

Special Operations Vessel (SOV)

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The National Defense Authorization Act of 2012 identifies a capability gap for future Special Operations Forces (SOF) missions. The Act cites the aging MK V Special Operations Craft and the delayed inception of the Combatant Craft Medium (CCM) as a critical shortfall in the ability to perform missions ranging from maritime interdiction to infiltration/extraction of personnel.

In order to fill this mission capability gap, the Special Operations Vessel (SOV) is proposed. The SOV final concept design consists of a planing monohull craft with two water jet propulsors each driven by a single 16-cylinder diesel engine. The craft can deliver a payload of 10,000 pounds while achieving a sustained speed of 48 knots in 4-foot combined seas and an endurance range of 498 nautical miles at 40 knots.

The SOV payload area has room to seat 19 SEALs plus 2 RHIBs. The shock mitigating seats for the four special warfare combatant craft crewmen (SWCC) and the SEAL team are chosen for the required high speed transits. The hull and its features are designed to minimize vertical accelerations and it is predicted to achieve an average of less than 1.5 g on its highest 1/10th vertical acceleration at its endurance speed and sea state.

The hull is designed for Aluminum construction with structural framing and reinforcement. Four watertight bulkheads are used to achieve single compartment flooding capability. Anchor stowage is forward of the collision bulkhead. Between the engine room and collision bulkhead are spaces for the electrical generator sets, communications equipment, and other mission critical gear. Hotel services are minimized at the customer's direction based on the mission objectives and type of passengers carried aboard to include exclusion of dedicated berthing and messing areas from the general arrangements.

The superstructure is designed for composite fabrication. Both space and function are major design considerations of the superstructure. Administrative transportation in a C-17 cargo plane requires fitting the appropriate payload and navigation equipment, including topside communication antennae. A limiting factor in the design is allowing removal of the superstructure for administrative transportation while still ensuring sufficient performance. The superstructure is also designed with fore and aft components to allow for modularity in both transportability as well as mission function. Missions requiring only the pilot house be covered could see the removal of the aft superstructure. Missions requiring full coverage of the payload bay could be fit with both the fore and aft superstructures. Underway operations required the forward superstructure to be in place.

Boat Characteristics	
Parameter	Value
<i>LOA</i>	75 feet
<i>Beam</i>	16 feet
<i>Draft</i>	3.8 feet
<i>Full Load Weight</i>	142,895 LBS
<i>Max Speed</i>	66/48 kts (calm water / 4-ft combined seas)
<i>Endurance Range</i>	498 nm (40 kts, 4-ft combined seas)
<i>Payload Carrying Capacity</i>	10,000 lbs
<i>1/10th highest Vertical Accelerations</i>	1.4 g's (40 kts, 4-ft combined seas)
<i>Crew</i>	4+19 SEALS
<i>Hull</i>	Aluminum Alloy AL 5456
<i>Super Structure</i>	Composite
<i>Unit Acquisition Cost</i>	\$11.5 million (20 units)

