# Littoral Combat Ship and Expeditionary Fast Transport: Their Utility as Support Platforms During Humanitarian Aid / Disaster Relief Operations

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## Abstract


- Over the last several decades, there has been an increase in U.S. naval involvement in supporting humanitarian assistance, disaster relief (HA/DR) operations. Cruiser and destroyer (CRUDES) platforms, two of the most heavily employed platforms in the United States Navy, are frequently tasked outside of their primary mission sets as a result of HA/DR events, both natural and man-made. This has placed enormous pressure upon these units, their crews, and fleet commanders, specifically in how to best prioritize their use for maximum mission accomplishment. Our analysis provides side-by-side comparisons of the cost and capabilities of the LCS and T-EPF platforms to CRUDES assets and describes their ability to effectively support HA/DR operations. This analysis gives senior leadership and mission planners objective information regarding viable alternatives that could allow CRUDES assets to maintain focus on their primary mission objectives while maintaining the necessary flexibility to support HA/DR operations.


## Methods

| Ship Type | # Helo Aboard | Helo Points Score | Aircraft Support | Landing Craft Support | Search & Rescue (SAR) | Dry Goods Storage | Refrigerated Goods Storage | Fresh Water Storage | Roll On/Off | Fuel Storage/Dispensation | Self Sufficient | Personnel Transfer | Fresh Water Production | Personnel Support | Berthing Capacity | Medical Support | Transit Speed | Hydrographic Survey | Salvage Operations | Towing | Total Capabilities Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cruiser | 2 | 40 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 47 |
| Destroyer (Flight 1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 4 |
| Destroyer (Flight 2) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 4 |
| Destroyer (Flight 2A) | 2 | 40 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 47 |
| Frigate (up to 2014) | 2 | 40 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 47 |
| LCS (Freedom) | 2 | 40 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 46 |
| LCS (Independence) | 2 | 40 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 46 |
| Expeditionary Fast Transport | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 7 |

CAPABILITY SCORES BY SHIP TYPE

- Quantitative data was used to analyze LCS and T-EPF capabilities and cost to deploy each ship type against their CRUDES counterparts, determining how well they meet the demands of an HA/DR mission set.

## Results

- The LCS and T-EPF are comparable in capability to CRUDES assets
- Utilizing the LCS and T-EPF as potential first responders for short-term mission support seems to provide the most value for the capabilities they possess.
- Drawbacks in utilizing these platforms center mainly around the crew size, which is significantly smaller than any of the platforms being used for comparison.

| Ship Type | Cost to Deploy (Year) | Cost to Deploy (Day) |
|---|---|---|
| Cruiser | $69,914,085.00 | $191,545.44 |
| Destroyer (Flight 1) | $66,617,668.00 | $182,514.16 |
| Destroyer (Flight 2) | $64,060,665.00 | $175,508.67 |
| Destroyer (Flight 2A) | $61,108,433.00 | $167,420.36 |
| Frigate (up to 2014) | $36,068,267.00 | $98,817.17 |
| LCS (Freedom) | $34,237,123.00 | $93,800.34 |
| LCS (Independence) | $50,021,469.00 | $137,045.12 |
| Expeditionary Fast Transport | $22,246,706.19 | $60,949.88 |

COST TO DEPLOY BY SHIP TYPE

| Non-Air-Capable Platforms | Cost per Capability |
|---|---|
| Destroyer (Flight 1) | $45,628.54 |
| Destroyer (Flight 2) | $43,877.17 |
| Expeditionary Fast Transport (T-EPF) | $8,707.13 |

COST PER CAPABILITY (NON-AIR CAPABLE)

| Air-Capable Platforms | Cost per Capability |
|---|---|
| Cruiser (CG) | $4,075.43 |
| Destroyer (Flight 2A) | $3,562.14 |
| Littoral Combat Ship (Independence-class) | $2,979.24 |
| Frigate (FFG) | $2,102.49 |
| Littoral Combat Ship (Freedom-class) | $2,039.14 |

COST PER CAPABILITY (AIR CAPABLE)

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