore.

- **In FY 2007:** Skin to Skin connected replenishment. Heavy underway replenishment to include at-sea rearming.

Transition Opportunities: The primary distribution transition opportunities are in direct support to the Maritime Prepositioned Force Ship of the Future. However, many technologies are also relevant to platforms such as DD21 and the PEO Carrier.

- Parafoil—transition to USMC, FY 04.
- Surface Distribution—transition to Maritime Prepositioned Force (Future).

Second priority—Logistics C2. A common C4ISR architecture for both tactical and logistical command and control should maintain situational awareness of the landing force and naval units, support integral feedback decision support systems, and tie together shipboard and ground activities. Gaps in these capabilities can be filled with: integration of maneuver and logistics C2 within the C4ISR architecture; logistical situational awareness, to include total asset visibility of all materiel; modeling and simulation for predictive readiness and supply chain management; and a logistics wargame simulator.

“Dominant battlefield awareness is much more than knowing the static location of forces. Commanders will need to know the combat readiness status, or state vector, for each force element. This includes knowing the logistics posture of friendly and enemy forces as well as having a prediction of the resupply needs of each force element.”

—The Hon. Paul G. Kaminski, Undersecretary of Defense for Acquisition and Technology

- **In FY 2004:** Ground battlefield logistics sensor array compatible with legacy inventory systems.

- **In FY 2005:** Modeling and simulation that can predict readiness from sensor data and help manage the supply chain. Commander battlefield situational awareness to include real time information on fuel, ammo and availability of logistics support.

- **In FY 2006:** Logistics wargame simulator.

- **In FY 2007:** Integrated naval C2 for the Joint Task Force, Amphibious Task Force, and the Marine Air Ground Task Force with integrated feedback.

Transition Opportunities: Software transition targets will be met through modular contracting and design strategies that bring logistics capability to C4I systems. General transition endorsements are coordinated through OPNAV, PEO EXW, and Marine Corps Systems Command.

- Technologies transition as modules into funded legacy systems—C2PC, UOC, MTRV, LAV SLEP, DACT, CSSE/SE.

What’s some of the relevant discovery and invention

science and technology? Exploitation and delivery depend upon discovery and invention to operate in higher sea states and over greater stand off distances. In ONR’s vertically integrated program, we will continue to exploit basic work that proves relevant to expeditionary logistics.

- **Mathematical modeling** will be crucial to logistics wargame simulator performance.

- **Ship structures and systems** may alter to optimize logistical performance.

- **Information technology and operations** affect logistical command and control.

- **Diagnostics and prognostics** are crucial to the battlefield situational awareness on which logistics depends.

- **Motion control technologies and new materials** are important to higher sea state operations.

