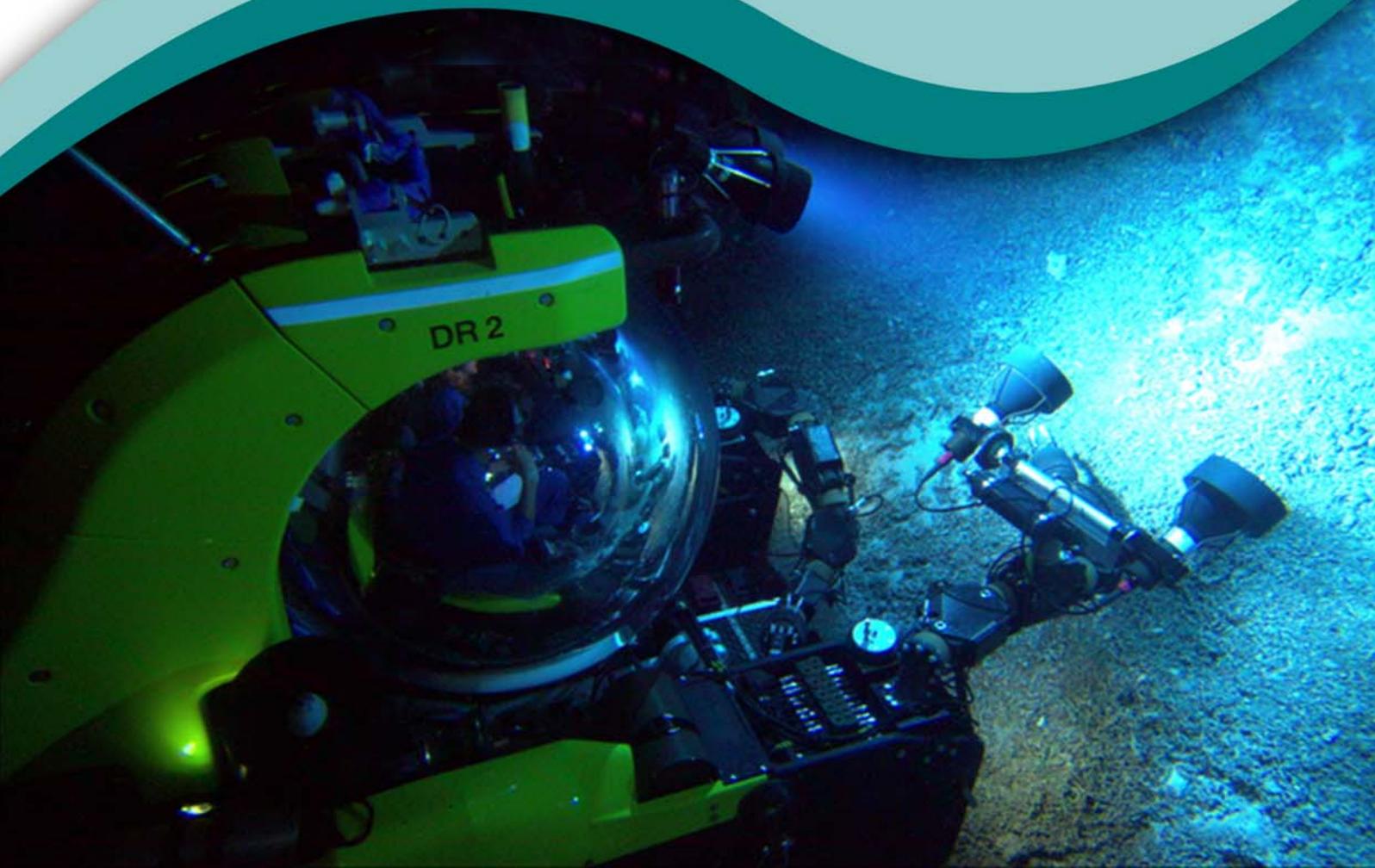


DeepOcean Quest

A Unique Ocean Exploration Initiative



Summary

DeepOcean Quest is pleased to introduce you to MV Alucia, a comfortable, very-well-appointed, multi-role research vessel equipped with three deep-diving manned submersibles. A carefully conceived operation managed by an experienced team, Alucia is well-positioned to become the leading ocean exploration vessel for clients in the private sector and beyond. DeepOcean Quest is a privately owned, visionary project that will leave a remarkable legacy for future generations.

Our Vision

DeepOcean Quest was conceived foremost as a means of facilitating marine science and ocean exploration. Our role is to provide scientists, ocean explorers, organizations, governments and private individuals with access to a unique manned deep submergence and science capability.

It is our intent that Alucia will be used for a wide range of projects that are positive both for the oceans and humanity. These include pure and applied science, core exploration, documentary filmmaking, marine outreach and education and leading-edge, high-end private adventure opportunities.

Introducing a hybrid vessel of unique potential

MV Alucia stands in a class of her own. Combining shipboard comfort with the capabilities of a modern oceanographic research ship, there is simply no other vessel in the world like her.

Conceived for an ambitious and extended mission of global exploration and science, Alucia is the consummate expedition ship. Her three modern deep-diving submersibles add a new dimension to her operational capability - the means to explore the universe below as never before. A suite of advanced shipboard technology enables Alucia to explore, map and sample a realm that is mostly unknown, even today.

Alucia is unashamedly futuristic and elegant, yet exceptionally versatile and beautifully matched to her intended role. A one-of-a-kind asset, she is poised to carve a niche as one of the world's leading privately operated research and exploration vessels.

Michael McDowell invites you to join DeepOcean Quest in a new era of manned exploration and science in the oceans. This is a rare opportunity to reinvigorate the magical sense of fascination, exhilaration and pure joy that comes with true discovery.



DeepOcean Quest's twin Deep Rover submersibles

The Last Frontier

We live on a blue planet. Land occupies less than a third of the globe. The rest is ocean, most of it unexplored. This is a place rich in natural wonders and archaeological sites, a place of mystery, where bizarre fish and giant squid swim in anonymity, and billions of dollars of mineral and energy resources lie unseen.

There are pressing reasons to study the ocean. It has a critical role in determining Earth's climate, a role with profound consequences for humanity and all other life. Today, undersea resources have a vital place in the global economy, and are destined to occupy an ever-greater relevance in our increasingly overcrowded world.

Yet we know so little: the scale of the scientific challenge ahead is immense. Biologists estimate that millions of marine species remain to be discovered. Geologists routinely find new undersea mountains that rival Mt Fuji in size. In a very real sense, the ocean is Earth's final frontier.

The Challenge

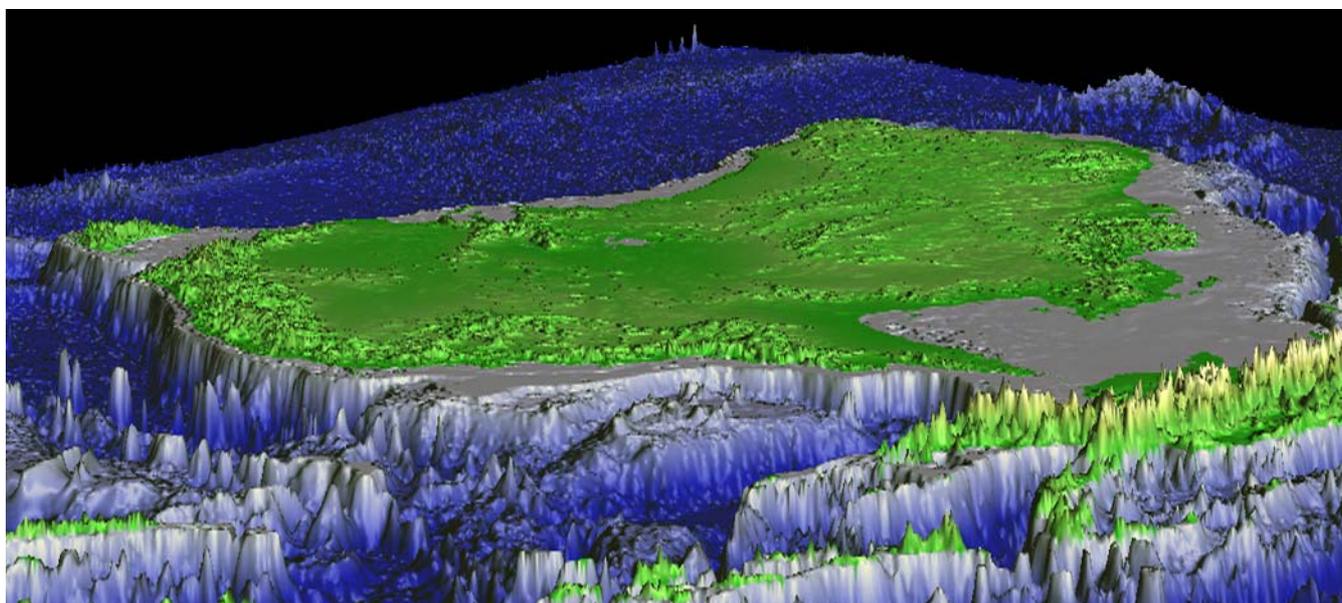
Marine scientists are calling out for a dramatic increase in efforts to understand the oceans. MV Alucia will take up this challenge, serving to extend the boundaries of our known world. Her primary mission is to explore and study the undersea realm, and communicate her findings to a wide audience. She represents a carefully

conceived and highly efficient private-sector response to the urgent needs of an under-resourced and over-stretched science community.

An underlying vision of DeepOcean Quest is to proactively take Alucia and her submersibles 'off the beaten track', to the world's lesser known regions. Enormous tracts of ocean are still unexplored and unknown, and many of them lie well outside the reach of government-funded science programs. Alucia's expedition program will focus on locations that are chronically understudied - the missing, and perhaps critical, pieces in the jigsaw.



Dumbo octopus



Australia as you've never seen it before

The Ship

MV Alucia's unique concept fuses deep-sea science and exploration with dedication to passenger comfort. The heart of our operation, this 183-foot (55.75 meter) vessel has a global reach extending from the tropics to the polar regions.

Alucia was designed as a platform for deep-diving submersibles. Compared to other vessels in her class, she has notable heavy lift capabilities, excellent stability and ample deck space.

During late-2007 Alucia will complete the final stages of an extensive refit/rebuild in preparation for her new role. The addition of new deck gear, sampling gear and laboratory facilities enable the ship to perform the duties expected of a modern oceanographic research vessel and mother ship to her submersible fleet: the twin Deep Rovers and the Dual Deep Worker.

The comprehensive refit entails replacement of 90 percent of Alucia's operational systems: new engines and new electrical, navigation and positioning systems, communications, and seafloor mapping capabilities via Reson 8111 and 8150 multibeam sonars. With accommodation for 38 persons, including 12 first-class passengers, Alucia can participate in extended, multi-tasked cruises, enabling efficient use of her facilities. During typical cruises, the ship's complement will normally include 14 crew, 6 submersible team members, and 15-18 additional berths for scientists, filmmakers, guests and paying passengers.

DeepOcean Quest utilizes the talents of a diverse range of skilled and passionate staff. Alucia will be crewed by a carefully selected team of officers and crew, and the submersibles will be operated and maintained by an experienced group of technicians and pilots. The company's senior management team is well-practiced in operations of this kind.

Alucia's scuba and mixed-gas diving facilities include all standard diving equipment, compressors, a four-person decompression chamber, a suite of modern watercraft, including a powerful tender, which performs submersible tracking duties, ship-to-shore transfers and recreational activities.

Environmental impacts during operations are reduced by the addition of modern waste management systems, enabling Alucia to operate in ecologically sensitive areas. The vessel's ice-strengthened hull and the addition of a helipad add to her operational versatility. Alucia's full specifications are included as an appendix.

Shipboard ambience:

Alucia is a very comfortable vessel with luxury yacht-styled passenger accommodations. Her upper three decks are very well appointed, meeting the high standards expected by VIPs, invited guests and high-end private adventurers. Alucia's six double staterooms provide first-class accommodation for up to 12 paying passengers. A comfortable and stylish lounge, dining area and flybridge complete the ambience. The well-equipped galley enables the ship's chefs to prepare four-star cuisine.



MV Alucia

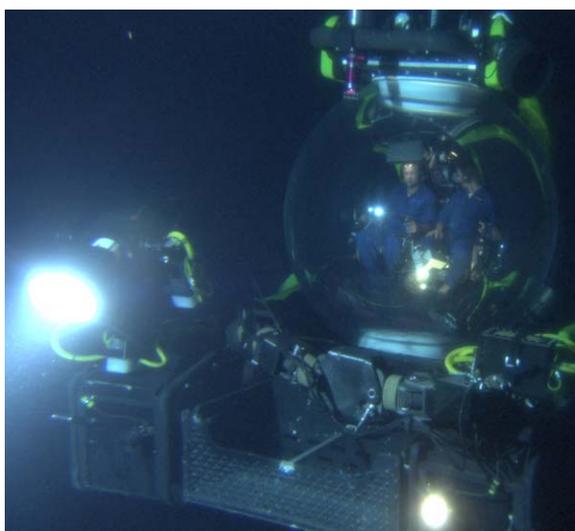
Undersea Technology

DeepOcean Quest operates three manned submersibles, the twin Deep Rovers and a Dual Deep Worker.

Deep Rover:

The Deep Rover is a submersible that looks like it belongs in science fiction. These state-of-the-art submarines are destined to become icons of modern-day exploration as DeepOcean Quest's expeditions progress.

Appearances aside, the Deep Rover is a very capable and well-designed vehicle. Each one can take two occupants to a depth of 1,000 meters (3,200 ft) in comfort and safety. Many of the ocean's most remarkable features - both geological and biological - lie within this depth range.



Exploration in progress

The view from the Deep Rover's acrylic sphere is unparalleled, with a 320° field of view. A finely tuned system of ballast control and thrusters provides the submersible with exquisite maneuverability at any depth.

A powerful lighting system and high-definition television camera provide for both scientific data collection and professional quality filmmaking. A pair of mechanical arms enables each Deep Rover to collect samples and deploy instruments and specialized biological and geological sampling tools on the seafloor and above it.



DeepOcean Quest's Dual Deep Worker

Dual Deep Worker:

Dubbed the 'sports car of submersibles', the Dual Deep Work is a sleek two-person submarine capable of diving to 600 meters. Built by Canadian company Nuytco Research, its novel twin-pod design makes it maneuverable and provides excellent visibility for both the pilot and passenger. Able to be custom fitted with sophisticated biological sample collection equipment on a dive by dive basis, the Dual Deep Worker adds significantly to the already-formidable capabilities of the Deep Rovers.

Built with safety in mind, this submersible can dive beyond the 'twilight zone' of the ocean (down into giant squid territory!) but is equally well suited to exploring tropical reefs or sunken wrecks in shallower waters. In conjunction with the Deep Rovers, the Dual Deep Worker adds flexibility to science and filmmaking operations, serving either as an additional lighting platform or, on occasions, as the onscreen 'star'.



A skate fish



The deep-sea lizardfish

Project Management

Primarily DeepOcean Quest is not intended as a major business venture - it's an enterprise designed to broaden our collective horizons. Nonetheless, we run a tight ship, financially speaking.

The company benefits from decades of in-house marine logistics experience. In the 1990s Mike McDowell successfully pioneered the use of research ships and manned submersibles in expeditions to remote and challenging locations around the world, from Antarctica to the tropics and down into the abyss.

The structure of DeepOcean Quest's operation, both at a logistical and management level, incorporates many efficiencies. The vessel herself has been built with a thorough understanding of client needs for science, filmmaking and general purpose requirements, and with an eye towards achieving the most cost-effective solutions.

DeepOcean Quest Core Activities

MV Alucia is a vessel that can conduct a cutting-edge science expedition one week, film a world-class documentary the next week, and comfortably host VIPs the week after that. On occasions several of these roles will be assumed during a single expedition. It is this versatility that is the key to the operation's long term success.

Marine Science:

DeepOcean Quest is all about science, exploration, education and knowledge. Few vessels in the world have the marine research capabilities of MV Alucia and science-focused charters are expected to form a significant and ongoing core activity for DeepOcean Quest. Some project-specific science funding for Alucia-based research has already been acquired from both the German Research Foundation (project led by Dr Gert Wörheide) and the Australian Government (project led by Dr Justin Marshall).

High-End Science-Focused Tourism:

Mike McDowell pioneered deep-sea adventure diving for paying participants (he prefers not to use the word 'tourist' to describe his clients). These participants are people with a genuine interest in learning more about our world; they obtain personal satisfaction from supporting scientific endeavors, and they enjoy adventures in knowledge and the rewards of enthusing others about the wonders of the underwater world. Alucia can provide the quality of accommodation and service expected by clients who have paid tens of thousands of dollars for the privilege of joining one of her expeditions. Some expeditions may be set aside as passenger-focused (these might occupy 1-2 months of vessel time each year), while other expeditions may take on a smaller number of passengers opportunistically.

Filmmaking:

Alucia, her submersibles and other facilities, are the perfect combination for deepwater documentary and feature filmmaking in HD and IMAX formats. Filmmaking will be an ongoing income stream for DeepOcean Quest. Our team has much experience in supporting this industry, including James Cameron's Earthship Productions, Discovery Channel, National Geographic, BBC and NHK. Alucia has already been contracted for a major television event, as well as several documentaries, to be filmed in late 2007 and 2008.

Private Charter:

We believe there is a niche market for clients who are looking for a very comfortable expedition cruise experience that also offers the thrills, excitement and intellectual stimulation offered by manned submersibles and Alucia's cutting-edge science assets. Private charters will constitute an intermittent

but occasionally substantial source of revenue. We see this income stream as potentially financing DeepOcean Quest's science, exploration and educational endeavors.

Intellectual Property:

Intellectual property includes intangible assets that can be legally protected by means of copyright, trademark or patent law. Over time DeepOcean Quest will actively create various forms of intellectual property (video footage, multibeam data, photographs). Our team will work to leverage IP to generate DeepOcean Quest branded products (posters, books, DVDs, etc). Opportunities exist for IP revenue-sharing with partners in the biotechnology sector.

Sponsorship:

With an exciting mission of exploration, laudable goals, and sleek futuristic assets, DeepOcean Quest is well-positioned to leverage her unique brand to secure ongoing corporate sponsorship and non-profit foundation support. We are actively engaged in discussions with major corporations to this end.

Commercial Offshore:

Although not within the primary scope of Alucia's mission, commercial work offers a significant revenue source that can be used opportunistically. At times, Alucia may be profitably employed to conduct seafloor mapping surveys, pipeline inspections and environmental impact assessments. DeepOcean Quest will not engage in commercial projects that are contrary to environmental best practice.

2007 - 08 Project Schedule

Our planned 2007 - 08 itinerary comprises the following locations:

- Costa Rica, Panama and Colombia (science)
- Fiji (science)
- French Polynesia (science, filmmaking, private charter)
- Phoenix Islands, Kiribati (science, filmmaking)
- Australia (science, filmmaking)
- New Zealand (science)
- Mexico (science and filmmaking)

All these regions possess largely unknown but fascinating habitats rich in biological diversity, new species and dramatic seascapes. All have great potential for good, compelling science, excellent filmmaking opportunities, and good outreach and education possibilities. Beyond the first year of operation we and our colleagues in the science and filmmaking communities have numerous ideas for exciting, enjoyable and worthwhile projects that will take years to complete.



A deep-sea glass squid

What do our Clients and Colleagues Think?

James Cameron - Filmmaker

"Alucia's ability to deploy her three submersibles anywhere in the world opens up exciting opportunities for cutting-edge undersea filmmaking, science and exploration."

Dr Greg Stone - Oceanographer

"Because the oceans are critical to all life on Earth, largely unexplored, and under numerous threats from human activity, the Alucia and her Deep Rover submersibles are very much welcome and eagerly anticipated in the marine research and conservation communities."

Dr Gert Wörheide - Marine Geobiologist

"For our expedition to the Queensland Plateau in the Coral Sea, which is one of those sunken "lost worlds" of the ocean, DeepOcean Quest and MV Alucia provide the best option worldwide for deep exploration using state-of-the-art technology.

MV Alucia is one of the few vessels of its size and specifications capable (and willing) of operating close to coral reefs - essential for our intended project. The two Deep Rovers provide an unprecedented platform to directly observe (and collect) a relict fauna that survived since more than 60 Million years."

Dr Justin Marshall - Marine Biologist

"One particularly unique feature of mv Alucia is her global range. Rather than working around a home base, she will have the ability to operate anywhere in the world. In the near future we intend to cover the seamounts, canyons and reefs of Australia of New Zealand. After that, anywhere.

We aim to explore and discover life at depths from 50-1000m off The Great Barrier Reef, around the seamounts of Lord Howe Island and Tasmania as well as in the deep canyons of WA and SA. We expect to discover new species, hope for a glimpse of giant squid at home and will answer specific questions on Australia's ocean biology, fisheries and biotechnology never before approachable. Outcomes from this project will guide policy on Australia's unexplored deep-sea. To be effective guardians of Australian waters we must learn what lies in the depths that we can't see from a boat."

Dr Carole Baldwin - Marine Biologist

"It is estimated that more than 95% of the livable space on Earth is in the ocean and less than 5% of this has been explored! The next couple of decades have the potential to be the 'Age of Exploration of our Oceans', and the MV Alucia, with its three submersibles, will be invaluable in this modern mission of ocean science."

Andrew Wight - Documentary Filmmaker

"I have been making ocean adventure documentaries for 20 years and have been to some of the most remote places on Earth. So I feel qualified to endorse the new research/ expedition vessel "Alucia", with its formidable array of sophisticated deep sea technology making it one of the best documentary and research ships afloat today."



MV Alucia Specifications

General Characteristics

- Launched 1974
- Refitted 2007
- Flagged Panama
- I.M.O number 7347823
- Length overall 55.75 m
- Breadth overall 11.91 m
- Maximum draught 4.68 m
- Load displacement 1,857 tonnes
- Gross tonnage 1,142 UMS
- Classification Bureau Veritas
- Speed 11.0 knots
- Accommodation Up to 46 persons (typically 14 crew / 6 submersible crew / 16 scientists/documentary personnel including up to 12 paying passengers)
- Main Engines 2 x Cummins - Type KTA50M2 - 1600HP@1800R.P.M
- Generator Engines 3 x Detroit Diesel Engines - Series 60 - 400BHP @1500R.P.M
- Propulsion 2 x propellers - 4 blades 81"
- Bowthruster 1 x Gill jet - 440 kW multidirectional thrust engine (360°)
- Bowthruster Engine Detroit Diesel Engines - Series 60 - 500BHP@1500R.P.M
- Sewage Treatment Omnipure - model 12MC unit
- Oily Water Treatment System - Village Marine Tec's - Model 2.2-11GPM
- Watermakers 2 x Sea Recovery - model SRC CORAL SEA - 2800 GPD 3"
- Ozone water treatment system - Chem Free C-15ADC/HO
- Ultraviolet water treatment unit - Ultradynamics 8102-GIE50
- JP5 (helicopter jet fuel) filling system - 9,000 U.S. Gallons

Deck Equipment

- Swinging stern A-frame for launch and recovery of submersibles: SWL 22 tonne block-rigged jack
- Lifting jack with soft line: SWL 22 tonne
- Aft Crane: SWL 10 tonne
- Fore Crane: Marine crane Model MPH1-20K - SWL 1 tonne
- Pullmaster M50 Hydraulic winch on A-Frame, 25 tonne pull.
- Winch: Markey DUSE 4 (converted to hydraulics) fitted with 4,000 meters (13,123 ft) of Rochester 322 oceanographic cable. Cable has a 2500 lb working load and will take intermittent loads to 4000 lb. and has 3 coaxial wires.
- Hydro winch for CTD and other samplers with 2073 meters (6,800 ft) of Rochester 0.318" cable

Submersible Installation

- Two (2) Deep Rover (DR) manned submersibles rated to 1,000 meters
- One (1) Dual Deepworker manned submersible rated to 600 meters
- Rail system imbedded into deck with dedicated trolley for each submersible
- Covered hangar for submersible maintenance, equipped with door for inclement weather
- Dedicated battery charging system for each submersible
- Fully equipped mechanical workshop with lathe and welding equipment
- Haskell brand oxygen transfer pumps

Diver Support

- Twin 20-HP air/nitrox compressors capable of 26.4 cfm/752 lpm to pressures of 6000 psi/413 bar
- 25-HP NITROX MAKER with Triox blending system, capable of 57 cfm@175psi for the chamber and 20 cfm for Nitrox, Dual Oxygen and Helium Analyzers integrated into the Nitrox Maker/Triox output and Tankfill output
- Oxygen, Nitrox, Triox, Trimix or Heliox high-pressure storage configured in 2 x 9-bank Cascade

with 270,000 litres capacity

- Trimix / Heliox Partial Pressure Blending Panel with twin integrated Oxygen compatible boost pumps, a helium booster pump and an Argon booster pump.
- Diver Propulsion Vehicles for snorkeling and SCUBA excursions
- 54-inch twin lock deck decompression chamber with medical lock and NATO transfer flange allowing mating with a Hyperbaric stretcher for Helo-transport

Radio Communications

- VSAT Sea Tel 9707 C-Band global coverage (connected to ship's PABX) phone, email and internet
- Iridium fixed telephone - 4 x Sailor SC4000 (connected to ship's PABX)
- Inmarsat Fleet 77 - voice/fax communications Sailor Fleet 77 (connected to ship's PABX) - voice, fax and email
- Dual frequency, high output power underwater telephone (UWT) system for subsea communication with submersibles
- GMDSS compliant
- Inmarsat-C Furuno Felcom 15 (GMDSS)
- MF/HF DSC SSB Furuno FS1570 150 Watts
- VHF DSC class A Furuno FM8500
- VHF DSC class D Simrad RS86
- VHF DSC class D Simrad RS87
- VHF DSC class D Icom M604
- Loudhailer Furuno LH3000
- VHF AM aircraft Icom IC200B
- GSM fixed phone Tellular SX5E (4 each) connected to PABX
- PABX Panasonic TDA100

Scientific and Filmmaking Facilities

- Multibeam Sonar : Reson 8150 (full ocean depth capable to be installed at later date) and Reson 8111 ER (already installed and optimized for 0-1200 meters depth)
- Wet laboratory with 220v and 110v power source and fresh/salt water supply
- Dry laboratory
- Olympus CX-41-12000X compound microscope and SZ-61TRC dissecting microscope, both trinocular with Canon PS640 10Mgpx camera and adapter
- Temperature-controlled aquarium laboratory
- Video and photographic post processing laboratory
- Remote sensing control room (multibeam, communications and ROV control)
- 20-foot container dry laboratory can be added as necessary
- 2 self-opening/closing tucker trawl systems, one RMT8 and RMT16, each with depth sensors, net trigger releases and spare cod ends (2 x RMT8 nets, 2 x RMT16 nets)
- Neuston sampling nets
- Seabird 911plus CTD with SBE 32 carousel water sampler and 12 10L Niskin bottles
- CTD-mounted SBE 43 Dissolved Oxygen Sensor rated to 7000 m
- CTD-mounted WET Labs ECO-FL(RT)D Deep Chlorophyll fluorometer; 100 µg/l range, 6000 meter rating
- CTD-mounted WET Labs cs-25-660 (red) C-STAR transmissometer, 6000 meter rating, 25 cm path
- Applied Microsystems SV Plus vertical profiler and SV Micro for multibeam system
- DeepCam 3,000-meter programmable high-resolution still camera system available

Computer Systems and Networks

Vessel Network:

- 3 TB of Raid 5 Storage
- 1 File and Print Server
- 10 vessel workstations
- 4 Printers
- Additional "E" Size plotters planned

- Cat 5 cabling enabling up to 1 Gb network speed
- Both wired (80 Jacks) and specific locations (4) wireless access
- Off-Ship connections: V-Sat, Fleet 77, Iridium, WiFi

Science Network:

- 3 computers located in MCR
- 6 TB storage Raid 5 (Multibeam)
- Cat 5 cabling enabling up to 1 Gb network speed
- Firewall separate SciNet from Ships network
- Off-Ship connections: V-Sat, Fleet 77, Iridium, WiFi

Media (Production) Network:

- All Apple Systems
- 2 Full productions workstations cable of 1080P HDI production via a twin fiber connection
- 2 Workstation servers, One for each Workstation to allow simultaneous operations
- 10.5 Tb storage via high-end Apple Raid 5
- Full automatic tape back-up system with independent server enabling simultaneous back up
- high-speed fiber cabling for network
- Firewall separates MediaNet from Ships network
- Off-Ship connections: V-Sat, Fleet 77, Iridium, WiFi

Navigational equipment

- S-Band Radar: Furuno FAR-2837S/10
- X-Band Radar: Furuno FAR-2117
- ECDIS: Transas Navi-Sailor ECDIS 3000i with World Chart Folio
- DGPS: Furuno GP-37 (2 ea)
- GPS: Furuno GP-32
- Echosounder: Furuno FE-700
- AIS: Simrad AI80
- Gyrocompass: SG Brown Meridian Surveyor
- Gyro repeaters: Scan Micro Systems LM60 (2 ea)
- GPS Compass: Furuno SC110
- Thermal Camera: Flir Mariner
- Speed Log: Furuno DS80

Fisheries equipment

- Fisheries echosounder Simrad ES60 38/200 kHz
- Forward looking sonar Furuno CH250 150 kHz

Steering

- Autopilot Raytheon Anschutz Nautopilot 2015
- Rudder Angle Indicators Raytheon Anschutz
- Gyro Analog Repeater Raytheon Anschutz

Safety equipment

- EPIRB Jotron TRON 40 GPS Category 1
- GMDSS Handhelds Jotron TRON 20
- SART Jotron X-95400

Support Craft

- Inflatable RIB's Two MkV inflatable Zodiacs
- Tender Northwind 32ft rigid hull inflatable, twin jet drive 640hp
- Personal Water Craft 2 x Seadoo PWC
- Helicopter deck with approved facilities (jetfuel only)

Deep Rover Submersible Specifications

General

- Launch Date: 1994
- Built: Deep Ocean Engineering, California, USA. Surveyed by American Bureau of Shipping (ABS).
- Size: Length 3.3 m / 11 ft.
- Width: 2.5 m / 8 ft.
- Height 2.5 m / 8 ft.
- Weight 6,300 kg / 13,900 lb (with crew and equipment).
- Operational Depth 1,000 m / 3,280 ft.
- Crew 1 pilot, 1 observer.

Pressure Hull

- Transparent acrylic sphere.
- 320° unobstructed view.
- Inside diameter: 1480 mm / 60 in.
- Outside diameter: 1750 mm / 70.5 in.
- Thickness: 135 mm / 5.25 in.

Maneuvering

- Two vertical thrusters - 3.75 kW / 5 Hp each
- Two horizontal thrusters - 3.75 kW / 5 Hp each
- All thrusters controlled by a single, three-axis proportional joystick.

Control Systems

- 2 axial thrusters with an angle of 15° closing astern.
- All thrusters are independently activated, bi-directional, variable speed, proportionally controlled and with limited energy requirements. Intuitive control of the two manipulators controlled by individual joysticks.

Power Source

- Lead acid batteries:
- 120 Volt Battery - 33 kWh / 280 Ah.
- 24 Volt supply is derived from a 120/24 DC/DC converter.
- 12 Volt Battery - 3.3 kWh / 280 Ah.
- 24 Volt Emergency Battery - 300 Wh / 12.5 Ah.

Ballast

- Main Ballast Tank (MBT) - 114 kg / 252 lb.
- Variable Ballast Tank (VBT) - 114 kg / 252 lb.

Life Support

- Metabolic make up system.
- Breathable quality MBT air capacity - 16 m³ / 565 ft³
- Breathable quality VBT air capacity - 16 m³ / 565 ft³
- Emergency life support - 160 man hours.
- Carbon Dioxide Normal - Sodalime.
- Removal System Emergency - Lithium Hydroxide (LiOH).

Weighting

- Trim weight in air: 110 kg / 243 lb.
- Emergency Dropweight Trim weight in water: 98 kg / 217 lb.

- Emergency dropweight: 114 kg / 252 lb.

Manipulators

- Two hawk sensory manipulators.
- Lifting capacity in extension 45 kg / 99.5 lb.
- Jaw closing force tightening 89 dan.
- Jaw rotation technique 9.5 dan/mtr.

Lighting

- 4 x 1200 Watt HMI lights (day light).
- 4 x 450 Watt HMI lights.
- 4 x 150 Watt HMI lights.
- Xenon flash.
- Plus ability to add additional lighting packages.

Other Equipment

- Underwater tracking by Trac Point II system.
- Atmospheric monitoring system (O2, CO2, pressure, temperature and humidity).
- Air conditioning system.
- Central computer for thruster commands, diving data, function conditions, alarms.
- Magnetic compass, fluxgate.
- Simrad MS900 color imaging sonar.
- Underwater acoustic telephone communication system
- 10 kHz and 27 kHz.
- Altimeter, depth sounder to 150 m / 490 ft.
- Marine VHF unit for surface communications equipped with GPS data stream.

Dual Deep Worker Technical Specifications

General

- Launch Date July 2003.
- Builder Nuytco Research Co:Vancouver, Canada. Surveyed by Lloyds Register of Shipping, UK.
- Size Length 2.2 m / 7 ft 2.55 in.
- Width 2 m / 6 ft 7.42 in.
- Height 2 m / 6 ft 7.3 in.
- Operating Depth 600 m / 2,000 ft.
- Maximum Speed 2 - 3 knots.
- Crew 1 Pilot / 1 Observer.
- Payload Standard 315 kg / 700 lb.

Pressure Hull

- Two independent hulls 960 mm / 38 in diameter sphere attached to 610 mm diameter by 910 mm diameter (24 inch diameter by 36 in diameter) long leg cylinders. Manufactured of A516 grade 70 steel with 316 stainless steel hatch ring.
 - Pressure hulls installed on a 'J-Can' frame above two cylindrical aluminium battery pods.
 - Viewing Ports Two 760 mm / 30inch diameter acrylic hemispheres serving as entry/exit hatches.
 - Power Source Two 460 mm / 18 inch diameter battery pods. Each pod contains 10 high Ampere, deep cycle AGM batteries. Nominal voltage 240 VDC, 12 kW total power. 12 and 24 Volts (500 Watts) supplied by converter.
 - Ballast 175 cubic feet of ballast air provided to fill bow/stern 'soft' buoyancy tanks.
- Bow tank 62 kg (145 lbs) lift, stern tank 100 kg (224 lbs). Lift Thruster control available from either hull. Auto depth control via on-board PLC.

Maneuvering Control

- Four Main one H.P. horizontal thrusters. Two one H.P. ducted vertical thrusters located fore and aft.

Life Support

- 160 man-hours from four oxygen cylinders carried externally. Four mechanical oxygen controllers with electronic and analog monitoring. Carbon dioxide removed via four independent scrubbers. Emergency breathing via built in breathing system (BIBS).

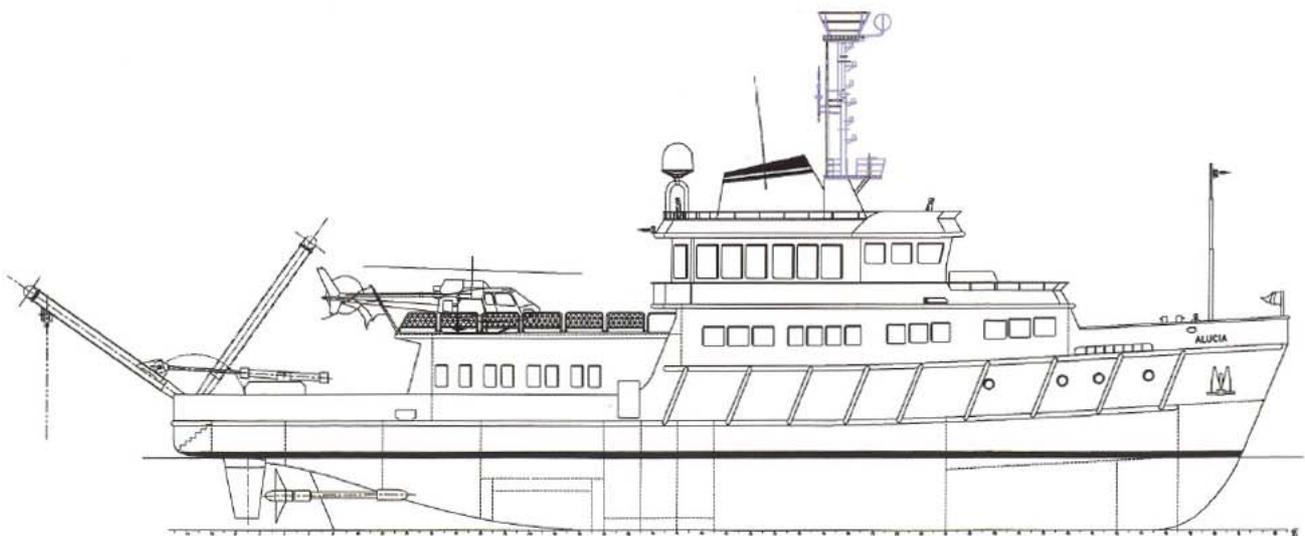
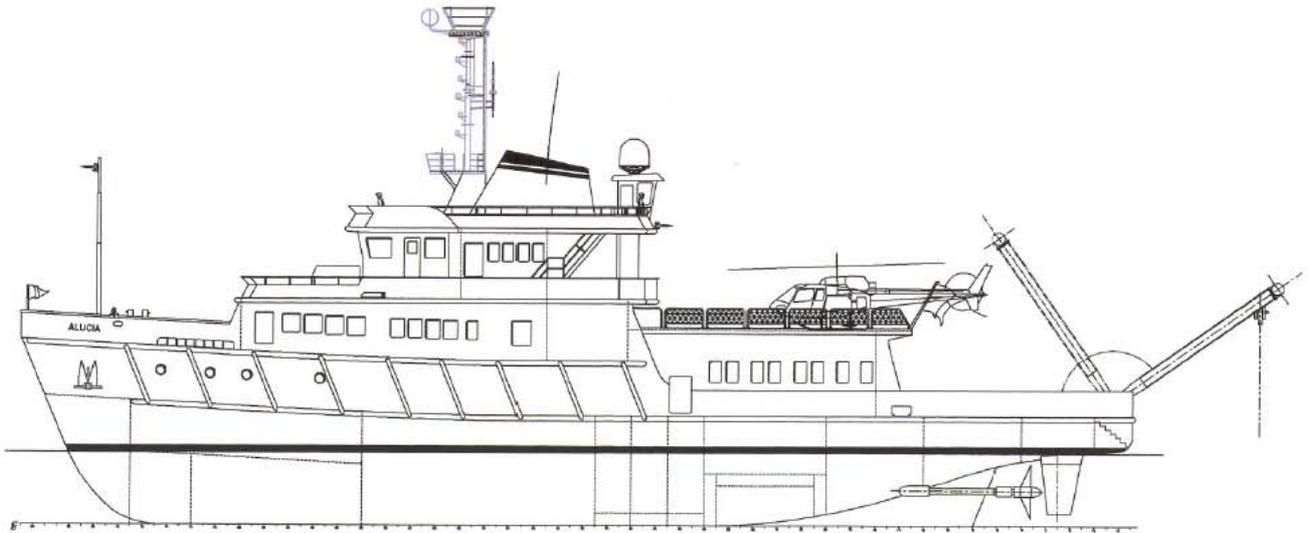
Navigation Systems

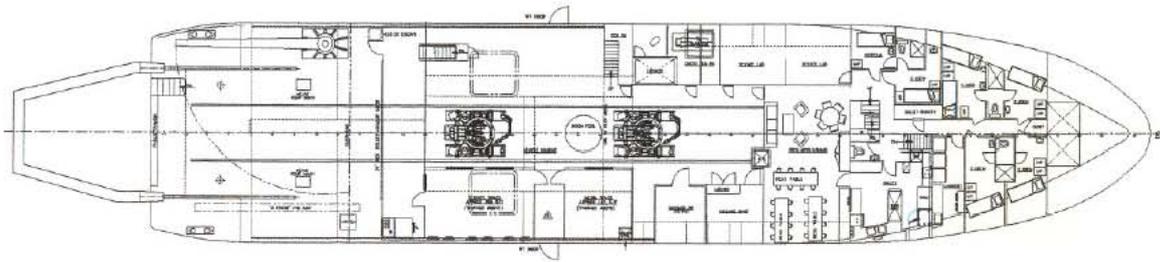
- Gyro Compass. Modified Imagenex Sonar unit switchable from standard scan to high-resolution short range.

Observation

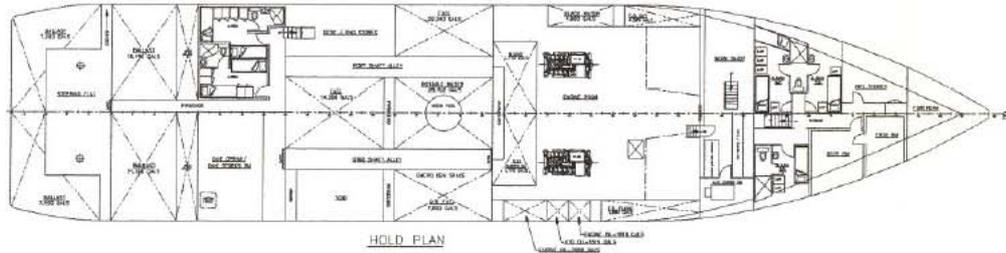
- 2 x 200 Watt Newtlite, HMI lighting system. Plus ability to add lighting and camera packages.
- Installed Camera System 1/3 inch super HAD CCD. 768 x 494 NTSC picture elements. 460 horizontal TV lines. 12 x zoom lens. 3000 m depth rating.
- Communication Surface standard marine VHF radio. Subsea communication via UQC 27 KHz digital Newtcom acoustic underwater telephone. Inter-hull communication via VOX controlled headsets and microphones.

MV Alucia Plans and Profiles

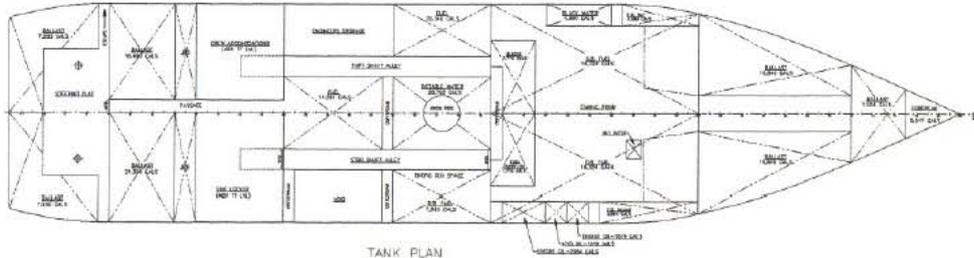




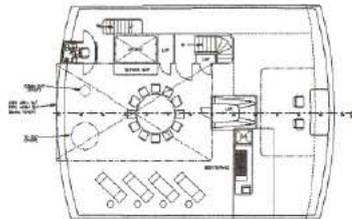
MN DECK PLAN



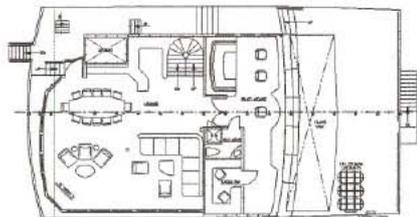
HOLD PLAN



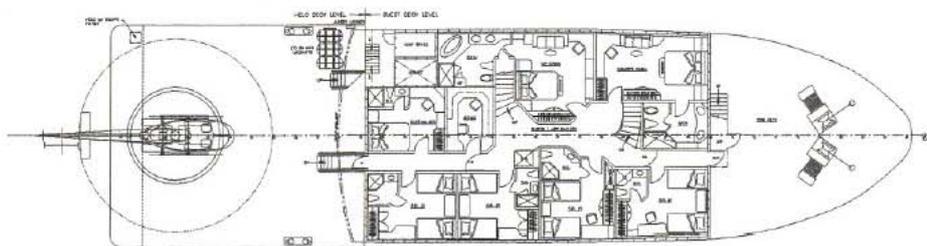
TANK PLAN



FLYBRIDGE DECK



BRIDGE DECK



HELO / 03 DECK