Istituto Nazionale di Oceanografia e di Geofisica Sperimentale

R/V OGS EXPLORA

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A MULTI PURPOSE SURVEY VESSEL FOR MARINE RESEARCH

The R/V OGS Explora is an ice-class, oceanic research vessel owned by OGS (National Institute of Oceanography and Applied Geophysics) since 1989.

The ship offers to both the European and the International earth and marine science communities a wide range of investigation capabilities, such as geophysical, marine geology and oceanographic facilities, instruments and laboratories.

This 73 m long, 1400 ton vessel can safely operate all the year round either in ocean or in polar environment, with the exception of thick ice-covered areas. It can accommodate 24 researchers and technicians, plus a crew of 18, and is capable of 30-day missions.

Among its several worldwide activities carried out since 1989, noteworthy are the eleven Antarctic cruises within the framework of the Italian Antarctic Program and the four Arctic cruises around the Svalbard Islands, one of which under the aegis of the 2008 International Polar Year (IPY).

The ship serves not only the research but also the offshore industry, being frequently employed in geophysical, well site and cable surveys. Moreover, OGS Explora has been recently chartered to foreign countries public institutions to conduct geophysical surveys aiming at the delimitation of the Exclusive Economic Zones (EEZ) boundaries and assessment of the hydrocarbon potential.

Thanks to its scientific geophysical and oceanographic equipment and capabilities, the vessel is considered a relevant research infrastructure at an international level. In 2008 OGS Explora has joined the EUROFLEETS project, the European excellence research alliance created to support the scientific marine research by providing efficient sea infrastructures and facilitating their coordination. In 2013, it has been included in the MERIL European database, an inventory of openly accessible research infrastructures.

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R/V OGS EXPLORA
TECHNICAL SPECIFICATIONS

General

Name	OGS Explora
Owner	Istituto Nazionale di Ocenaografia e di Geofisica Sperimentale - OGS
Built	Elsflether Werft A.G., Germany, 1973
Flag	Italian
Port / No.	Trieste - 764
Call Sign	IXWQ
IMO No.	7310868
Class	100-A-1.1-Nav IL ; IAQ-1 ; Ice Class IB
Material	Steel (hull) / Aluminium (superstructure)
Bunker	MGO

Dimensions

Gross Tonnage	1408 GT
Net Tonnage	422 NT
Overall Length	72.62 m
Moulded Breadth	11.8 m
Moulded Depth	6.55 m
Free Board	2154 mm
Draft	4.8 m
Displacement	1845 t

Main Machinery and Speed

Propulsion	2 x RBV8M545 DEUTZ diesel 8 cyl.-line
Installed power	2 x 1294,5 Kw (1780 HP) 500 rpm
Main gear	LOHMANN & STOLTERFOHT ratio 1:2
Propeller	1 Variable Pitch Propeller ESCHER WYSS
Speed (max)	14 kn
Speed (cruise)	12 kn
Endurance	about 30 days

Auxiliary Machinery

Aux	5 x TAMD 103A VOLVO PENTA 160 Kw
Electrical plant	5 x 200 kVA 440 220 V 50 Hz
UPS	Saft Nife 110/220
Fuel separator	OSD 6 WESTFALIA SEPARATOR
Oil separator	2 x OSD 6 WESTFALIA SEPARATOR
Air compressor	2 x L80 HATLAPA
Fresh water	watermaker MD 2000 TECNICOMAR 5760 l/day
	watermaker CS 2/44 TECNICOMAR 14400 l/day
	SFD13 SONDEX 20 t/day
Heater/Boiler	FSM 650 FROHLING 650000 kcal/h
	WERMERT (500l)
Seismic HP	3 compressors LMF 4 stages 24000 l/min - (140 bar)
Derricks/Cranes	1Derrick 47.48 KN
	1Crane HEILA Type HLRM 19/12 – 3SL
Davit	1 davit for life/rescue boat
	1 davit for service boat
Serviceboat	Zodiac Ribo 600 (70hp)

Marine Equipment

Magnetic Compass	Reflection Ludolph
Gyro	Gyrostar II Anschutz
Radars	FR2117 FURUNO
	TM 340AM SPERRY
	X band Bridgemaster DECCA
AIS	FA100 FURUNO
Autopilot	AP50 FURUNO
GPS	RS5000 SHIPMATE
Solcometer	Dopplerlog EML500 YOKOGAWA
Communications	Inmarsat C SKANTI Scansat CT
	Inmarsat Fleet Broad Band
	Inmarsat Fleet77 THRANE
	IRIDIUM Oilot
	VSAT data system
	Vhf SKANTI Vhf 1000 DSC
	MF/HF SKANTI TRP 1250 SDGTSP
	Navtex ALDEN AE-900
	Rx Sailor R1119 – Tx Sailor T1130
GMDSS	area A4 (SKANTI station)

Safety

MOB	Recue boat Pesbo BSC 40M
Lifeboat	Pesbo BSC 40M (42 people)
Life rafts	5 x 25, 1 x 20, 1 x 6 (156 people)
Survival suits	48
Fire fighiting	Hydrants, hoses and nozzles (3 fire pumps + 1 emergency) 58 portable fire extinguishers
Engine room	CO_2 extinguishers
Compressor room	CO_2 extinguishers + fixed fire line

Accomodation

IMO crew	10 x double room cabins
	4 x double room cabins with office
Scientific crew	12 x double room cabins
Hospital	1 single berths
Recreation	TV / Video Lounge
	Gym

Cargo Capacity

	Location
2 x 20' container	hold 2nd deck
2 x 10' container	back deck
	fore deck

SURVEY EQUIPMENT

Positioning and navigation

GPS	Aquarius THALES, Trimble, Topccon
DGPS	Veripos LD3 decoder (on demand)
Motion Reference Unit	IXSEA OCTANS - MBES interfaced
Gyrocompass	IXSEA OCTANS - MBES Interfaced
Navigation Software	PDS2000

Morphobathymetry

SinglebeamEcho Sounder	Simrad EA600
Multibeam Echo Sounder	
Shallow water	100 kHz Hull Mounted Reson SeaBat 8111
Deep water	12 kHz Hull Mounted Reson SeaBat 7150
Sound Velocity Probe	MIDAS Valeport

Sub-Seafloor acoustic

Sub bottom profiling	2-7 kHz Hull Mounted Benthos chirp 4 x 4 array transducers

Frames and lift equipment

Back deck A-Frame - SWL 20 ton
Starboard side frame equipped with winch (2*50m wire 18mm)
Port side frame equipped with winch (2*50m wire 18mm)
Crane Heila - SWL 6400 kg (Back Deck)
Crane NOVACOVIS - SWL 1360 kg 12 m (Fore Deck)
USBL pole (with joint flange)

Multi Channel Seismic

Sound Source	1 x 60 cu. in. Sercel Mini GI gun 4 x 210 cu. in. Sercel GI.guns 4 x 250 cu. in. Sercel G.guns
Firing Control	16 channels RTS Big Shot 4 channels Teledyne Hot Shot 4 channels RTS Sure Shot (spare)
ACQUISITION SYSTEM	
Fixed	120 channel Sercel Seal 428 1500 m long solid state digital streamer Channel Distance 12.5 m
Portable	96 channel CNT-2 Geometrics 300 m long Geometrics Geoeel streamer Channel Distance 3.125 m
Streamer Control	I/O System 3 Digicourse 5010 - 50111
COMPRESSORS	
Fixed	3 x 24000 l/min (2542 cfm) Leo
Portable	1 x 3500 l/min (125 cfm) Bauer hosted within a 20" container

Gravimetry

Fixed	Bodenseewer KSS-31
Portable	Lacoste & Romberg (port measurements

Seabed Sampling

Coring	5 m recovery gravity corer
Grabbing	25 kg grab

Oceanography

Physical Properties	Thermosalinograph SBE21 MK21 System
Acoustic profiling	Hull mounted 75 kHz RDI ADCP

Winches

HYDRAULIC WINCH OLEO MEC

Use	Side Scan Sonar / Rosette deployment
Static pull	7.2 tons
Min speed	1.96 m/s
Length	5800 m standard coaxial cable
Diameter	11.4 mm
Location	Back deck

HYDRAULIC WINCH OLEO MEC

Use	Coring
Static pull	4.2 tons
Min speed	1.70 m/s free-fall available
LengthWire	3500 m
Diameter	14.0 mm
Location	Back deck

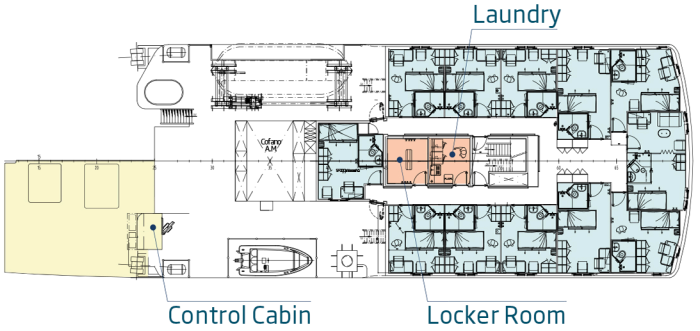
ELECTRIC WINCH RESON

Use	magnetometer deployment
Engine power	15 kW
Location	2nd (lifeboat) deck

ELECTRIC WINCH ARDEA

Use	SVP and grab deployment
Wire length	1800 m of 8 mm steel wire
Engine power	15 kW
Location	2nd (lifeboat) deck

Deck B - Scientific crew cabins

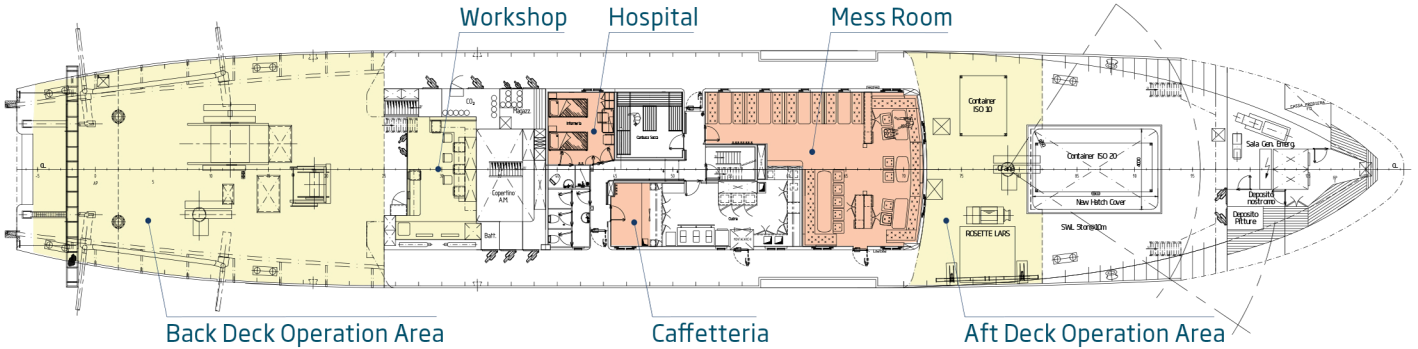


Cabins

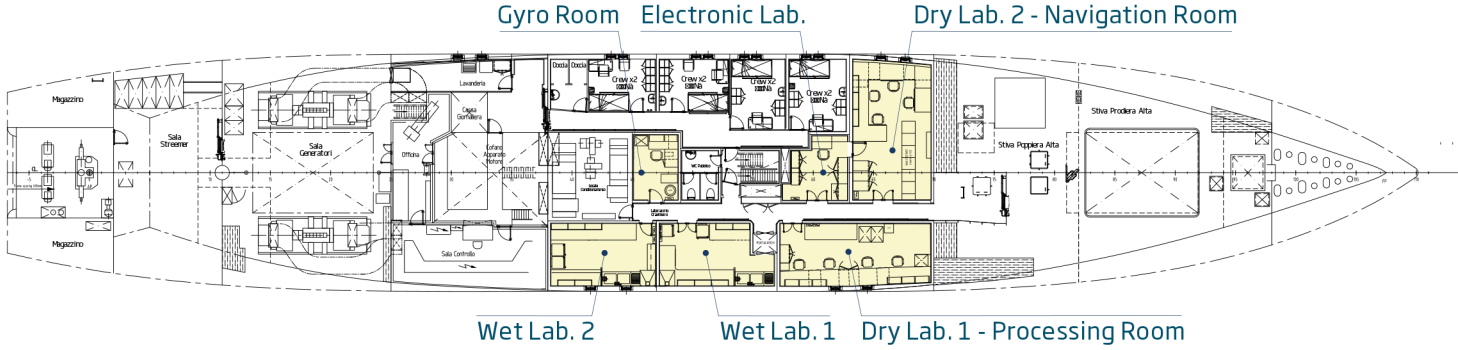
Work areas

Public and service areas

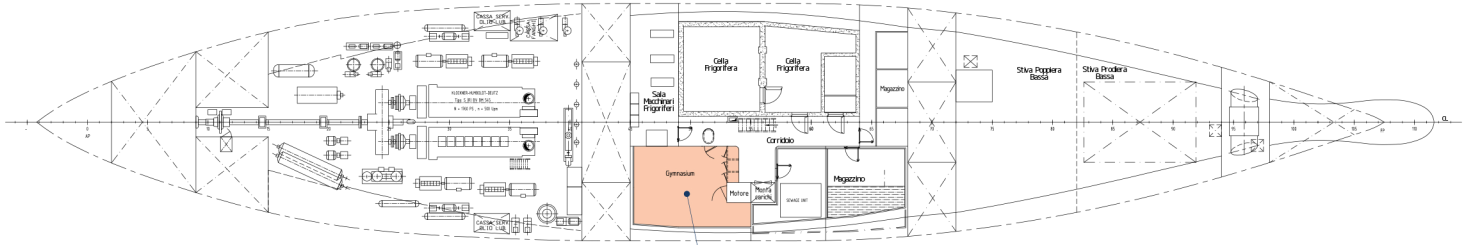
Deck A - Main Deck



1st Deck - Labs



2nd Deck




IMO 7310868
OGS EXPLORA

NATIONAL INSTITUTE OF OCEANOGRAPHY AND APPLIED GEOPHYSICS

The National Institute of Oceanography and Applied Geophysics - OGS - is a public research Institute which acts internationally in the fields of Earth and Marine Sciences, Oceanography, Geophysics and Seismology.
The Institute aims at safeguarding and enhancing the environmental and natural resources and focuses its efforts on evaluating and preventing geological, environmental and climatic risks, and spreading the scientific culture and knowledge.

OGS has four locations in the Friuli Venezia Giulia Region (North-Eastern Italy) and it is structured under four main Departments:

- Oceanography - OCE;
- Geophysics - GEO;
- Seismological Research - CRS;
- Research Infrastructures - IRI.

With its strategic infrastructures of excellence (such as the oceanographic research vessel OGS Explora), OGS makes its own expertise available for research related to environment and climate, biodiversity and ecosystem functionality and to the study of seismicity, hydrodynamic and geodynamic phenomena having an impact on both environment and population.

HEADQUARTER

The headquarter hosts the offices of the Presidency, the Administrative and Technical Departments and the four Scientific Departments. It is located in the municipality of Sgonico, 12 km from the center of Trieste.

Borgo Grotta Gigante 42/C - 34010 Sgonico (TS) - Italy
Tel.+39 040 21401 - Fax.+39 040 327307

SANTA CROCE

The biochemistry and biology labs of the Oceanography Department are adjacent to the sea.

Via Auguste Piccard, 54 - 34151 Trieste (TS) - Italy
Tel.+39 040 21401 - Fax.+39 040 327307

MIRAMARE

Here are hosted the modelling and High Performance Computing labs of the Oceanography Department.

Via Beirut 2/4 - 34014 Trieste (TS) - Italy
Tel.+39 040 21401 - Fax.+39 040 327307

UDINE

Here is located the Department of Seismological Research.

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