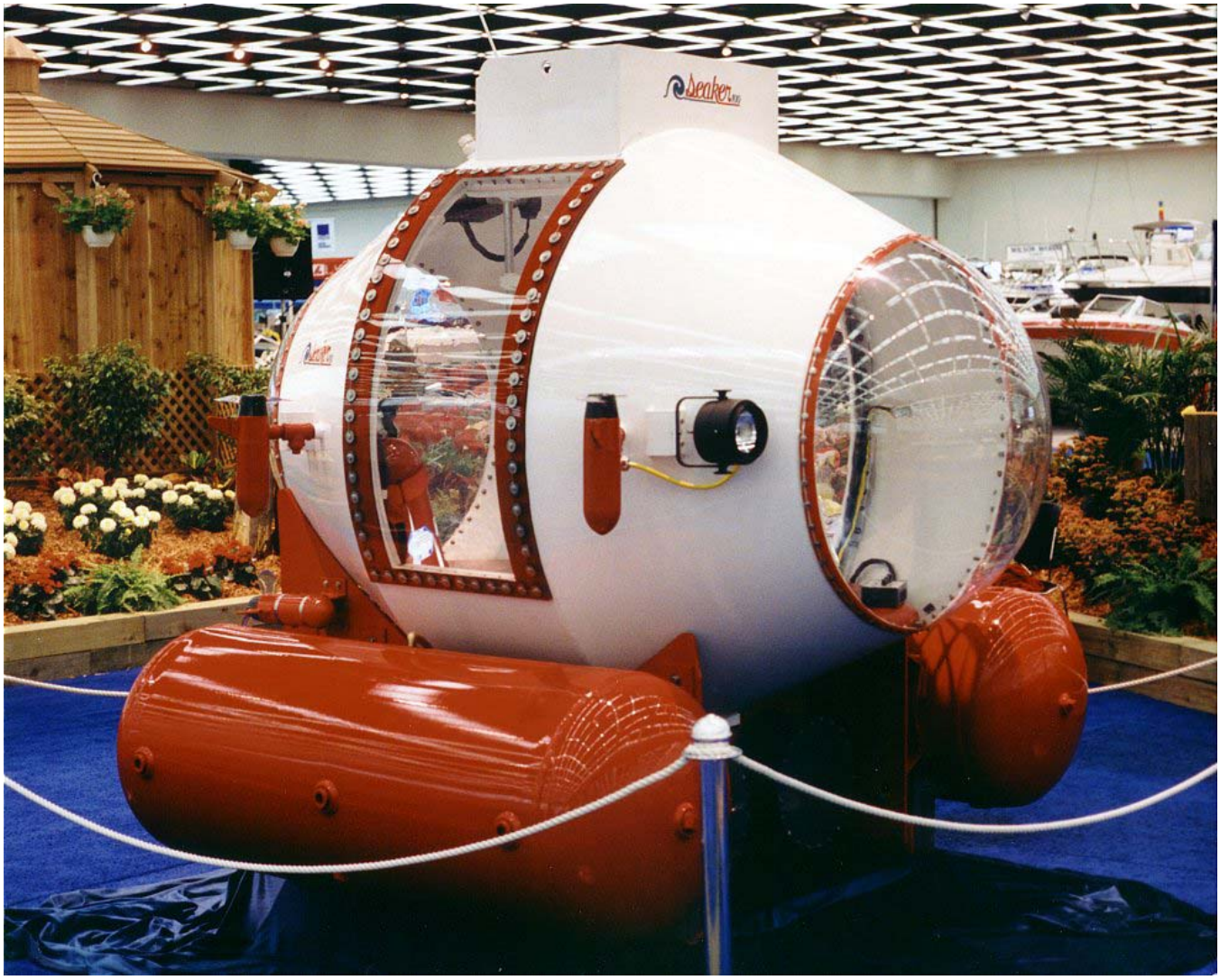
Seaker 100 Submersible

As displayed at a local boat show circa April 1990



Seaker 100 Product Brochure

(Front)

Seaker 100 Product Brochure

(Back)

MECHANICAL SPECIFICATIONS

Length	8 ft.	Life Support System	116 man hrs.
Beam	8 ft.	Power	
Height	7 ft.	Main	525 AH
Draft	3 ft.	Emergency	105 AH
Freeboard	4 ft.	Total Power	630 AH
Weight	6,700 lbs.	Speed—Maximum	5 MPH
Operating Depth	100 ft. max.	Passengers	1-3
Hatch	24" x 21"	Viewing Area	40 sq.ft.
Payload	1,000 lbs.		

Pressure Hull: 8 ft. long/5 ft. diameter reinforced steel and polycarbonate hull.

Power Source: Main: Gell-cell sealed batteries located external to hull in inert pressure resistant modules 525 AH total. Emergency: Gell-cell sealed battery located external to hull in inert pressure resistant module 105 AH total. Minimal charge time of 6 hours required.

Maneuvering Control: Dynamic: PWM controlled variable thrusters.
Static: Automated buoyancy control of variable ballast tanks (80 cu. ft.) with manual override.

Life Support: Automated environment control system governs O_2, CO_2, humidity, temperature and pressure of the one atmosphere dry cabin.

Viewing: 40 sq. ft. of polycarbonate window area provides panoramic viewing in all directions with controllable external lighting.

Surface Communications: Two-way radio operated off main or emergency power.

Subsurface Communications: Two-way SSB radio operated off main or emergency power.

Jettisonable Components: Mechanically releasable 1,000 lb. lead ballast and breakaway manipulator.

Manipulators: Optional forward mounted jettisonable multi-axis gripper.

SEAKER 100

THE ULTIMATE UNDERWATER EXPERIENCE

HERE'S HOW YOU CAN OWN ONE . . .

For more information, including how to order your Seaker 100, contact:

HARDWICKE & HANSEN OCEANIC INC H_2O SUBMERSIBLES

CARL HARDWICKE OR GREG HANSEN
12504 Stephens
Warren, MI 48089
(313) 755-0323

1. Specifications and standard features are based on information available at the time of printing and are subject to change without notice.

Seaker 100 Product Brochure

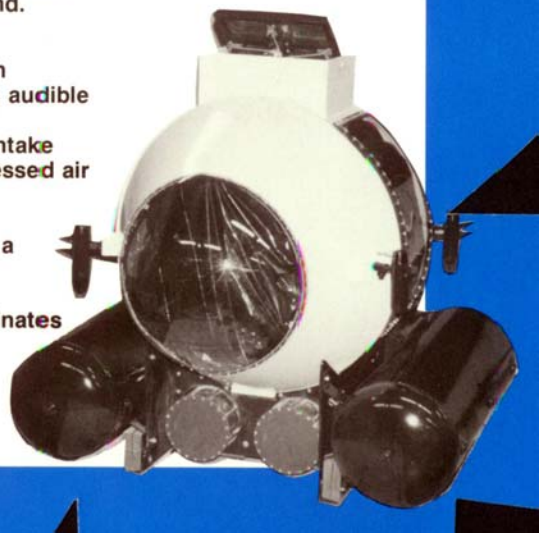
(Inside)

SAFETY FEATURES PUT SEAKER 100 IN A LEAGUE ALL ITS OWN...

The Seaker 100 has an impressive list of safety features which incorporate state-of-the-art technology. Thousands of research hours along with the consultation of other leading authorities in submersibles (ie: U.S. Navy, U.S. Coast Guard and American Bureau of Shipping) has resulted in the safety development of the Seaker 100. It's this kind of engineering design that combines underwater excitement with peace of mind.

Your Seaker 100 comes standard with these safety features:

- 4 levels of ascent control
  - — Electric motor surfacing capability
  - — Blow ballast tanks, electrically or manually
  - — Jettison lead ballast
  - — Hull flood with multiple egress routes
- Two way sub-to-base radio communication
- High frequency pinger locator
- Underwater locator beacon
- Emergency battery power— 56 hours
- Automatic depth limiter at 100 feet
- Automatic leak detection system
- Life support monitoring system, audible and visual
  - — Oxygen
  - — Battery
  - — Carbon dioxide
  - — Water intake
  - — Compressed air
- Bilge pump
- A fully padded floor doubles as a flotation device
- Manual override of all systems
- One atmosphere dry cabin eliminates need for decompression
- Operator training provided

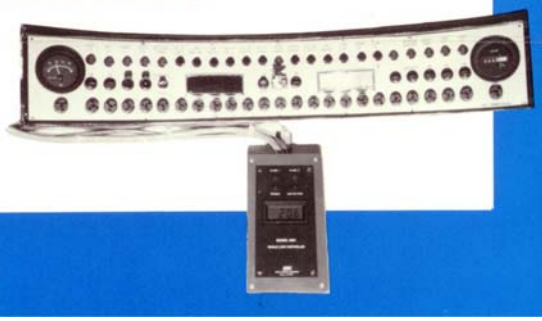


SEAKER 100 PERFORMS AS WELL AS IT LOOKS...

Panoramic viewing and simple operation allow you to explore a whole new frontier. With the integration of CAD / CAE structural analysis into the design and development of the reinforced steel and polycarbonate hull, you can see why Seaker 100 will lead you into a new generation of underwater adventure.

Specific performance features include:

- Exceptional visibility
- Unlimited maneuverability
- Hovering capability
- Simple, hand held multi-directional controls
- 5 MPH speed
- Positively buoyant
- Halogen floodlamps
- 4 foot freeboard
- 3 foot draft
- Easy launch and retrieval
- Easily trailerable
- 10 hour average dive time
- Optional manipulator



Accident Facts

- Hemispherical domes were ¼ inch in thickness and used temporarily for marketing purposes until the real domes were delivered.
- Side panels were ½ inch Lexan.
- A number of low-depth manned tests were performed without incident.
- Accident occurred at about 40 feet of depth.
- The domes inverted, but did not shatter.
- Flooding occurred from area of the bolts attaching one of the hemispherical domes.

Reaction and Recovery

- Survivor has no recollection of the failure, flooding, or escape. He simply “appeared” at the surface and was pulled into a boat that was observing the dive.
- Survivor suffered severe lacerations to head and was airlifted to hospital where he recovered from his injuries.
- Victim suffered fatal injuries and died immediately. Drowning was ruled out as cause of death.

Analysis

- Shallow structural failures can be fatal.
- Cause of death may not be due to drowning.
- Disorientation due to flooding and pressure may impede escape.
- Pressure testing of submersible with temporary components is not acceptable.
- Unmanned testing of submersible is required until all components meet requirements at design depth.