

**Detailed Vessel Requirements**  
***CAPE HENLOPEN Replacement Vessel***

**Vessel Description:** General-purpose, Coastal Research Vessel.

Hull Form: mono-hull

Length Overall: 146 feet

Beam: 32 feet

Draft: 9'-6"

Hull material: Steel

Classification: ABS

Power Plant: Diesel-Electric

Other Capabilities: Acoustically quiet to ICES underwater noise standards

More information can be found by going to the following link:

<http://www.ocean.udel.edu/ships&facilities/rvchreplacement/index.html>

**Equipment Requirements:** The system designed, fabricated, and delivered shall include the following components (EACH ITEM SHALL BE QUOTED SEPARATELY):

1. One (1) Handling Apparatus using the "Side Arrangement" per drawing C215-002) with the following items and requirements:
  - a. One (1) *Vertical Cast* docking head.
  - b. One (1) Towing docking head.
  - c. Apparatus to be "mirror image" of what is shown in concept drawings (i.e. base aft of docking head/CTD opening. See "CHRV-01Deck LHS Location(Plan).pdf" on RFP web site.
  - d. Hand or electric deck winch for tensioning forward towing stay.
  
2. One (1) "Smart Winch" having the capabilities described below:
  - a. Winch shall be either hydraulic with an internal HPU powered from electrical service described below, or electric.
  - b. A traction winch is not desired due to space and weight constraints.
  - c. LEBUS shell and sheaves to be grooved for 0.322 cable. Cable to be provided by Owner and installed after delivery of the system.
  - d. Optional cable cutter to be provided.
  - e. "Auto-Tension" and "Tow-Mode" required.
  - f. "Motion Compensation" to be priced separately as OPTION.

**Control Station Locations:** The primary control station, having full feature capabilities as described in the Functional Requirements, shall be remotely located in the pilot house aft control station on the 0-2 deck – directly above and adjacent to the winch and

apparatus location on the 0-1 deck. This control shall be stainless steel and flush-mounted in the aft console.

A secondary control shall be “local” on the 0-1 deck, fitted to the winch, and only supply capability to operate the apparatus, and pay in/out the winch in the event the remote pilothouse control fails. None of the advanced capabilities described in the Functional Requirements will be operable at this location.

Panel dimensional requirements to be provided during final design.

**Mating Foundations:** Detailed drawings of mating foundations on the 0-1 deck are included on the RFP web site. See “CHRV-HandlingSystemFDN.pdf”.

**Electrical Service Available:** 480VAC, 3-phase, 60 Hz, 125 Amp breaker (on 200 Amp non-fused disconnect).

**Hydraulic Service Available:** The ship’s existing 0-1 deck hydraulic power unit (HPU) should be used to power the apparatus if possible – primarily to save weight and space. This unit is a dual 30 HP HPU providing 4500 or 2000 psi and 12-22 CFM. However, if electrical service to the winch is sufficient, and the winch is hydraulic, the apparatus MAY be powered by the internal winch HPU.

**Cooling Services Available:** Chilled fresh water (50F), or air cooled.

**Alternates:** Use of the “Aft Deck Arrangement” for the load handling apparatus may be proposed IN ADDITION TO the “Side Arrangement” as long as it meets the other specific vessel requirements – particularly the weight budget. The originally requested “Aft Deck Arrangement” must be also quoted.

**Other Detailed Requirements:** Dimensional, weight, and Safe Working Load (SWL) requirements shall be as given in the table on the following page.

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			Comments
<b>Lifting Apparatus</b>			
	Weight Budget (lbs)	5,000	
	SWL in "Cast" Position (lbs)	7,600	
	Minimum SWL in "Recovery" Position (lbs)	4,000	
<b>Winch</b>			
	Weight Budget (lbs)	9,000	Includes weight of wire. (6000m of 0.322≈~3500lbs) 0.322 conductor cable.
	Wire Length (m)	6,000	
	SWL (lbs)	7,600	<i>May be higher if required for mo-comp.</i>
	Line Pull at Full Drum (lbs)	4,000	
	Line Pull at Bare Drum (lbs)	7,600	
Freeboard	"F"	5' - 0"	Near deck edge - see foundation drawing. 94-3/8" (deck height) + 6" foundation = 100-3/8" Not to exceed height
Distance Inboard	"DI"	[TBD]	
Deck Height	"H1"	8' - 4"	
Height Above Deck	"H2"	9' - 6"	
Height Above Surface (Recovery)	"HS"	2' - 0"	
Height Above Surface (Cast)	"HC"	[TBD]	
Height Above Deck	"HD"	7' - 3"	
Reach at Recovery	"RR"	10' - 0"	65" - ("D2"/2 + 4") = 43" 95"/2 = 47.5" (Half width of CTD notch)
Reach at Cast	"RC"	[TBD]	
Reach Inboard	"RI"	3' - 7"	
Clear Width	"W1"	47.5"	
Inner Boom Length	"L1"	[TBD]	By Vendor
Outer Boom Length	"L2"	[TBD]	By Vendor
Length Extended	"L3"	[TBD]	By Vendor
Total Reach	"L4"	[TBD]	By Vendor
Inner Diameter	"D1"	24"	For either 12 or 24 bottle rosette
Outer Diameter	"D2"	36"	