

Bridging the Gap – Modernizing Army Bridge Units



By Lieutenant Colonel Andrew DiMarco

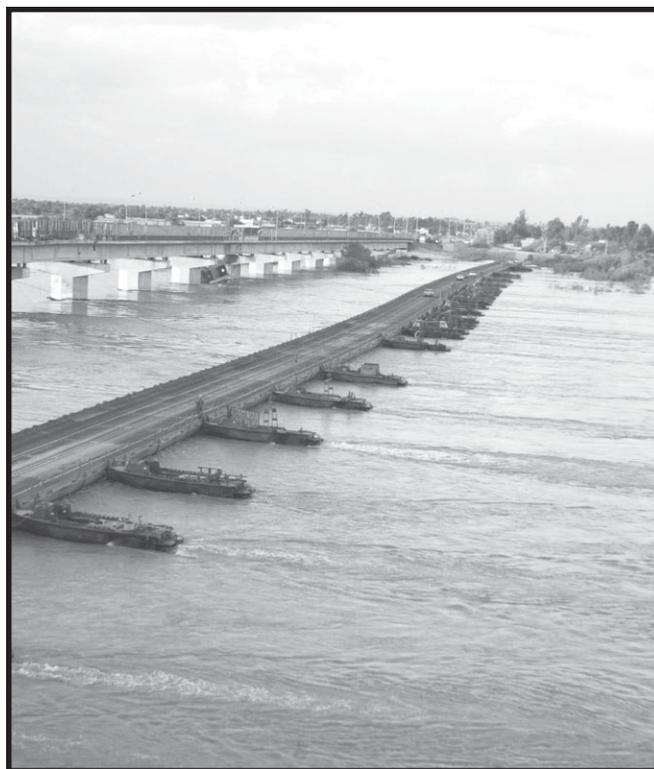
In early 2003, the Program Manager for Bridging began fielding two new bridge systems to the Army's multirole bridge companies (MRBCs): the improved ribbon bridge (IRB) and the dry support bridge (DSB). Both systems are integral components of the MRBC's objective capability.

The Army designed MRBCs to give commanders a flexible and adaptable unit that can accomplish both float- and fixed-bridge missions, are 100 percent mobile (every bridge load has a prime mover), and take advantage of product standardization. MRBCs are being upgraded with the common bridge transporter (CBT), which is a variant of the heavy expanded-mobility tactical truck (HEMTT); palletized load system (PLS) trailers; and standard PLS flatracks. Every bridge load, whether it is related to the IRB or the DSB, is palletized so that any CBT or comparable load-handling vehicle could carry, deliver, or reposition palletized bridge loads. MRBCs are optimized to conduct simultaneous fixed- and float-bridge operations.

Improved Ribbon Bridge

The IRB system provides enhanced capabilities to the MRBC by increasing military load class (MLC) capability from MLC 60 tracked (T) to MLC 80T/110 wheeled (W) in water speeds up to 10 feet per second (about 6 miles per hour). This system is a one-for-one replacement for the improved float bridge (IFB), which is reaching the end of its service life. The system is composed of M16 ramp bays and M17 interior bays that can be interconnected into rafts or bridges over nonfordable water gaps. Each MRBC is authorized 30 IRB interior bays and 12 IRB ramp bays, providing 210 meters of bridging.

The IRB is deployed in a manner similar to its IFB predecessor, and the new system is fully interoperable with CBTs, PLS trailers, bridge-erection boats (BEBs), and supplementary sets. The IRB also interoperates with the IFB and the German float-bridge system, but at reduced MLC ratings.



Improved Ribbon Bridge in Iraq

While dimensionally similar to the older IFB, the IRB is a new design with internal and external enhancements. Both the ramp and interior bays feature an aluminum strong-back forging to increase load-carrying capability, and the IRB ramp bay—

- Has a contiguous ramp end, thus eliminating the IFB's throw ramps.
- Incorporates a hydraulic pump that uses a biodegradable fluid.
- Can reach bank heights of more than 2.5 meters, providing access and egress improvements over the IFB.
- Has a deck width of 4.5 meters, allowing two-way traffic for smaller vehicles for the first time.

The IRB is externally transportable by CH-47 Chinook and CH-53 Sea Stallion helicopters and internally transportable by C-130 aircraft when partially dismantled. The IRB can use the existing anchorage system from supplementary sets for long-term placement.

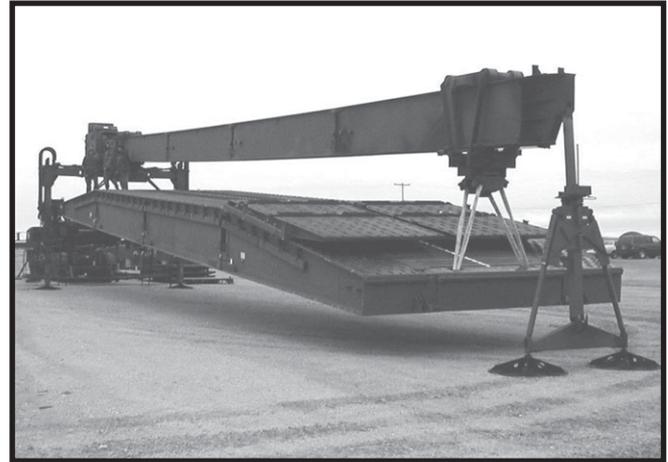
The IRB program is in full-rate production after having achieved type classification standard and a full materiel release during May/June 2003. The Program Manager for Bridging fielded 126 IRB bays to the 74th, 502d, and 814th Multirole Bridge Companies before they deployed to Southwest Asia. These units successfully used the IRB system throughout Iraq.

Dry Support Bridge

The M18 DSB system brings a revolutionary change to the MRBC. The DSB relies on a mechanical system to significantly reduce soldier effort and improve operational capability to the force. The DSB replaces the medium girder bridge (MGB), while doubling the gap-crossing capability of each MRBC. It is intended to fill all 40-meter-or-less, dry-gap bridging roles from the brigade rear to the communication zone ports in a variety of tactical situations.

Each MRBC is authorized four DSB systems, each consisting of a PLS-based launch vehicle and a modular bridge that can span gaps up to 40 meters. A crew of eight soldiers can transport the entire system and deploy a 40-meter bridge in 90 minutes or less. Bridge loads are modular and palletized onto seven flatracks that are transported via organic CBTs and PLS trailers. Soldiers can also construct two shorter bridges, up to 22 and 28 meters long respectively, from each DSB system.

The M18 DSB system is composed of two subsystems, the M1975 launcher vehicle and the M19 DSB. The M1975 uses a hydraulically operated launch system integrated onto a standard PLS chassis and a set of launch beams that is carried as a separate palletized load. A launch beam is cantilevered over the gap that supports the bridge as it is built and projected across the gap. The labor required to emplace and remove the bridge is significantly reduced by the use of an integrated, materiel-handling crane, as well as by the ability of CBTs to maneuver the palletized bridge loads around the construction site easily.



Dry Support Bridge

The M19 DSB is a modular, all-aluminum bridge. Although some of the components seem similar in design to the MGB, the number of components has been drastically reduced and the bridge is a new design. A 40-meter bridge consists of 2 ramp modules, 5 parallel modules, 2 end beams, 20 approach ramps, and 24 bridge pins. Each module has curbs and drivers' aids integrated into it, and modules fold up onto themselves for transportation. The bridge has a 4.3-meter roadway and supports MLC 80T/110W. The bridge is also fielded with a new anchorage system for longer-term use. To further reduce labor requirements, the anchorage system features an onboard pneumatic hammer, which is powered via standard connections to the launcher vehicle or organic CBTs.

The DSB program transitioned into full-rate production in May 2003 and attained full materiel release in June 2003. The Program Manager for Bridging fielded four DSB systems to the 74th Multirole Bridge Company in February 2003 just before its deployment to Southwest Asia, and the system successfully supported operations there.

Summary

Additional information on the IRB and DSB systems, as well as other systems managed by the Program Manager for Bridging, can be found at the Army Knowledge Collaboration Center or at <http://peocscs.tacom.army.mil/pmbridging.htm>. >



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