Bridge to Nowhere

How the divestment of bridging capabilities has limited our ability to maneuver and sustain

by 1stLt Katherine Schumann

Combat engineers currently conduct mobility, counter mobility, engineer reconnaissance, and general engineering missions. Those tasks require ingenuity, determination, and wit. In the past, gap-crossing operations consisted of Improved Ribbon Bridges (IRB) and Medium Girder Bridges. After *Force Design 2030*, engineers are without those tools at our disposal. *Force Design 2030* rewrote the playbook for engineering with the diminishing of engineering capabilities for gap crossing and breaching with the divestment of standardized bridging and armored breaching vehicles. Seeking to adjust the non-expeditious pieces of equipment from the table of equipment is expected as one of the interior bays of the IRB weighs approximately 14,000 pounds and is 6.92 meters long and 8.63 meters wide. This piece of equipment can take up quite some space on a ship. While the IRB is colossal, the IRB or some gap-crossing engineering asset is necessary for future operations in a distributed environment in littoral areas of operation.

An IRB is used for tracked, wheeled, and foot traffic to cross a body of water. While there are many other applications for the IRB, we will primarily focus on gap crossing as a highly valued asset for the next fight. The IRB is a two-way aluminum roadway that floats on the water with two variations: a continuous span and a raft formation. A continuous span reaches from one shoreline to the next; the bridge can span up to 210 meters in one IRB platoon. In the rafting formation, the IRB can adjust from a maximum of a seven-bay raft to a four-bay raft. A seven-bay raft can be assembled, in its entirety, in twelve minutes. The seven-bay raft can transport up to 140 military load classification from shore to shore. The raft is propelled by Bridge Erection Boats (BEB) on either side of the raft that can cover a 300-meter gap in 16 minutes with a full load.[1] The bays which make up the bridge assembly can be transported most commonly by LVSR-18s or CH-53s.

>1stLt Schumann's bio was unavailable at the time of printing.

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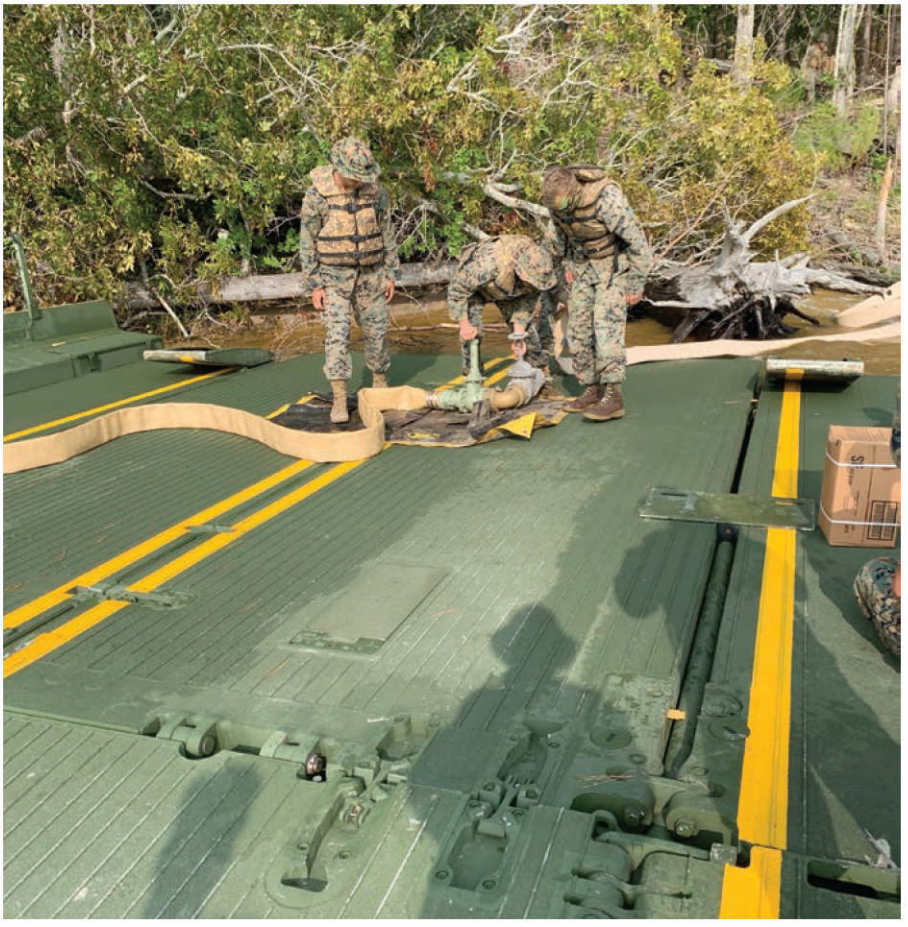
While conducting wargaming operations over the past three years, the question of gap crossing continues to be brought to light. In multiple scenarios to cross rivers and intercoastal waterways spreading through different countries, the mainstay was the need for an expeditious dependable gap-crossing asset. IRBs provide a means to cross a gap, whether from island to island or in a situation to maneuver a force forward in a contested environment. New doctrine focuses on *Force Design 2030* and places more of an emphasis on integration with the Navy with continued integration at all levels.[2] Currently, the Marine Corps does not have autonomous gap connectors, vice air, to bring supplies from one EAB to another; this could cause severe logistics and resupply chain issues.

"Distributed Lethality is the condition gained by increasing the offensive power of individual components of the surface force (cruisers, destroyers, littoral combat ships [LCSs], amphibious ships, and logistics ships) and then employing them in dispersed offensive formations known as hunter-killer SAGs."[3] Ship-to-shore maneuver is one of the most challenging operations due to the lack of concealment; therefore, the need for offensive power projection on littoral connectors arises as one of the most prominent necessary features for effective maneuver to shore. The 9th Engineer Support Battalion conducted HIMARs employment from an IRB and achieved effects on target from the water, making this a protection method while conducting ship-to-shore operations. BEBs are the boats tied to the side of the IRB and maneuver the floating bridge to the landing site, and the BEB can support a 240B machinegun as another method of deterrence. Distributed lethality on other ship-to-shore connectors is not currently available.

Our constant pursuit of over-the-horizon deployment requires ship-to-shore connectors to travel a further and further distance; the CMC's vision is to fill this gap with the Stern-loadable Light Amphibious Warship, but what is the solution in the meantime? There are currently two alternatives for littoral connectors with the IRB's decomissioning: the Landing Craft Air Cushion and the Littoral Craft Utility. The Navy owns the Landing Craft Air Cushion, and the Marine Corps uses them to provide ship-to-shore transportation. They have a 200 nautical mile (nmi) range with payload and consume 5000 gallons of fuel. With the requirements for maneuver increasing in a pacing threat technology challenge, the range for the Landing Craft Air Cushion has



Gap-crossing capabilities are required to enable ground mobility in the littorals. *(Photo provided by author.)*

a growing concern with the amount of fuel consumed from on trip to shore. The Landing Craft Utility is the other alternative and is a slow-moving behemoth that takes up to four hours to move inland from the ship. Maneuver from the sea doctrinally becoming the main effort and with a growing desire for speed and massing forces ashore to create expeditionary advanced bases; littoral connectors need to be efficient and swift.

Additionally, distributed lethality requires maneuver space on the battlefield; many fresh and saltwater rivers cascade through the coastal and intercoastal regions. Dry or wet, require engineering bridges to gain access and quickly impose our will on the enemy. The distribution of forces in the EAB concept will require quick emplacement of small nodes that will require transportation to and from their location, and this requirement will need some gap-crossing capability for any wheeled, tracked, or towed asset ranging from ULTVs to HIMARs. Speed is the cornerstone of lethality, and without the capability to pass over gaps quickly, there is no expeditious way to cross a gap vice a rope bridge, which does not offer a way to cross rolling stock.

The Marine Corps continues to conduct humanitarian efforts globally with food, water, and medicine. Over 90 percent of today's population live within 10 kilometer of a waterway or coastline. At the 8th Engineer Support Battalion, the IRB platoon conducted a proof of concept to deliver fuel and water across a wet gap in 2020. Three 3,000-gallon bladders were placed on the raft and transported across the New River waterway with Bulk Fuel Company. On the other side of the waterway was a 20,000-gallon bladder; after two trips, the IRB had successfully replenished the fuel supply across the New River. In December 2020, IRB enhanced its capability by providing the Battalion with over 3,000 gallons of fresh water from the raft over five days. The implications of this feat are endless with the ability to provide fresh water to a population during a humanitarian crisis up and down a coastline or waterway and maintaining multiple floating rafts for multiple mobile water points. Within those hubs for water, we could also replenish the population with MREs and other food and first aid sources. Maintaining a trauma center on the raft is also possible with BEBs providing transportation to and from the mobile hospital cell, allowing a central location for trauma care. In addition, the doctors could provide patients with level III trauma care while traveling to another casualty collection point. The humanitarian capabilities of the raft are limitless and could provide constant care during a humanitarian crisis.

Combat engineers are enablers of maneuvering in a contested and rigid terrain environment. Gap-crossing assets are necessary for speed and lethality on an objective in an expeditious environment, specifically near waterways. The lack of gap crossing assets the Marine Corps currently is equipped with lacks the foresight for a gap-crossing challenge. IRB systems are critical to the future fight no matter the mission; a replacement needs to be prioritized for speed and massing forces on the objective, whether that be a hostile or humanitarian objective. Bridging is a necessary component of the MAGTF and cannot be overlooked or understated.

Notes

1. Headquarters Department of the Army, *TM 90-13 River Crossing Operations*, (Washington, DC: September 1992).

2. Headquarters Marine Corps, *Technical Manual Expeditionary Advance Base Operations*, (Washington, DC: 2021).

3. Thomas Rowden, "Distributed Lethality," *Proceedings* 141, No. 1 (2015).

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