

RV Lir

Overview

The RV Lir, owned and operated by Geological Survey Ireland, is an 11m Redbay Stormforce RIB which has been configured for shallow water survey operations. It is also licensed to carry out survey operations to a range of 30Nm from the coast as part of the INFOMAR program.



Figure 1: RV Lir Port Side off Kinsale Co. Cork

The vessel is powered by two 250HP engines and is designed to be highly maneuverable, ideal for seabed mapping in complex shallow water environments. The bow is fitted with a custom aluminium A-frame and retractable survey pod which supports a mounted dual-head Multibeam Echosounder system. This pod is typically raised during transit, allowing for rapid transits and very efficient survey operations, particularly for distant deeper water sites.

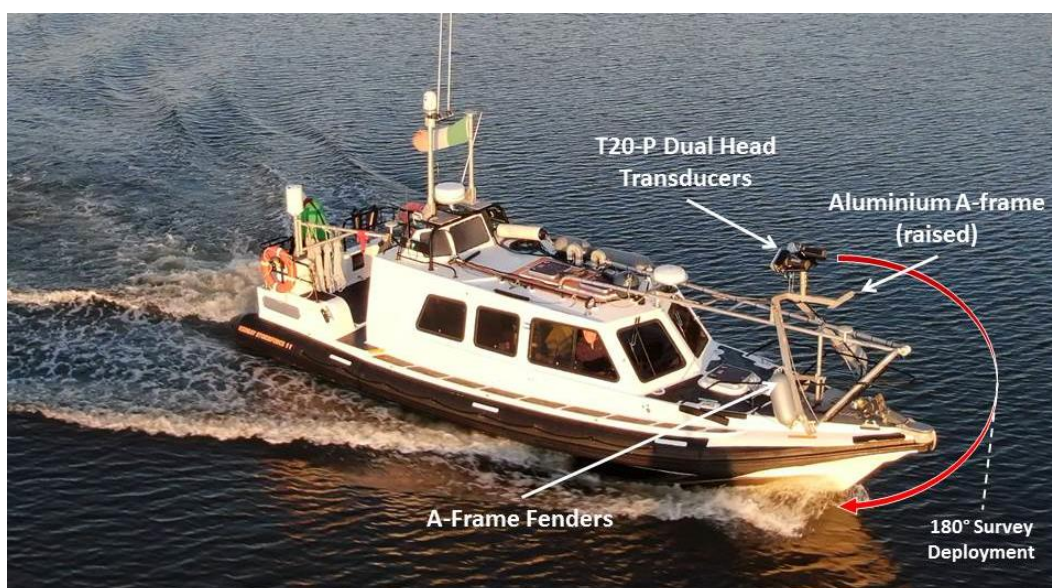


Figure 2: Figure 1: Adapted Aerial Image of RV Lir Survey Pod Configuration in Baltimore Co. Cork

During survey operations, the pod is deployed over the bow (portrayed by the red arrow in the image above). The assembly presses against the hull and is then fastened in place, ensuring consistent alignment of the transducers between surveys and minimum movement during wave impacts. Fenders are fastened to either side of the A-frame to protect it in the case of poor weather conditions in port.

Specifications

Name:	RV Lir
Registered:	n/a
Call Sign:	EI-HI-2 (Echo India Hotel India Two)
MMSI Number:	250001748
License:	Marine Survey Office P5 License for 1 crew + 8 passengers
Max passenger and crew:	9

Technical Specifications

Builder	Redbay
Model	Stormforce RIB
Year	2005
Construction	Glass-reinforced plastic (GRP)
Length (m)	11m
Beam (m)	3.31m
Draft (m)	0.5, pod not deployed
Main Engines	2 X Yamaha ME422 STI Inboard 250HP
Generator 1	Panda 8.0 kVa
Shorepower	Yes 220 V
Top Speed	30 knots
Cruising Speed	25 knots
Slow Speed	4 knots
Davit	Stainless Steel
Knuckle crane	NO
Anchor Winch	YES
Anchors	1 x 15kg
Dive ladder	Yes

Permanent Vessel Systems

AIS	Class B
Radio	ICOM M603 VHF
Handheld VHF	JOTRON
Chartplotter	Garmin GPS Map 5012
Echsounder	Raymarine DS600X Colour Depth Sounder
GPS	Raymarine C80 GPS Chartplotter and Receiver

Survey Systems

System	Type	Comment
Multibeam	Teledyne Reson Seabat T20-P x 2	200 - 400 kHz
Positioning system	POS-MV INS Wavemaster V4	With PosPac GNSS software
Geodetic Control	Leica GS10	Shore based logging (PPK)
Sound Velocity sensor	AML SV 'smart probe'	R/T Mounted with Reson T20-
Sound Velocity Sensor	Valeport Swift SVP	

POS-MV Unit

The RV Lir uses an Applanix POS-MV system to provide pitch, heave, roll, timing, positioning and heading information to the survey equipment and software. The POS-MV topside unit is connected to an IMU (inertial motion reference unit) mounted near the cabin entrance and to a pair of GNSS antennae all of which, when combined provide accurate attitude, heading and positioning readings to all the hydrographic and geophysical software. A 1 PPS (pulse per second) time-sync signal is provided to the acquisition software ensuring adequate time synchronization.

Once the vessel's POS-MV navigation files are post processed with positioning corrections, the horizontal accuracy is improved to the order of +/-5cm with similar values in the vertical plane. This allows for the calculation of GPS tide heights with the vessel itself essentially acting as a tide gauge.

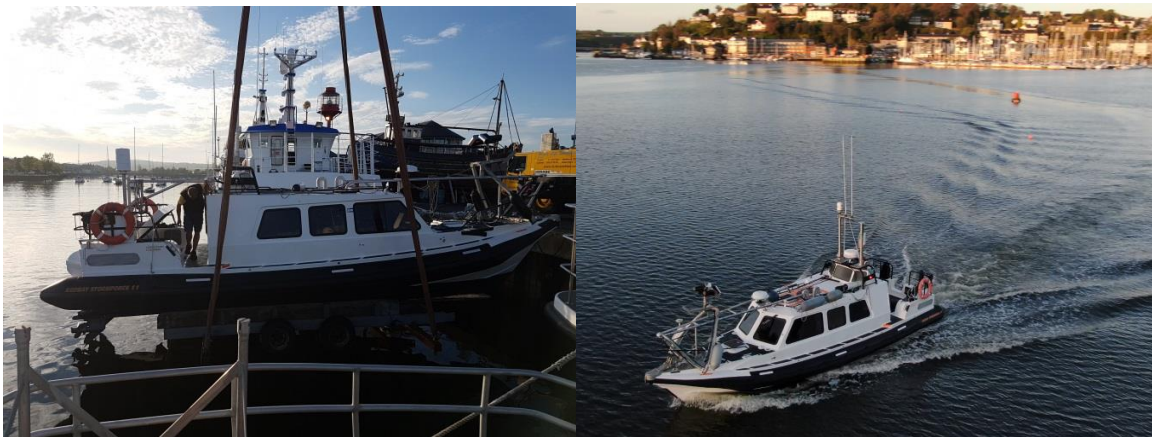


Figure 3: RV Lir Being Launched in Arklow, and RV Lir Departing Kinsale, Respectively



Figure 4: RV Lir in Transit Off Baltimore, Co. Cork, and Surveying Mizen Head Coastline, Respectively