

1.1 AMPHIBIOUS COMBAT VEHICLE

The Amphibious Combat Vehicle, shown in Figure 1, is a US Marine Corps program to develop a fully armored 8x8 personnel transport vehicle accommodating 10-13 troops that could be launched from a ship up to three miles offshore, but also possess full ground mobility on land. Lockheed Missiles & Fire Control Systems originally asked MERRILL to manufacture the armor Survivability Hull (personnel compartment) for this vehicle; but after working directly with our team for more than a year, we were provided the opportunity to manufacture the entire vehicle structure including the sub-frame/chassis, assemble all of the driveline systems (hydraulics, pneumatics, electrical, controls), integrate all of the instrumentation (drivers control panel, power distribution, weapon station, seating), apply final CARC painting, and perform final drive test and check-out.

MERRILL worked hand-in-hand with Lockheed's project team throughout the production phase to review and certify all of our manufacturing processes including welding, machining, and coatings. The critical mating interfaces between the hull and the chassis were precision machined by MERRILL on our Mazak V-140N 5-axis machining center to ensure exact dimensions of all surfaces.

It was the goal of our Lockheed-MERRILL team to unveil our initial "Production Pathfinder Vehicle" (PPV) at the 2015 Modern Day Marine symposium, scheduled for 22-24 September 2015; however the first (partial) set of models weren't released by Lockheed until June 10th due to the structural design and analysis of this new vehicle design. MERRILL responded in blitzkrieg fashion and completed the entire vehicle build and integration in only three (3) months to achieve our team's goal.



Figure 1 – Amphibious Combat Vehicle Fabrication, Assembly, & Integration

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This accomplishment, combined with MERRILL's technical expertise and the collaborative working relationship we maintained with Lockheed through the duration of this program, resulted in MERRILL Technologies Group being named as one of ***Lockheed Martin Missiles & Fire Control's 2015 Top 5 Suppliers.***

MERRILL is experienced with high performance paint finishes including CARC paint which is required for all US Army ground combat vehicle applications, including the 1,238 Remote Weapon Stations (RWS) manufactured by MERRILL for the M1A1 Abrams Main Battle Tank, and the Amphibious Combat Vehicle (ACV) manufactured and integrated by MERRILL for Lockheed Martin as a competitive entry for the US Marine Corps. Environmental conditions (temperature, humidity) are monitored and recorded prior to all paint applications with quality inspections and adhesion tests performed upon completion to verify quality and conformance to customer requirements.