

Topic: N131-054

## Robotic Research

Loading for Naval Resupply for Deployment (LNRD)

LNRD, a compact multi-stage telescopic boom lift system with steerable wheel drives and outriggers for stability and weight distribution is ideally suited to shipboard material handling applications. Robotic Research is a small engineering firm committed to finding innovative, cost-effective solutions in unmanned systems development. Target platforms include both LCS variants. LNRD satisfies the Navy's "Advanced Shipboard Mission Payload Handling System" requirements by providing the capability to rapidly reconfigure both variants of the LCS for a variety of missions. LNRD provides more flexibility in lifting, transporting and maneuvering payloads than current material handling equipment systems, allowing payloads to be picked from and placed to locations not attainable by current systems. Additionally, the payload center-of-gravity can be adjusted to enhance stability while in transport.

### Technology Category Alignment:

None

None

None

### Contact:

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**SYSCOM:** NAVSEA

**Contract:** N00024-15-C-4041

 Corporate Brochure: [https://navystp.com/vtm/open\\_file?type=brochure&id=N00024-15-C-4041](https://navystp.com/vtm/open_file?type=brochure&id=N00024-15-C-4041)

# Department of the Navy SBIR/STTR Transition Program

Statement A: Approved for Release. Distribution is unlimited.

NAVSEA #16-568

Topic # N131-054

Loading for Naval Resupply for Deployment (LNRD)

Robotic Research LLC

## WHO

**SYSCOM:** NAVSEA

**Sponsoring Program:** PMS-501

**Transition Target:** LCS

**TPOC:**

**Other transition opportunities:**

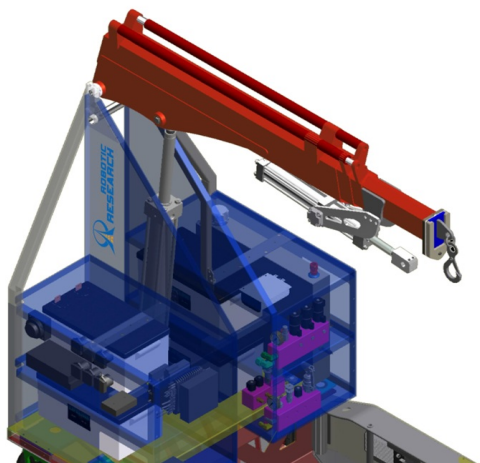
Manned & Unmanned Systems

MCWL

Unmanned Surface Vehicles

Dockside and Warehouse

Operations



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## WHAT

**Operational Need and Improvement:** Develop an advanced shipboard mission payload handling system which provides the capability to rapidly reconfigure both variants of the LCS for a variety of missions.

**Specifications Required:** LNRD consolidates various material handling systems on LCS into one system which maneuvers payloads within tight space constraints and positions payloads within ISO containers. LNRD is highly adaptable to Mission Package configurations and payloads with a single operator.

**Technology Developed:** LNRD is a compact multi-stage telescopic boom lift system with steerable wheel drives and outriggers for stability and weight distribution is ideally suited to shipboard material handling applications. LNRD provides more flexibility in lifting, transporting and maneuvering payloads than current material handling equipment systems, allowing payloads to be picked from and placed to locations not attainable by current systems. Additionally, the payload center-of-gravity can be adjusted to enhance stability while in transport.

**Warfighter Value:** What this means for the Warfighter is an advanced material handling system that can safely and efficiently handle material in the restricted spaces of both LCS variants – Freedom and Independence - by a single person without damage to the material or injury to personnel.

## WHEN

**Contract Number:** N00024-15-C-4041 **Ending on:** April 13, 2017

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Test at Subcontractor to ensure all degrees of freedom work; wheels turn, etc.	Med	Meet required hardware operational standards	6	September 2016
Hardware Delivered from Subcontractor	Med	Delivery complete	6	September 2016
Software development	Med	Analysis to verify software performs to operational standards	6	January 2017
Demonstration	Med	Meet required software operational standards	7	March 2017

## HOW

**Projected Business Model:** Robotic Research has intentions to develop LNRD for the government and then have the technology mounted on future POR vehicles/ships. Robotic Research will provide technical assistance.

**Company Objectives:** Robotic Research will further develop the LNRD technology to be an integral part of numerous mobility systems across the DoD.

**Potential Commercial Applications:** While LNRD is very beneficial to LCS, it could be possible to integrate LNRD into other shipboard applications as well as to dockside and warehousing operations.

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