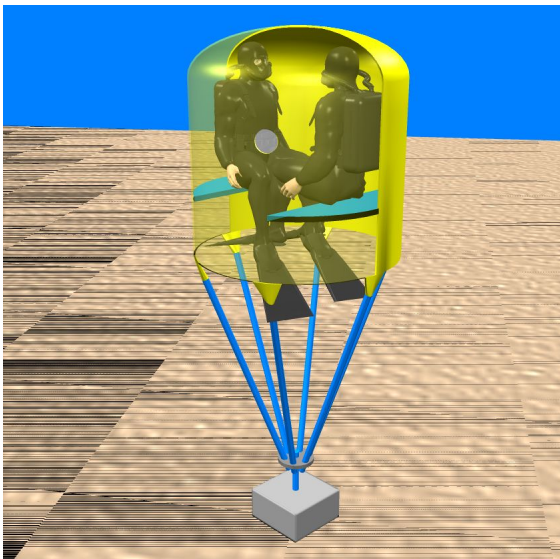
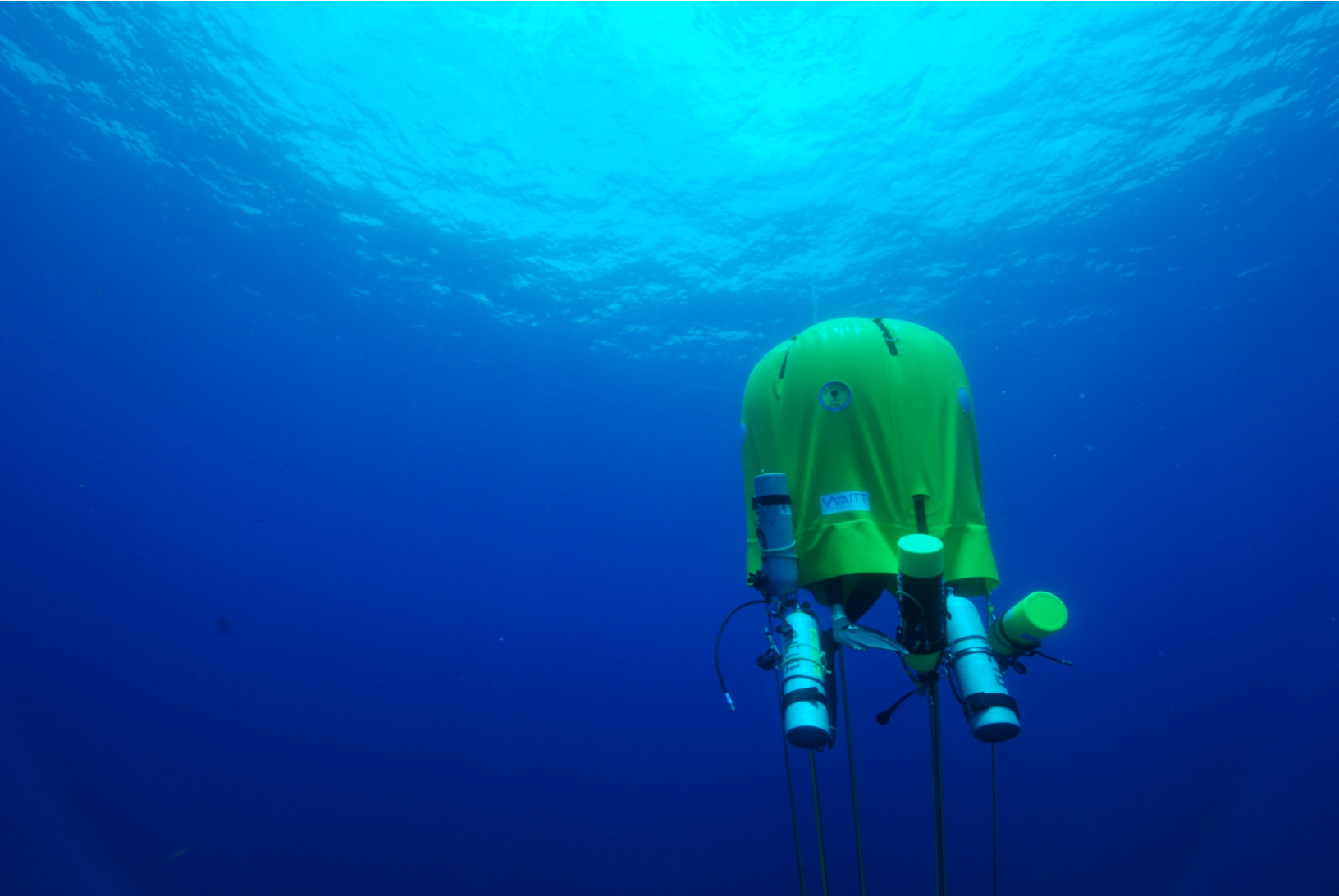


extending the range of human intervention

Ocean Space Habitat



Ocean Space HabitatSM is a portable inflatable dwelling which establishes a dry space within the undersea environment.

- spend lengthy decompression at rest
- conduct science and other work tasks
- treat emergent DCS in remote locations
- stow munitions or tactical equipment
- underwater camping/near-sat excursions
- a newly immersive underwater experience

US Patent #US 10,155,573 B2

Ocean Space Habitat

Intellectual Property

- Burlison, WS, and Lombardi, MR. Portable Inflatable Habitat With Modular Payload, System and Method. US Patent #US 10,155,573 B2. Issued December 18, 2018.
- Ocean Space Habitat, servicemark filed with USPTO Class Code 042.

White Papers

- Lombardi, MR., Burlison, W., Godfrey, J., and Fryburg, R. (2013). An Experimental Deployment of a Portable Inflatable Habitat in Open Water to Augment Lengthy In-Water Decompression by Scientific Divers. Marine Technology Society Journal: Diving Technologies & Techniques for the 21st Century. Volume 47, Number 6. November/December 2013. Pp 52-63.
- Piispanen, RA., Lombardi, MR., and Burlison, W. (2016). Variable Depth Capability for Portable Inflatable Habitats. In Lobel, LK., & Lombardi, MR. (editors) (2016) Diving for Science 2016: Proceedings of the AAUS 35th Scientific Symposium, September 20-14, 2016, Narragansett, RI. Dauphin Island, AL: American Academy of Underwater Sciences. ISBN 978-0-9962343-1-3. Pp. 144-150.
- Lombardi, MR. (2015) Micro- and mini- habitats for enhanced efficacy of underwater sample acquisition and processing. International Conference for Undersea Science, Technology, and Education (ICUSTE) 2015. City University of Hong Kong.



UNDERWATER LIFT BAGS
ENGINEERED FROM THE BOTTOM UP!



Features & Specifications

General

- Ambient pressure dry space, open to external environment
- Weight 50-200+ pounds based on configuration
- Capable of transport and deployment/recovery by hand/human means

Flexible/Collapsible Envelope (can be scaled to mission requirements)

- Fabric embedded vinyl with nylon/polyester support strapping and stainless steel hardware
- Gas dump from interior or exterior
- Low positioned anchoring points
- Interior fixation points for support equipment

Structural Framing/Chassis

- Inflates to pre-determined envelope design, no need for rigid structural support
- Optional benches, hammocks, stowage areas

Modular Payload Life Support System

- Diluent manifold allowing envelope inflation or ventilation from offboard displacement gas
- Open-circuit displacement gas accessibility for occupant bailout
- 12 vdc rechargeable battery for circulating fan with optional power to auxiliary items
- Digital pO2 oxygen monitoring display with two galvanic oxygen sensors
- Lung powered scrubber circulation via emergency half mask
- Automatic gas addition and exhaust for depth compensation during transport

Life Support Capacity (can be scaled to mission requirements)

- CO2 scrubber
 - 3.6L volume/8lbs, axial design for granular softlime/sodasorb
 - ~400 minutes at 33fsw based on 1.35 SLPM CO2 production at 40F
- oxygen supply
 - sized to match assumed metabolic consumption of 1.35 SLPM
 - 19 cubic foot cylinder
 - introduced with occupant adjustable needle valve
- Extrapolated at 1.0 SLPM at 33fsw at 40 F
 - 8 hours for single occupant
 - 4 hours for two occupants

Bridle or Scaffolding System

- User selected bridle or scaffolding support
- May contain hardware for variable depth control

Anchoring Mechanism

- User selected anchors based on substrate encountered (recommended 4:1 over buoyant force of OSH)
- Several options have been evaluated including helical earth anchors, duckbill anchors, epoxied pins, inverted scaffolding, etc.

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