

SeaSpider Deep Mining Platform

Manufacturer: GaltCo
Displacement: 400 tons
Engines: Two Rolls Royce P-23 MHD Turbines
Top Speed: 12 km/hour
Weapons: None
Sensors: Avscombe "Cyclops" sonar array, Brindle-Arruda SR-550 surface radar, Korotsov M-2 acoustic mapper
Support Craft: Two Galtco DSD-12 remotely piloted vehicles
Maximum Dive Depth: 4000 m
Endurance: Four weeks. Unlimited with regular resupply.
Crew: 26

Captain
First Officer
Communications Officer
Engineering Officer
Survey Officer
Medical Officer
8 Engineering Crew
12 Operations Crew

Overview

The SeaSpider series is a long duration submersible support platform for underwater mining operations. It provides maintenance to robotic mining submarines mucking alluvial deposits and serves as a workstation for hardsuit miners exploiting in situ hard rock veins. Over 14 SeaSpiders are currently in service around the world.

SeaSpiders are usually deployed by tug, after which they rely on their own engines to cover their assigned mining site. When tending a "web" of alluvial miners they work closely with the crews of the surface fleet to coordinate repairs and routine maintenance of the drones. For small scale hard rock operations they operate independently, but groups of two to four platforms may be on station at large deposits. Resupply operations from surface ships, zeppelins, or cargo subs are usually scheduled every three to four weeks.

The main hull, internal bulkheads, and external bouyancy tanks are constructed of diamond coated marine steel reinforced with carbon/carbon support struts. Internal partitions are made of formed fiberglass. Engineering ratings for components are as follows:

Component	Rating
Main Hull and Bulkheads	SP 150
External Tanks	SP 140
Internal Partitions	SP 30
Main Bay Doors	SP 120
Main Airlock Doors	SP 120
Internal Hatchways	SP 60
Access Doors	SP 75

Service Record

Twelve SeaSpiders have been built to date and 2 more are under construction at the GaltCo shipyards at Guantanamo. GaltCo retains ownership of the majority of the platforms, but DSP-103, DSP-108, and DSP-109 were bought by Titan Sea Resources as adjuncts to their surface mining fleet, while DSP-112 EX was sold to The Adleman Institute. The industry has been rife with speculation that the two platforms currently under construction will be the last of the series, pending production of the SeaSpider II model in development.

There have been a number of engineering revisions and variant production models. The revision one rebuild modified the life support system to increase endurance and corrected problems with the deployment mechanism for the surface sensor tower. Revision two updated electronics and installed a semi-autonomous control system. Revision three modified the main repair bay to serve as a dedicated hardsuit storage area for large scale hard rock mining operations. The EX extended endurance variant increased fuel tankage and stretched the hull 15 meters to provide more crew facilities and storage space for extended duty.

Name	Registration	Status	Location
SeaSpider 1	DSP-100	Active, R2	Central Pacific
		Support	for nodule mining.
SeaSpider 2	DSP-101	Active, R2	South Atlantic
			Diamond mining.
Orb Weaver	DSP-102	Active, R3	Eastern Pacific
		Support	for alluvial gold mining.
Wolf Spider	DSP-103	Active, R1	Arctic Ocean
		Salvage	operations.
Black Widow	DSP-104	LAS	Central Pacific
		Lost to sabotage.	Unrecoverable.
Fiddler	DSP-105	Active, R2	South Atlantic
		Support	for alluvial titanium mining.

Tarantula DSP-106 Inactive, R2
 Guantanamo Bay Undergoing R3
 refit.

Camelback DSP-107 Active, R1
 Central Pacific Support for nodule
 mining.

Arachne DSP-108 Active, R2
 Southern Atlantic Support
 for alluvial gold mining.

Ariane DSP-109 Active, R3
 Southern Pacific Support
 for hot brine mining.

Web Spinner DSP-110 Active, R2
 Central Pacific Support for nodule
 mining.

Web Caster DSP-111 Active, R2
 Central Pacific Support for nodule
 mining.

Scorpion DSP-112 EX Active, R2

Contract 113 DSP-113 Dry-dock
 Guantanamo Bay Under
 construction.

Contract 114 DSP-114 Dry-dock
 Guantanamo Bay Under
 construction.

SeaSpider Deep Mining Platform Level One- Engineering

1. Main Service Bay- This large open area is capable of holding two robotic mining submarines simultaneously. Subs enter the bay through the gigantic hull doors and settle into service cradles that unfold from storage compartments in the floor. The bay measures 28 by 23 meters and has 7.5 meters of headroom.

Scattered across the floor and walls are equipment panels that give technicians access to power and computer leads. A crane is mounted on the roof and is capable of moving weights up to 4 tons anywhere within the bay. The access doors opposite the bay doors have a standard airlock panel.

2. Engineering Area- Workstations fill this area and the wall mounted equipment bays are filled with tools and testing equipment for maintaining subs, hardsuits, and the platform itself. Parts that can't be replaced from storage can be fabricated in a small industrial autofac located next to the elevator. Moving cargo between here and the service bay is done with a rugged little electric hauler parked in the corner. A small lift in the roof is designed to hold

hardsuits for servicing and can carry them from inside the airlock to the hardsuit storage bay.

3. Main Airlock- Imposing steel doors lead into an airlock big enough to handle three hardsuited workers at a time. The oversized controls are designed for use by the hardsuit workers and require some effort to be used by a normal person. Beyond the outer doors is an open elevator platform that travels from the top of the SeaSpider to 5 meters below the bottom hull. When the ship isn't anchored the elevator platform is used by the hardsuit workers to reach the sea floor.

East Hard Suit Storage Bay- Deep Mining Survey.

hardsuit cradles line the walls of this room. The cradles are used to store the suits and come equipped with diagnostic interfaces for routine testing before a dive. Each cradle is equipped with a thumbprint lock that only opens for the pilot of the hardsuit it contains, the chief engineer, and the command crew. Command personnel can change the authorization for the locks from the main bridge or the computer console in Engineering. Racks to the side of each cradle hold heavy equipment like drills and welding packs used by the hardsuits.

5. Engineering Stores- This cramped room is filled with storage containers holding parts for subs and hardsuits. One wall is a rack holding hull patches, piping, wire spools, and coils of fiber optic cable. Nearly any part the technicians would need for a repair can be found here.

6. Engine Room- Most of the space in these rooms is taken up by massive turbines. They provide electrical power for the platform and drive the thrusters when their drive shafts are engaged. Unless the platform is underway the engines operate on a 1 day on/ 1 day off rotation. A one month supply of fuel is stored in four individually sealed tanks nestled under the main hull.

SeaSpider Deep Mining Platform Level Two- Stores and Life Support

1. Main Service Bay- The upper part of the bay takes up this area. There are no

access points leading directly to the bay.

2. Geology Lab- This rather cramped room contains two workstations for testing mining samples. A high-power optical microscope and magnetic resonance scanner occupy one, while the other is for chemical analysis. The remainder of the equipment area is taken up by sealed storage cabinets for the samples. An emergency access hatch is located overhead.

3. Electrical- This room holds the core of the platform's electrical system. Access panels and switching boxes cover what little space isn't taken up by a heavily shielded superconducting ring power module. If both engines are disabled there's enough power here to keep the platform running at full power for 48 hours. The high-pitched whine of the module's power storage ring is audible even through the thick protective baffles and is extremely annoying to anyone not wearing hearing protection. An emergency access hatch is located overhead.

4. Computer and Communications- The station mainframe and control equipment for the internal communications network fill most of the available space. A small power cell hidden in the floor provides backup power in case of catastrophic failure. Thumbprint locks are on each access panel.

5. Life Support- The massive recycling systems for the air and water supply gurgle away in the middle of the tanks, conduits, and piping that fills the room. This is the heart of the life support system and contains all the machinery that keeps the crew alive while the platform is at sea. It's a rather unpleasant place thanks to the noise, smell, and temperature variations, but it's the best maintained area on the ship. That's not surprising when you consider that a failure here would kill everyone on board in short order.

6. Stores- These rooms are filled with cargo crates holding supplies for the platform, everything from food to drill bits and toilet paper. Interface terminals just inside the doors allow access to the inventory list in the main computer.

7. Freezer- One of the few benefits of ocean service is that the food is traditionally used as a morale tool by the company. The freezer is filled with racks of pre-packaged meals, meat products, and almost real vegetables for use in the cafeteria. The temperature is set right at the freezing point.

SeaSpider Deep Mining Platform Level Three- Living Area

1. Captain's Quarters- The captain gets the comparative luxury of a small suite furnished with a bed, desk, wall cabinets, and computer terminal. A small meeting room serves as a foyer.

2. First Officer's Quarters- Not nearly as nice as what the captain has, but not as bad as the double bunks the workers are stuck with. Contains a bed, terminal, and lockers.

3. Main Bridge- The room is dominated by the holographic display table in the center. Surrounding it are the workstations used by the command crew to manage every aspect of the platform's operation. Monitors at the workstations can display communications, internal systems, sensor data, video from internal and external cameras, and remote telemetry. With the proper access codes it's possible for a single operator to run the entire platform, but in practice two officers are usually on duty. One workstation is configured for interface control of remotely piloted vehicles.

4. Officer's Lounge- One of the perks of command is that you get a little more room to relax. The officer's lounge is furnished with a couch, table and chairs, entertainment console, and a kitchenette. The other leg of the room is taken up by a private fresher with toilet and shower.

5. Armory- This secure room contains a selection of weapons for on-board security and a safe holding explosive charges for mining and seismic surveys. The door can only be opened with an authorized thumb and voice print.

6. Common Area- Exercise equipment, a sun bed, and entertainment consoles make this the place for crewmembers to relax off-shift. While the room is relatively large it still gets crowded right after

meal times as the entire shift heads in to blow off some steam.

7. Dining Area- Most of the room here is taken up by tables and chairs. In practice it serves as a dining area and lounge for crewmembers looking for a more relaxed environment than the common area.

8. Cafeteria- One corner of the room is dominated by a large freezer filled with pre-packaged meals and the makings of the dinners produced by crew assigned to kitchen duty. The working area has a large industrial sink, microwave oven, convection oven, cooktop, and a wet bar area with assorted beverages on tap. Cabinets above the counter top are filled with snacks, coffee, drink mixes, and condiments.

9. Medical- A large autodoc shares space with a workstation equipped with a medical expert system and a variety of diagnostic equipment. Cabinets filled with basic medical supplies line the wall. One cabinet is equipped with a thumbprint lock and internal refrigerator unit for storing drugs.

10. Accessway- These small rooms have overhead hatches leading to the upper deck of the SeaSpider and floor hatches leading down to level two. Large lockers hold cold weather clothing, rescue equipment, and emergency gear.

11. Laundry- Most of the space in here is taken up by an industrial washer and dryer and a storage unit containing cleaning supplies. Baskets filled with clean and dirty clothing rest on top of the laundry machines.

12. Officers Quarters- These rooms are a little more spacious than the normal crew quarters, but not by much. The double bunk units feature an entertainment and communications console for each person. Storage lockers for personnel effects are built into the wall.

13. Crew Showers/Bathroom- Two cramped shower stalls occupy half of the room. Twin urinals and a toilet round out the furnishings.

The remaining rooms on this level are crew quarters. Each room has a standard double bunk and storage lockers for personell effects.





