



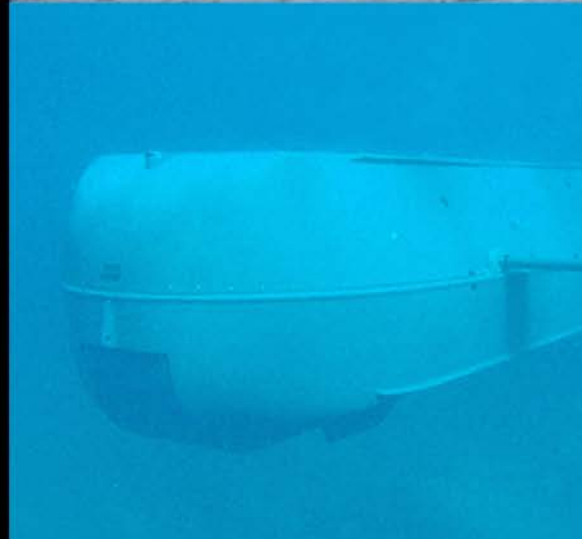
SUB BOATS



SOF USERS OF STIDD SUB BOATS

Catalog 16 .1

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MRCC

MULTI-ROLE COMBATANT CRAFT

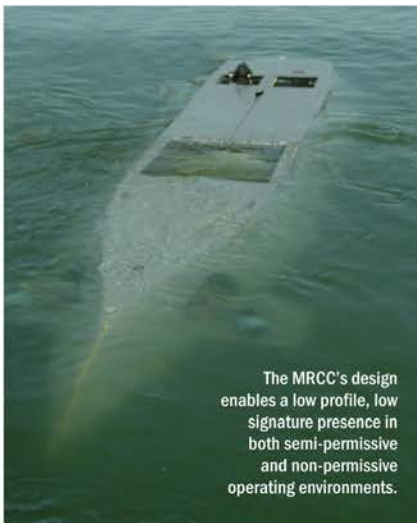
The STIDD 32.5 ft. (10m) MRCC is an innovative, medium-sized, rigid hull, multi-purpose, maritime platform that offers the versatility of a fast surface boat, reduced semi-submerged observability, and submerged propulsion all in one proven, reliable package.

- Buoyancy Control System (BCS) allows the MRCC to sink, become neutral or re-surface.
- MRCC carries 2 crew and up to 7 passengers and significant additional payload.



- MRCC powered on the surface and semi-submerged by a turbo-diesel waterjet propulsion package in a pressure proof "Engine-Room-in-a-Can" container, resulting in long range and reduced acoustic and thermal observability.

- Submerged propulsion by battery-powered high efficiency electric thrusters. Batteries capable of re-charging at sea when surfaced.
- Hardpoints accommodate multiple weapon systems.
- Available integrated electronics include; Doppler Velocity Log (DVL), Navigation Obstacle Avoidance Sonar, Multi-Function Flat Screen Displays, System Monitoring & Control and Surface/Submerged Communication Systems.



The MRCC's design enables a low profile, low signature presence in both semi-permissive and non-permissive operating environments.



The MRCC is the only submersible that allows divers and equipment to travel on the surface over long distances to the point of submerging, minimizing divers immersion time in water.



ELECTRONIC ANTENNA MAST

Enables both Surface Navigation and Communications. Antenna automatically lowers to stowed position when required.



Deployed



Motorized Positioning



Stowed

MARITIME APPLICATION OF MRCC CAPABILITIES

- Underwater reconnaissance
- Littoral combat
- Insertion and extraction
- Non-combatant evacuation operations
- Maritime interdiction operations
- Intelligence collection
- Visit, board, search and seizure
- Harbor penetration
- Low profile exfil/extraction of non-swimmer
- Ship attack, tagging, tracking, locating
- Sensor emplacement and monitoring
- Submerged cache for extended operations ashore

KEY CAPABILITIES

- Multi-dimensional maritime asset
Surface, semi-submerged & submerged, (minimum wet time) modes
- Flexibility in launch / host options
Multiple ship types, air, land & airdrop
- Standard advanced navigation and communications
- Reduced signature
- Operationally responsive
- Combat Swimmers as crew & operators
(with approximately 2 weeks of training.) Does not require SDV/SWCC qualified crew
- Cache on bottom up to three days
- Offensive/defensive armament
- Maintainability
"Engine Room in a Can" technology

→ multi-role combatant craft

MRCC SPECIFICATIONS & FEATURES

OPERATIONAL MODES:

- Surface:** Craft operates in typical surface planing mode with diesel/waterjet propulsion
- Semi-Submerged:** Craft operates partially submerged (bow-forward), using surface propulsion with reduced freeboard [18 inches (46cm) dependent upon sea state]
Only visible structure is topskin
- Submerged:** Craft submerges and operates underwater using electric propulsion
- Cache:** Craft sinks to the bottom. Pax and crew egress craft, anchor to bottom, and depart area

PERFORMANCE:

Contact sales@stidd.com for detailed specifications.

PERSONNEL CAPACITY:

- Typical Personnel Configuration
- Two (2) Crew and four (4) UBA equipped passengers (6 total)
- Alternate Personnel Configuration
- Two (2) Crew and up to seven (7) UBA equipped passengers (9 total)



MRCC Surface Console



MRCC Submerged Console

DIMENSIONS

Length:	32ft. 6in.	(9.91m)
Beam:	7ft. 7in.	(2.34m)
Draft:	Surface Mode:	1ft. 9in. (0.53m)
	Semi-Submerged:	3ft. 0in. (0.91m)
Height:	5ft. 6in.	(1.68m)
Fuel:	130 U.S. Gallons	(492 Liters)
	Auxiliary tankage may be carried as payload	

Specifications are for reference only.
Contact sales@stidd.com for the most up-to-date performance characteristics



MRCC in underwater concealment mode launching up to 2 DPDs.



All MRCC submerged control panels features easy-to-read / easy-to-operate controls and gauges for both pilot and navigator.

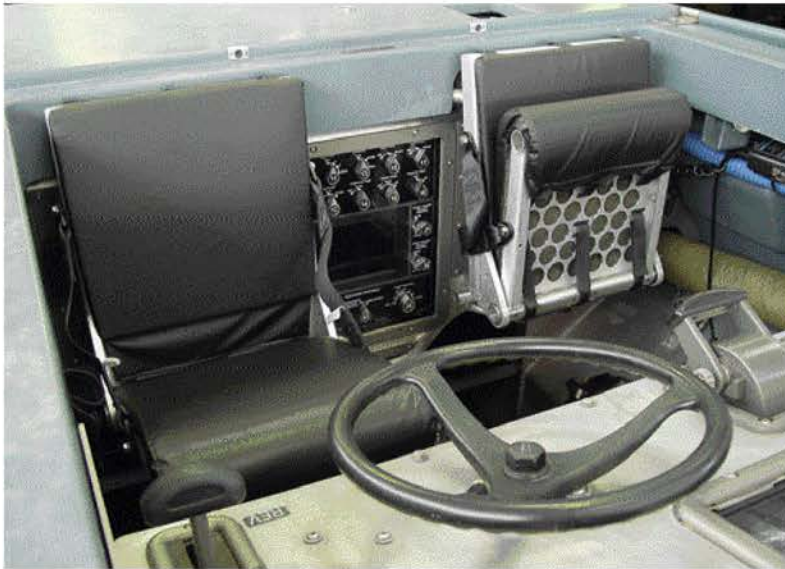
MRCC

→ multi-role combatant craft

NEW!

MRCC CREW & PAX MODULAR ERGONOMIC SEATING

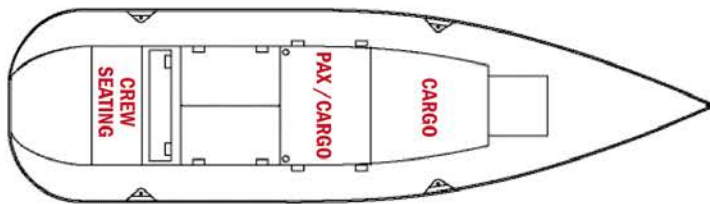
MRCC now offers operators Modular Ergonomic Seating options for additional comfort and stability during long, open water transits



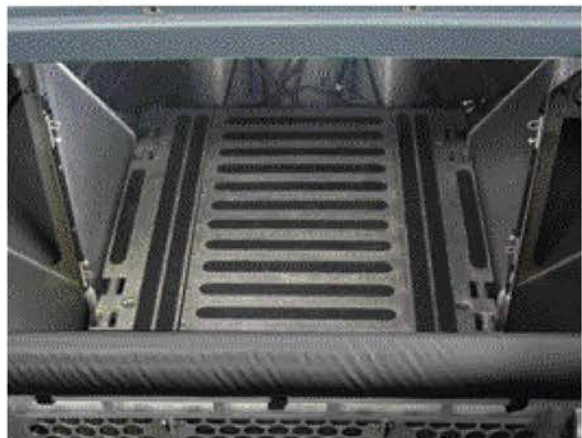
Crew Seats (Shown deployed and stowed)



PAX Seating



- Both Crew and PAX Seats quickly convert to stand up bolsters and are easily stowed for submerged operations
- Modular in design, seating can be configured for any mission profile; if more Cargo area is needed one or both rows of PAX seating can be removed
- Manufactured with Hardcoat Anodized Aluminum and Hi-Tenacity Polyester
- The Main Cargo area is equipped with universal mounting points that interface with Cargo accessories to include: DPD Cradle, Auxiliary Fuel Bladder, Auxiliary Air Tanks.



Main Cargo Area

SUBMERGED ELECTRIC PROPULSION

- Main-engine driven generator capable of recharging standard batteries while on the surface at sea.
- Standard Battery System available in various chemistries, with high efficiency electric thrusters for fully submerged operation.
- With Submerged Electric Propulsion, MRCC transitions from surface to semi-submerged to submerged modes. Once submerged, MRCC can operate as a wet submersible or descend to the bottom for use in underwater concealment mode.
- **MRCC is an ITAR controlled item.**
US Department of State DTC license is required for export.



SPECIFICATIONS & FEATURES

PROPULSION

Surface / Semi Submerged Mode:

Single Turbo-diesel with Waterjet

Submerged Mode: Brushless DC Electric Thrusters

Propulsion Battery: Lithium-Ion

Propulsion Battery Charging :

At Sea Diesel engine driven charger,
100% SOC in 5-6 hours, 50% SOC in 2-3 hours
Shore Power Shore powered charger,
100% SOC in 5-6 hours, 50% SOC in 2-3 hours

TRANSPORT

- 8 ft. wide by 40 ft. long ISO Flat Rack or Top Loading Shipping Container
- Aircraft (C-130)
- Multi-axle boat trailer

LAUNCH & RECOVERY

- Multi-axle boat trailer
- Airdrop (pending approval)
- Helo External Air Transport

OBSERVABILITY

Surface: Low acoustic, magnetic, visual, and radar signatures

Submerged: No visual or radar signatures.
Acoustics T/B/D

SYSTEMS

Construction: Aluminum hull and foam core fiberglass topskin

Electrical System:

- 24VDC ship service electrical system
- Complies with ABYC standards or acceptable marine practice

Mechanical Systems:

- Complies with ABYC standards or acceptable marine practice

Weapons:

- Fore and Aft hard points for Mk16 gun mounts

Seating

- Removable Bolster Bars (2) in Pax areas (1) in Crew area

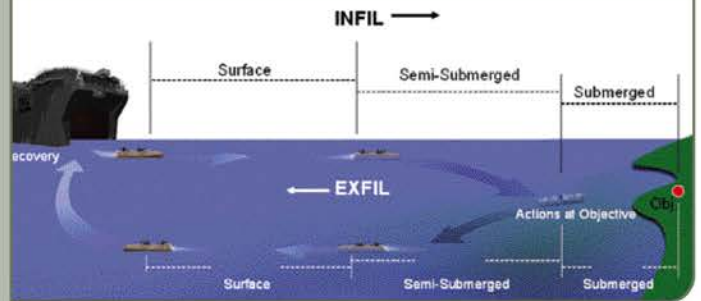
OPERATIONAL ENVIRONMENTS

- Surface:**
- Beaufort Sea State Scale 4 - Full mission profile operations
 - Beaufort Sea State Scale 5 - Reduced speed mission profile operations
 - Beaufort Sea State Scale 6 - Steerable / survivable
 - Operational Temperature (air)
20° F to 120° F (-6° C to 48° C)
 - Operational Temperature (water)
35° F to 95° F (2° C to 35° C)

- Submerged:**
- Maximum Operating Depth: 66ft. (20m)
 - Test Depth: 99ft. (30m [~ 45psi])
 - Crush Depth: 150ft. (45m [~ 66 psi])
 - Normal Cache Time: 3 days

Notional Mission Profile 50 NM Radius (Nominal)

50 nm transit, in one period of darkness (8-12 hours) – as few as 2 hours with operators fully wet.



With Submerged Electric Propulsion, MRCC transitions from surface to semi-submerged to submerged modes. Once submerged, MRCC can operate as a wet submersible or descend to the bottom for use in an underwater concealment mode. (Cache)



Use of the Diver Propulsion Device (DPD) in conjunction with MRCC, will increase MRCC submerged range up to an additional 28 nm (51.8 km)



MRCC in Cache Mode

* Specifications are for reference only. Contact sales@stidd.com for the most up-to-date performance characteristics

CACHE BOAT **NEW!** IS THE NON-SUBMERGED PROPULSION VARIANT

of the **PROVEN** Multi-Role Combatant Craft (MRCC)

Cache Boat is an 8-man, 32.5 ft (9.9 m) LOA, rigid hull bottom-cacheable surface boat with over 5,000 lbs (2268 kg) of available payload, offering maritime SOF the versatility of fast Surface speed (40 kts), low observable Semi-submersible transit (5.5 kts), a 210 nm (389 km) range, and extended Cache bottom concealment (72+ hrs) in one proven, economical package.

CACHE Boat is a Surface Warfare Craft, NOT a Submersible!

- NO submerged propulsion system
- NO underwater navigation system or sonar
- NO SDV experience required
- Surface C4I and Surface navigation systems
- NO rebreathers required
- NO combat divers required
- **BOTTOMED & RECOVERED** easily by 2 Surface Warfare personnel in shallow water with diving masks and snorkels or pony bottles.

SPEED RANGE & PAYLOAD

Operating Mode	Displacement (lbs)	Max Speed (kts)	Cruise Speed (kts)	Range (nm)
Surface: 2 operators + 60% fuel	8,400 lbs.	40 kts	33 kts	200 nm
Surface: max displacement	12,200 lbs.	30 kts	25 kts	175 nm
Semi-Submerged 30" freeboard	38,000 lbs. <small>includes entrained water</small>	5.5 kts	5.5 kts	440 nm

Attention Contracting Officers

- All MRCC (Multi-Role Combatant Craft) items are on GSA Contract No. GS-07F-0101K www.gsaadvantage.gov
- MRCC (Multi-Role Intermediate Support Craft) and DPD (Diver Propulsion Device) are ITAR controlled items. US Department of State DTC license is required for export.
- STIDD Systems is a Small Business Entity. PATENTED: U.S. Patent No. 5,377,613 (Re 36,093) & 5,632,659 Other U.S. and International Patents and Trademarks Pending

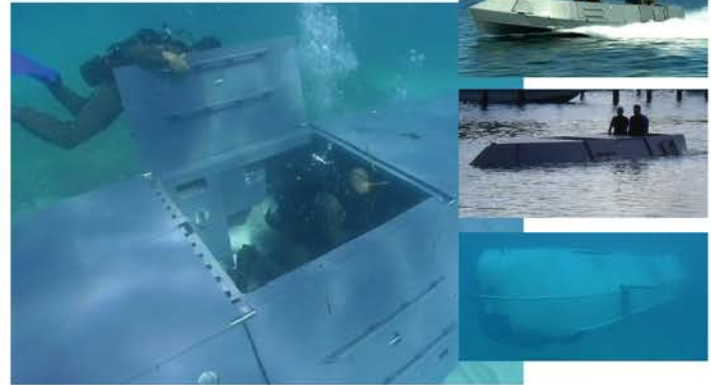


ORDER ONLINE THRU **GSA ADVANTAGE!**[™]

www.gsaadvantage.gov

GSA CONTRACT No: **GS-07F-0101K**

STIDD Systems is a Small Business Entity



CACHE BOAT PERFORMANCE CHARACTERISTICS

Length: 32' 6" (9.91m) **Beam:** 7' 7" (2.34 m)

Light Ship: 7,300 lbs (3,341 kg)

Useful Payload: 4,900 lbs (2132 kg)

Surface Max Speed: 40 kts (74 km/h)

Surface Range: 200 nm (370 km)

Semi-Submerged Speed: 5.5 kts (10.2 km/h)

Semi-submerged Range: 440 nm (815 km)

Cache depth: 66 ft (20 m)

Cache duration: 72+ hrs; limited by marine growth

Transition Time: 1-2 minutes

Propulsion: 435hp Turbo diesel / Water jet

Transport: Land; sealift; Air drop by C130, C17, helo

Construction: Aluminum hull & Composite topskin

Once submerged Cache Boat can loiter hovering below the surface or settle to the bottom for underwater concealment

CACHE Boat Systems include:

- **Fine Ballast Trim System**
Enables easy adjustment of buoyancy and trim angle for controlled bottoming
- **Auxiliary Electrical System**
Upgrade replaces Propulsion batteries.
- **Vessel Anchoring System** for various bottom types
- **Basic Subsurface Instrumentation package**
Depth from surface, depth to bottom, compass heading, and Cache timer in pressure proof container
- **Seabed Camouflage Netting** and
- **Acoustical Locator Beacon** with receiver

CURRENTLY IN PRODUCTION (COTS)



MRCC operates in surface planing mode with diesel/waterjet propulsion

7803-001-001 MULTI-ROLE COMBATANT CRAFT (MRCC) COMPLETE

Consists of:

- **7800-001-001
MRCC BASIC CRAFT**
Single Turbodiesel Waterjet Surface Propulsion in proprietary Pressure-proof Container, Open Ballast System, Hydraulic & HP Air Systems, Surface Navigation Panel, Closed Ballast System

- **7800-001-103
SUBMERGED PROPULSION SYSTEM**
Electric Thrusters, Multi-axis Control Surfaces Integrated into Modular Topskin Sections, Battery Rack Mounting System, Electrical System Monitor, Closed Ballast, Submerged Li-Ion Battery System, At-Sea Submerged Battery Recharging System & Shoreside Charger.

- **TECHNICAL O&M MANUAL & LIMITED WARRANTY**



STIDD DPD in reusable shipping container and MRCC shoaw loaded for long distance land transport complete with MRCC trailer and transportation cover.



STANDARD ACCESSORIES

NOW INCLUDED WITH MRCC

7800-001-007 CRADLE, DIVER PROPULSION DEVICE (DPD)

Modular DPD cradle mounts to brackets in the MRCC to provide safe stowage of DPD units during both submerged and surface transitions.

7800-001-008 WEAPON MOUNT HARD POINTS

Modular weapon mount hard point supports weapon operations. Mount accepts standard Crane interface. Forward and aft weapon positions included.

7800-001-009 (-1) MRCC TRAILER, INCLUDING TIE DOWNS

Trailer features custom aluminum bunk, triple axle design including spare tire, manual winch, swing-out tail gate, hydraulic surge brakes, submersible L.E.D. tail lights, and pintle ring.

7800-001-009	Non-Tilting
7800-001-009-1	Air Transportable

7800-001-010 SINGLE POINT LIFTING SLING

A certified single point sling assembly specifically designed to lift the MRCC at the required attitude. All required shackles to attach to the MRCC lifting points are included.

7800-001-014 AUXILIARY FUEL BLADDER SYSTEM

A bladder designed to fit in the MRCC cargo area which can carry an additional 40 gals (151 litres) of fuel for surface transit.

7800-001-011 SHIPBOARD CRADLE

The MRCC cradle can be used to secure the craft for shipboard stowage.

7800-001-012 ADJUSTABLE TRANSPORTATION COVER

A full cover designed for the MRCC for use during transport. Includes all required tie downs and adjustable lacing. .

MRCC SPARES & SUPPORT

7800-010-005 SPARE PARTS PROVISIONING

Includes recommended Lowest Replaceable Units (LRUs), consisting of complete pressure containers and parts to allow for minimum mean time to repair of select non functioning components by properly trained field technicians as well as an assortment of replaceable original equipment components, fittings and fasteners.

7800-010-004 LONG TERM MAINTENANCE SPECIAL TOOLS

Includes all special tools required to perform maintenance and repairs on MRCC in a depot facility.

7800-010-006 LONG TERM CONSUMABLES

Includes depot level consumable items to support one (1) MRCC for four (4) years based on 200 operational hours per year.

7800-010-007 ANNUAL CONSUMABLES

Includes consumable items to support one (1) MRCC for one (1) year based on 200 operational hours.

7800-016-002 MAINTENANCE & REPAIR COURSE

Comprehensive three (3) week instructional course for up to four (4) of the buyer's representatives, performed by STIDD senior technicians and operators at a STIDD facility in the US, covering all aspects of MRCC maintenance to include disassembly and repair of all LRU level craft systems and subsystems including electrical, hydraulic and mechanical. Upon completion of this course, students shall be capable of pre- and post-dive troubleshooting of LRUs and minor repairs. Includes all travel and lodging costs in the US.

7800-016-003 BASIC USERS COURSE

Comprehensive three (3) week instructional course for up to eight (8) of the buyer's representatives, at the STIDD training center in the US, covering all aspects of MRCC operation to include: Surface, Transition, Submerged, Ballast, Trim, Communications, Emergency procedures. Upon completion of this course students shall be capable of planning and conducting a mission scenario within the operational capabilities of the MRCC. Training shall include day and night operations including: loading equipment and passengers, launching and recovering swimmers and bottoming procedures. STIDD shall provide all required safety support equipment and a one (1) to four (4) instructor/student ratio. Training shall be conducted on open circuit SCUBA. Includes all travel and lodging costs in the US.

7800-016-004 ADVANCED USERS COURSE

Comprehensive two (2) week advanced instructional course for up to six (6) buyer's representatives at a STIDD facility in the United States. Upon completion of this course students will have been exposed to various operational scenarios utilizing the MRCC in a fully loaded configuration including passengers. Emphasis will be placed on operational procedures through short iterations and multiple short dive profiles designed to give students multiple opportunities to control all MRCC systems. At least one long range submerged operation will be conducted with passengers onboard.

The Advanced Users Course may be conducted utilizing closed circuit SCUBA. If closed circuit UBAs are to be utilized the customer must provide the desired UBA and an appropriate amount of CO2 scrubber. STIDD will provide two (2) qualified closed circuit UBA diving supervisors, an onsite diving medical tech and appropriate oxygen charging capability.

STIDD will provide all open circuit dive equipment required to safely support and conduct this course. Includes all travel and lodging costs in the US.



stiddmil.com

The STIDD Military Products website includes the latest, most up to date unclassified information on STIDD Military Submersibles

To become an authorized STIDD Military Website User Contact: 631-477-2400 ext 158 or e-mail sales@stiddmil.com

ATTENTION CONTRACTING OFFICERS:



- **DPD (Diver Propulsion Device) Items**
- **MRCC (Multi-Role Combatant Craft) Items are on GSA Contract No. GS-07F-0101K**
www.gsaadvantage.gov
- **STIDD Systems is a Small Business Entity.**
- **STIDD Submersible Boats are subject to ITAR controls.**
US Department of State DTC license required for export.

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CAGE CODE OW5E3

U.S. and International Patents Issued and Pending.

Specifications and availability of all STIDD Systems, Inc. products are subject to change without notice.



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REV 05/15