AD-A183 964 REQUIRED OPERATIONAL CAPABILITY USMC-ROC-MOB-21143 FOR A RIGID RAIDING CRAFT AND TWIN OUTBOARD MOTORS(U) MARINE CORPS WASHINGTON DC 20 MAY 87 1/1

UNCLASSIFIED USMC-ROC-MOB-211.4.3 F/G 13/10 NL

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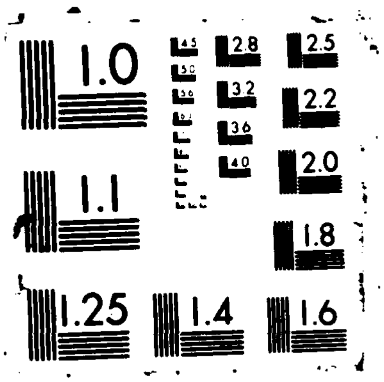
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DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO
3900
RDD250518nq
20 MAY 1987

From: Commandant of the Marine Corps

Subj: REQUIRED OPERATIONAL CAPABILITY (ROC NO. MOB 211.4.3) FOR A RIGID RAIDING CRAFT AND TWIN OUTBOARD MOTORS

Ref: (a) MCO 3900.4C

Encl: (1) ROC No. MOB 211.4.3 for a Rigid Raiding Craft and Twin Outboard Motors

1. In accordance with the procedures set forth in the reference, the ROC for a Rigid Raiding Craft and Twin Outboard Motors is hereby established and promulgated.

2. The Commanding General, Marine Corps Development and Education Command (Director, Development Center), Quantico, Virginia, 22134, is the Marine Corps point of contact for any questions pertaining to this ROC and any development efforts pertaining thereto.

RAY "M" FRANKLIN
Major General U.S. Marine Corps
Deputy Chief of Staff for RD&S

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REQUIRED OPERATIONAL CAPABILITY
FOR A
RIGID RAIDING CRAFT AND TWIN OUTBOARD MOTORS
(ROC NO. MOB 211.4.3)

1. STATEMENT OF THE REQUIREMENT. In order to perform important aspects of its amphibious mission, the Marine Corps requires a rigid raiding craft (RRC) with twin outboard motors. The RRC will be employed with Marine amphibious units (MAU's) that are designated special operations capable (SOC). It will provide a high speed, low signature amphibious method to insert and extract small units conducting missions defined in Marine Corps doctrine and Joint Chiefs of Staff Publication 1. The initial operational capability (IOC) is 1987 and full operational capability (FOC) is 1988.

2. THREAT/OPERATIONAL DEFICIENCY

a. Threat. The threat to United States interests by unconventional enemies has increased significantly. The ability to respond selectively and quickly without becoming committed to protracted operations requires special tactics and equipment.

b. Operational Deficiency. The Marine Corps does not have a high speed surface craft to deliver units carrying out conventional and special missions. Current methods available to the commander of the MAU include delivery using assault amphibious vehicles (AAV's), Navy landing craft, or helicopter. All these methods have desirable characteristics, but all also have disqualifying limitations such as weather, speed, noise, size, and radar signature. A small, highly maneuverable, fast surface craft is required to provide the MAU commander increased flexibility and survivability in delivering and retrieving units conducting special missions.

3. OPERATIONAL AND ORGANIZATIONAL CONCEPTS. The RRC, with twin outboard motors, will be used by small task-organized units such as infantry squads, reconnaissance teams, or raid patrols. It will be organizational equipment of the MAU headquarters, and operators from the using unit will be trained during the MAU(SOC) work-up. It will be simple to use and capable of employment by all infantry and reconnaissance units of the MAU in weather conditions up to and including sea state three. Each RRC will be capable of carrying at least 10 combat-loaded Marines and a coxswain. A total of 15 RRC's and 30 outboard motors are required for each MAU(SOC) in order to allow a single company-size raid or several smaller simultaneous operations. Total number of craft and motors required are as follow:

RRC	Outboard Motors	Trailers	Purpose
90	180	12	MAU(SOC)'s
10	20	4	training
20	40	0	operational readiness float
0	0	0	preposition war reserve
0	0	0	maritime prepositioning ships
2	4	0	maintenance training
122	244	16	TOTAL

4. ESSENTIAL CHARACTERISTICS

a. General. The RRC, with twin outboard motors, will perform dependably at high speed over long ranges in marginal weather allowing surprise and flexibility in special operations. It will have a low amphibious-lift footprint and will also be air transportable and deliverable.

b. Specific Characteristics

(1) The RRC will have the following specific characteristics:

(a) Length not more than 19 feet.

(b) Beam not greater than 7 feet 6 inches.

(c) Hull weight not more than 1,750 lbs empty.

(d) Draft no deeper than 10 inches.

(e) Capacity: at least 10 men with combat equipment and coxswain in state one seas.

(f) Flat deck ramped at bow.

(g) Subdued color scheme.

(h) Reinforced keel, bow, gunwales, and rails.

(i) Hard point center of bow for addition of weapon mount.

(j) Internal fuel tank, 60- to 65-gallon capacity with flexible fuel adaptability (explosion safe fuel tank required).

(k) Speed: not less than 12 miles per hour in state three seas with troops embarked and not less than 30 miles per hour in state one seas without troops embarked.

(l) Embarkation capabilities: stackable at least 3 high with stacking cradles.

(m) Lift capabilities: cargo crane-compatible with davit hoist and helicopter internal.

(n) Inflatable boat roller seats.

(o) Transom: reinforced with quick release motor mount (subdued-color stainless steel).

(p) Console: detachable fiberglass side-mounted console (starboard mount).

(q) Steering: mechanical with subdued-color stainless steel wheel.

(r) Stainless steel full-length gunwale rescue rails.

(s) Equipment tie-down hard points on gunwale and bow.

(t) Stainless steel cutwater.

(u) Bouyant when swamped.

(2) The twin outboard motors will have the following specific characteristics:

(a) 55 horsepower minimum.

(b) Propeller shaft length compatible with RRC.

(c) Mechanical starting required, with electrical start desired.

(d) Nonelectric (hydraulic) assist tilt.

(e) Subdued color.

(f) Gasoline powered (acceptable), diesel fuel powered (desired).

(3) Reliability, Availability, and Maintainability (RAM)

(a) Reliability of the RRC is defined as the probability that the RRC system will complete a two-hour mission of continuous operation under the performance characteristics stated in paragraphs 3 and 4 above. An operational mission failure is defined as that condition which prevents the RRC system from performing its mission. The RRC system is composed of the rigid craft and two motors. The RRC system will provide a reliability of no less than .98 minimum and .993 desired based on the following mean time between operational mission failure (MTBOMF) requirements. A 90 percent confidence level is required for the MTBOMF.

Desired system MTBOMF	300 hours
Minimum system MTBOMF	100 hours
Minimum boat MTBOMF	700 hours
Minimum motor (each) MTBOMF	116 hours

(b) Maintainability. The mean time to repair (MTTR) a system operational mission failure, at the 90 percent confidence level, shall be no more than two hours for unscheduled maintenance at the organizational level. Intermediate level unscheduled maintenance MTTR will be no more than 7.4 hours, at 90 percent confidence. Over both maintenance levels the MTTR will not exceed 3.8 hours. The mean time between preventive maintenance (MTBPM) for the RRC system will be three hours at the organizational level, and no preventive maintenance will be performed at higher levels of maintenance. The RRC system mean time to perform preventive maintenance (MTTPM) will be 0.6 hours. The minimum maintenance parameters for the RRC system components are as follow:

	Motor	Boat
MTTR	3.7	4.7
MTBPM	3.0	3.0
MTTPM	.6	.6

(c) Availability. Based on the preceding parameters and specifications, the RRC system will have a minimum inherent availability (A_i) of 0.96 and an achieved availability (A_a) of 0.81.

5. INTER/INTRAOPERABILITY AND STANDARDIZATION REQUIREMENTS. The RRC will use fuels and lubricants available through the supply system and procurable from our NATO allies. Configuration for operations and navigation will be compatible with methods of employment used by United States and allied forces as well as the rules of the road for inland waterways and the open sea. Where possible, parts and consumables required for repair and upkeep of this system will be standardized with similar small craft currently in use by the Navy and Coast Guard.

6. RELATED EFFORT. There are no small boats in use by other United States armed forces that satisfy this requirement, although the Navy has a utility boat with an acceptable hull. Within NATO, the British Royal Marines have a boat with a motor that may satisfy this requirement.

7. TECHNICAL FEASIBILITY AND ENERGY EFFECTIVENESS IMPACT. A nondevelopmental item (NDI) effort is preferred. Little or no development is required. This is considered a low risk project.

8. LIFE CYCLE COST FORECAST. See annex A.

9. MANPOWER REQUIREMENTS. It is anticipated that the RRC, with twin motors, will not require an increase in force structure for operation, maintenance, and supportability. Maintenance and operation will be performed by using unit personnel with skills obtained during the predeployment training cycle at the force service support group. First-echelon maintenance (e.g., fresh-water washdown) and second-echelon maintenance (e.g., repair of superficial damage to hull and hardware or adjustment of carburetor or throttle) are to be performed by the user. Third and fourth echelon maintenance are to be performed by the maintenance battalion of force service support group.

10. TRAINING REQUIREMENT. Acquisition of this equipment will not significantly affect training. Training of coxswains and passengers will take place during the MAU(SOC) training cycle and will be conducted by the organization designated responsible by the respective Marine amphibious force. Training of personnel, MOS 1341/1316, to perform third and fourth echelon maintenance will take place at the Marine Corps Engineer School, CLNC. Additional maintenance instruction, if any, will be conducted at the factory.

11. AMPHIBIOUS/STRATEGIC LIFT IMPACT. Impact on strategic lift will be minimized by making the RRC stackable. The required dimensions of the RRC will allow it to be internally lifted in the CH-53 helicopter and all current transport aircraft.

Major System: Rigid Raiding Craft & Twin Out-Board Motor (RRC) Date: 03-[illegible]-1987

LIFE CYCLE COST FORECAST

FUNDING PROFILE
(In Thousands of FY88 Constant Budget Dollars
FYDP Dollars in Parentheses)
(November 86 Escalators)

8 YEAR LIFE CYCLE

	PRIOR YEARS	CURRENT YEAR	BUDGET YEAR	FY89	FY90	FY91	FY92	FY93	TO COMPL'N	TOTAL PROGRAM
Major System										
RDT&E	0	0	0	0	0	0	0	0	0	0
FYDP Dollars		(0)	(0)	(0)	(0)	(0)	(0)	(0)		
PMC	0	3,454	0	0	0	0	0	0	0	3,454
FYDP Dollars		(3,352)	(0)	(0)	(0)	(0)	(0)	(0)		
QTYS FUNDED										
Boat	0	122	0	0	0	0	0	0	0	122
Motor	0	244	0	0	0	0	0	0	0	244
Support										
Support PMC	0	30	28	28	28	29	28	28	32	[illegible]
FYDP Dollars		(78)	(28)	(29)	(29)	(30)	(31)	(31)		
MILCON	0	0	0	0	0	0	0	0	0	0
FYDP Dollars		(0)	(0)	(0)	(0)	(0)	(0)	(0)		
O&MMC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FYDP Dollars		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
MPMC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FYDP Dollars		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
NAV PROC		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL PROGRAM	0	4,392	1,386	1,386	1,386	1,386	1,386	1,386	[illegible]	14,[illegible]
FYDP Dollars		(4,768)	(1,386)	(1,403)	(1,419)	(1,433)	(1,447)	(1,461)		

This estimate was changed from the one dated 4 Feb 87. The quantity of trailers was reduced from [illegible] to [illegible]. This estimate was checked by the Analysis Support Branch, Dev. Ctr., MCDEC (AV 278-2235)

ANNEX A

Major System: Rigid Raiding Craft & Twin Out-Board Motor (RRC) Date: 03-19-1987

LIFE CYCLE COST ESTIMATE

(In Thousands of FY88 Constant Budget Dollars)

November 86 Escalation

10 YEAR LIFE CYCLE

PHASE/CATEGORY		SUBCATEGORY	CATEGORY	PHASE
I. RDT&E PHASE				0
II. INVESTMENT PHASE				3,598
1. SYSTEM PRODUCTION/PROCUREMENT			3,546	
A. Major End Item (Contractor)		3,394		
B. Initial Provisioning/Spares, Repair Parts		44		
C. Government Furnished/Added Equipment		0		
D. Other Direct System Costs		107		
2. SUPPORT EQUIPMENT PROCUREMENT			53	
A. Ammunition		0		
B. Weapons and Tracked Combat Vehicles		0		
C. Guided Missiles		0		
D. Comm-Elec Equipment		0		
E. Support Vehicles		53		
F. Engineer and Other Equipment		0		
3. MILITARY CONSTRUCTION			0	
III. OPERATIONS AND SUPPORT PHASE				10,770
1. OPERATIONS			6,404	
A. Operator Personnel/Training		3,430		
B. Material Consumption		134		
C. Energy Consumption		2,840		
2. MAINTENANCE			3,460	
A. Organizational Maintenance		1,909		
1) Personnel/Training	1,360			
2) Maintenance Material	350			
3) Repair Material	200			
4) Other	0			
B. Intermediate Maintenance		1,323		
1) Personnel/Training	736			
2) Maintenance Material	23			
3) Repair Material	7			
4) Other	559			
C. Depot Repair		0		
D. Depot Overhaul		0		
E. Unprogrammed Losses		227		
F. Software Maintenance		0		
3. INDIRECT SUPT, BASE OPS & MAINT, OTHER O/H COSTS			822	
A. Base Operations		208		
B. Other Overhead Costs		614		
4. SUPPORT EQUIPMENT O&S			84	
TOTAL LIFE CYCLE COSTS				14,368

END
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