MCWP 3-13

Employment of Amphibious Assault Vehicles (AAVs)

U.S. Marine Corps

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Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

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FOREWORD

Marine Corps Warfighting Publication (MCWP) 3-13, *Employment of Amphibious Assault Vehicles*, provides the doctrinal basis for the use of amphibious assault vehicles (AAVs) in support of Marine air-ground task force (MAGTF) operations. This publication addresses the mechanized capability of the assault amphibian unit, section, and platoon in support of MAGTF missions. These missions include seizure and defense of naval and air bases, conduct of land operations essential to naval operations, and sustained operations ashore that support joint or combined force land operations.

The target audience for MCWP 3-13 is officers and staff noncommissioned officers serving as members of MAGTF staffs and assault amphibian battalions. The publication provides information for consideration in the planning and employment of AAVs in combat operations and military operations other than war.

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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CHAPTER 1. FUNDAMENTALS

The amphibious assault vehicle (AAV) is employed to conduct mechanized (mech) operations and related combat support in subsequent operations ashore. A fully-tracked amphibian, the AAV is used by the assault amphibian (AA) battalion to accomplish its mission to land the surface assault elements of the landing force (LF) and their equipment in a single lift from assault shipping during amphibious operations to inland objectives. The AA battalion and subordinate units perform the following tasks:

- Transport assault elements, selected equipment, and supplies ashore in mech ship-to-shore movement, and other combat support operations.
- Participate in the planning, coordination, and execution of mech, linkup, riverine, landing, and other operations as directed.
- Use organic weapon systems to provide fire support during amphibious operations.
- Provide support by clearing lanes through minefields and other obstacles during amphibious operations and subsequent operations ashore.
- Execute the missions associated with AAV special mission kits.

AAV Capabilities

Understanding the capabilities and limitations of the AAV are important to maximizing its operational utility on the battlefield. An amphibious armored personnel carrier (APC), the AAV is capable of open ocean operation from offshore shipping through rough seas and plunging surf; and without modification, it is capable of traversing beaches, crossing rough terrain, and performing high speed operations on improved roads. AAVs provide the ground combat element (GCE) with armor protection as well as land and water operation capabilities.

Armor Protection

The AAV provides armor-protected mobility to the embarked infantry who will dismount to carry the fight to the enemy, while the AAV crew fights from overwatch. The hull of the AAV is constructed from welded plates of ballistic aluminum and will provide a high degree of protection against small arms fire, up to .30 caliber at 300 meters and 105-millimeter high explosive (HE) (variable time) fragmentation at 15 meters.

Land Operation

The AAV is capable of worldwide operation in nearly any terrain. Possessing a ground pressure of roughly 9.1 pounds per square inch, the AAV is capable of operating in soft soil that is inaccessible to the M1A1 tank or light armored vehicle-25 (LAV-25). The AAV has a 300-mile operating range at a cruising speed of 25 miles per hour on a flat, hard surface road with a maximum land speed of 45 miles per hour. The vehicle can operate on forward slopes of 60 percent and side slopes of 40 percent. It can cross an 8-foot trench and a 3-foot vertical obstacle.

Water Operation

The AAV is the most seaworthy personnel landing craft in military service. It is capable of operating in calm to moderate seas. Depending on the cargo load, the AAV can negotiate up to 10-feet plunging surf and can self-right from a 180-degree roll. Powered by two 21-inch water-jets, the AAV has a maximum water speed of 8.2 miles per hour and is capable of a waterborne range in excess of 45 miles in calm seas. Although relatively slow in the water, the vehicle is capable of safe, long distance water marches that are limited only by

extremely rough seas and associated effects of motion sickness on embarked personnel.

CAUTION

The AAV was not designed as an infantry fighting vehicle (IFV) and should not be employed as such. It lacks the armor protection, stabilized weapons station, low silhouette, and means for the infantry to fight from the vehicle without exposing themselves to direct fire.

Types of AAVs

Three AAV7A1 family variants provide personnel transport, command, and recovery functions.

AAVP7A1 and AAV7A1 Reliability, Availability, and Maintainability/Rebuild to Standard

The AAVP7A1 and the AAV7A1 reliability, availability, and maintainability/rebuild to standard (RAM/RS) are designed to provide combat support and armor-protected mobility for a reinforced rifle squad and associated combat equipment for operation on land or sea. Although the vehicles are principally personnel carriers, they may be employed to transport cargo in support of combat service support (CSS) operations. Appendices A and B provide additional data and specifications.

Load Capabilities

The maximum troop load (TL) for both vehicles consists of 3 crewmen and 21 combat-loaded infantrymen. The maximum cargo payload for the AAVP7A1 is 10,000 pounds and the AAV RAM/RS is 8,000 pounds. Typical cargo loads include—

- 17, 55-gallon drums.
- 400 cases of meals, ready to eat.
- 138 cases of .50-caliber machine gun ammunition.
- 2, 500-gallon fuel bladders.

Special Mission Kits

Five special mission kits add to the capabilities of the vehicle.

Enhanced Appliqué Armor Kit. The enhanced appliqué armor kit (EAAK) consists of a series of bolt-on armor panels that provide additional armor protection to the vehicle. With the EAAK mounted, the vehicle receives a substantial increase in ballistic protection. The EAAK adds 4,400 pounds to the vehicle. The EAAK also mounts to the AAVC7A1 but not the AAVR7A1. The following EAAK data applies:

- No penetration for 7.62-millimeter and smaller weapons at muzzle velocity.
- 95 percent probability of no penetration for 12.7-millimeter armor piercing at muzzle velocity.
- 95 percent probability of no penetration for 14.5 millimeters at 300 meters.
- 99 percent probability of no penetration for 155-millimeter HE at 50 feet.
- Substantially decreases the effectiveness of shape charge weapons by reducing the fragmentation debris cone from 110 degrees to 35 degrees.

Litter Kit. The litter kit provides space for up to six litters and is installed by the vehicle crew when the vehicle is to be used by medical support personnel as a mobile aid station and/or medical evacuation vehicle. For use only with the AAVP7A1 and AAV RAM/RS, the litter kit is installed using straps and is secured to existing hull brackets and deck plate slots.

MK-154 Linear Mine Clearing Kit. The MK-154 linear mine clearing (LMC) kit is a three-shot system designed for use in breaching operations. The kit functions as a rocket launcher, and an initial ammunition issue and subsequent reload is required to permit the kit to operate. Each of the three rockets, when launched, pulls a series of tubing from the cargo/personnel area of the AAVP7A1 and AAV RAM/RS; each series of tubing contains 1,750 pounds of C-4 explosive.