ervo
european research vessel operators

National Research Council of Italy

Marine Institute
Foras na Mara

ITALIAN UPDATE 2015

Operative Programming Support Office
Scientific Network Support and Infrastructures Central Management

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RV "URANIA"

YEARS	N. SURVEYS	DAYS AT SEA	AVERAGE DAYS PER SURVEY
2013	23	316	14
2014	24	294	12
2015	13	215	17

MAIN TECHNICAL FEATURES

Category: Oceanic/Regional
Gross Register Tonnage (GT): 1115
Length overall (m): 61.3
Breadth (m): 11.1
Depth (m): 5.3
Draft (m): 4.6
Max speed (kn): 14.5
Service speed (kn): 11.0
Main engine (kW): 2x1000
Endurance: 45 days
Crew: 16 people
Scientific personnel: 20 people
Built year: 1992

Authors: De Lauro M. and Grazzini A.

Since last ERVO meeting in Barcelona studies for the improvement and strengthening of the RV Urania were completed. Particular attention has been paid to the integration of the new 6-meter section that will enhance the operational and accomodation capabilities of the ship. RV Urania has been working with CNR researchers on board until December 2014, then she moved to the yard in Livorno, where preparatory work started. All unnecessary material has been unloaded, interiors and scientific instrumentation have been dismantled; in the meanwhile the construction of the new section has begun. At the end of the preliminary work, the ship was hauled out and began the most delicate and spectacular operation: cutting and separation into two parts of the hull. The ship was cut with a blowtorch ahead of the engine room then the 2 sections have been separated via mobile carts placed under the hull. After a few days, the new section has been inserted and with the starting of welding and reconstruction, RV Urania has become again a single body.

Photos by Oliva F.

Aerial view of RV Urania after the 2 blocks separation

RV Urania soon after the cutting

The new 6 meter section on his way to the installation yard

The lifting trolley moving RV Urania from drydock to quay.

RV "MINERVA UNO"

YEARS	N. SURVEYS	DAYS AT SEA	AVERAGE DAYS PER SURVEY
2013	3	49	16
2014	1	15	15
2015	10	130	13

MAIN TECHNICAL FEATURES

Category: Regional
Gross Register Tonnage (GT): 624
Length overall (m): 46.6
Breadth (m): 9.0
Depth (m): 4.5
Draft (m): 4.6
Max speed (kn): 13.0
Service speed (kn): 10.8
Main engine (kW): 2x746
Endurance: 30 days
Crew: 10 people
Scientific personnel: 12 + 1 people
Built year: 2003 (upgrading 2010 and 2014)

Authors: De Lauro M. and Grazzini A.

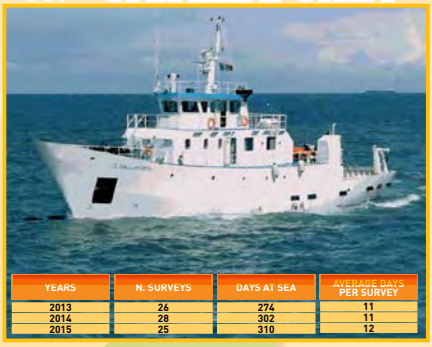
At the end of the work envisaged in the improvement and enhancement plans, RV Minerva UNO is now operational again and she is already working with CNR staff onboard. The works envisaged, among other interventions, the renewal of the scientific equipment with state of the art devices, manoeuvrability improvements with the strengthening of the bow thruster and the installation of a stern thruster, the increase of stability and route precision thanks to the construction of a new ventral fin, the building of a cabin for additional technicians, the installation of a new generator to cover the new energy needs and the renewal of the engine room automation. The work was carried out with the ship on the quay where she has been lifted by a floating crane. The first campaigns carried out after the end of works, were positive; despite a slight increase in displacement, the performance in terms of speed and consumption have not had any deterioration, on the contrary they even improved slightly. Stability and manoeuvrability were already good before interventions and they have further improved, with benefits on operation capability and safety.

Photo by Grazzini A.

RV Minerva UNO lifted by the floating crane on her way to sea after the first part of the works.

Night sight of RV Minerva UNO during one of the first 2015 cruises. It is evident the new bow design.

RV "G. DALLAPORTA"



YEARS	N. SURVEYS	DAYS AT SEA	AVERAGE DAYS PER SURVEY
2013	26	274	11
2014	28	302	11
2015	25	310	12

MAIN TECHNICAL FEATURES

Category: Regional
Gross Register Tonnage (GT): 285
Length overall (m): 35.3
Breadth (m): 7.7
Depth (m): 4.1
Draft (m): 3.0
Service speed (kn): 11.5
Main engine (kW): 810
Crew: 8 people
Scientific personnel: 12 people
Built year: 2001

Authors: Belardinelli A., Buglioni G.,Croci C., Domenichetti F., Martinelli M. and Penna P.

The UWTV system has been developed for the quantification of some fishery resources, but in the end it can be used for various purposes. The instruments developed by CNR-ISMAR of Ancona have been designed expressly to be used on the RV Dallaporta. They consist of a sledge to be pulled on the sea bottom that allow the housing of various instruments such as analog Kongsberg videocamera of the latest generation, LED lamps, laser for the definition of the field of view, SeaBird CTD multiparameter probe, bottom unit for the management of data communication and the supply of energy to the instruments, coaxial towing cable reinforced with Kevlar for towing of the sledge and transmission of images and other parameters collected to the unit of surface, stern roller for cable driving, winch with dedicated software (the stern of the RV Dallaporta has been adapted to accommodate this tool), security and recovery systems in case of accidental impact, deck unit for the control of all the equipment and recording and data archiving systems. The stern of the RV Dallaporta is particularly suitable for surveys that require fishing operations.

UWTV system - towed sledge, camera and multiparameter probe

Fishing operations on the stern of the boat

UWTV system - towing data cable and winch

SLOCUM DEEP GLIDER G2 "TERESA" + ROCKLAND SCIENTIFIC MICRORIDER

Slocum G2 glider with the Microrider installed on the top

Photos by Durante S. and Mazzei L.

"Teresa" during ballasting procedure in the CNR La Spezia Laboratory, Italy

MAIN TECHNICAL FEATURES - TERESA

Depth range from buoyancy: 1000 m depth
Global Positioning System: GPS
Satellite Telemetry: Iridium & Argos
Batteries: Alkaline and Lithium
Digital Tail Fin: digi-fin
Actual Payloads:
1 - CTD: Seabird Electronic SGP (Slocum Glider Payload)
2 - Dissolved Oxygen Sensor: Optode mod. 430 from Anderaa
3 - Microstructure Sensor: Microrider (MR) from Rockland Scientific
Purchase year: 2014

MAIN TECHNICAL FEATURES - MICRORIDER

Velocity shear - turbulence probes: SPM-38-1
Fast response thermistors: FP07-38-1
Micro conductivity probe: SBE-38-1
High resolution pressure sensor
High resolution acceleration sensor

Authors: Borghini M. and Vetrano A.

Glider "Teresa" is an autonomous underwater vehicles operating along vertical sections to monitor the water column up to1000 m depth. Equipped with CTD probe and fine structure sensors, it moves through the water column recording vertical profiles of hydrological properties and turbulence measurements through continuous cycles of immersion-emersion. Its vertical movement is particularly favourable for turbulence measurements. The fast-response shear probes and thermistors allow the glider to obtain turbulence measurements from two independent methods on the same platform. Part of the data are transmitted via satellite to data centre when the glider comes to the surface for positioning. The system has been acquired by CNR in 2014 as part of the EUROFLEEETS Project.

Glider "Teresa" deployment during a test fase in the Gulf of Poets -La Spezia

Glider "Teresa" during laboratory tests in La Spezia

Microrider mounted on the glider with all its sensors installed

17th ERVO

17th European Research Vessels Operators
Annual Meeting
10-11 June 2015
MARINE INSTITUTE
Galway (Ireland)