

Mobility Learning Event — Infantry Squad Vehicle Modification

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The introduction of the Infantry Squad Vehicle (ISV) into the traditional infantry brigade combat team (IBCT) offers formally slow and limited formations a transition to speed and mobility. ISVs drastically increase the amount of terrain an IBCT can cover while providing a platform that enhances lethality but not a dependence on the platform to fight their formations. The Army's Transformation in Contact (TiC) initiative to reorganize IBCTs to mobility brigades (MBDEs) raises awareness of the need for different ISV variants to accommodate this new formation. The MBDE construct removes all legacy vehicles from the IBCT (High Mobility Multipurpose Wheel Vehicles [HMMWVs], Light Medium Tactical Vehicles [LMTVs], trailers, etc.) and replaces them with variants of the ISV. As these variants are still in development, it is important to consider the importance of specificity and modularity with this new vehicle. In this article, we provide a few examples to serve as a starting point to address the brigade's long-term needs for its vehicle platforms.

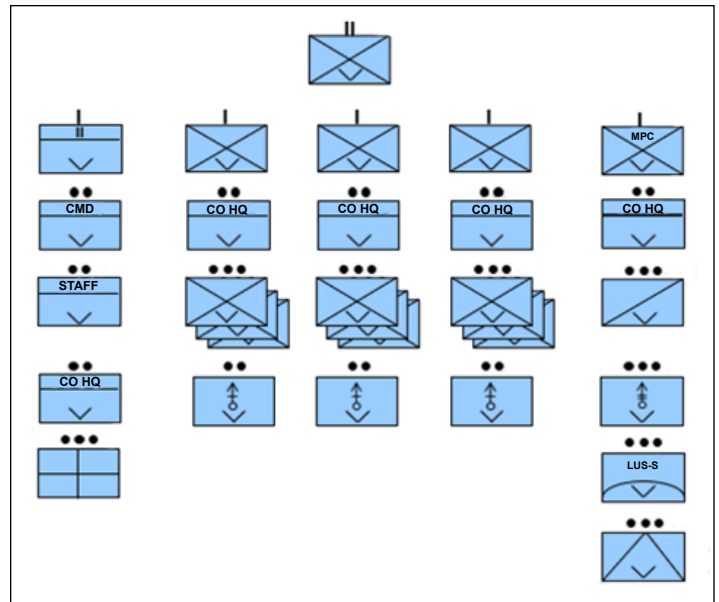


Figure 1 — Mobility Brigade

Soldiers in 2nd Battalion, 502nd Infantry Regiment conduct operations as part of Operation Lethal Eagle 24.1 in April 2024 at Fort Campbell, KY. (Photo courtesy of 101st Airborne Division Public Affairs Office)

Specific ISV Models

The MBDE's task organization highlights the need for tailored ISV models to support this emerging formation. The need for command and control (C2), anti-tank, mortar, and



flatbed modular variants to provide efficient transport of personnel and key equipment is imperative with this new force structure. In this article, we provide explanations and diagrams of each proposed ISV variant to explain the unique requirements and multipurpose capabilities of each formation.

C2 ISV

The C2 ISV would provide companies and battalions C2 on the move with fabricated power supply and communication platforms to quickly transition to long or short halt operations.

Below are the key characteristics needed for the C2 ISV variant:

- Crew: Five-seat ISV
- Total height of ISV with protective shell must stay the same as the standard variant to allow internal loading in Chinook and via sling load. Recommend single- and dual-point sling ability.
- Minimum of one seat required inside back of C2 variant to monitor communication on the move.
- Dual radio mount located in back (2x 158s)
- Mounted Mission Command-Software (MMC-S), transceiver, and KGV-72 located in the back of ISV under a protective shell.
- Keyboard and screen located on a turntable would allow for C2 on the move or halt.
- Rear entrance to C2 area is a hydraulic lift gate to provide cover when at the halt.
- Lift gate can be supplemented with poncho/tarp to provide even more protection.
- MCC-S and other hardware located near front wall to make power routing easier. May have to relocate transceiver to top of hard shell.
- MMC-S screen and keyboard turn 180 degrees to create “standing” desk at back of ISV.
- Radio remote keypad display units and hand microphones are easily relocated to rear when stopped.
- Charging requires 12-volt A/C outlet for net mission planners and USB-C for Android Team Awareness Kit (ATAK) and radio batteries.

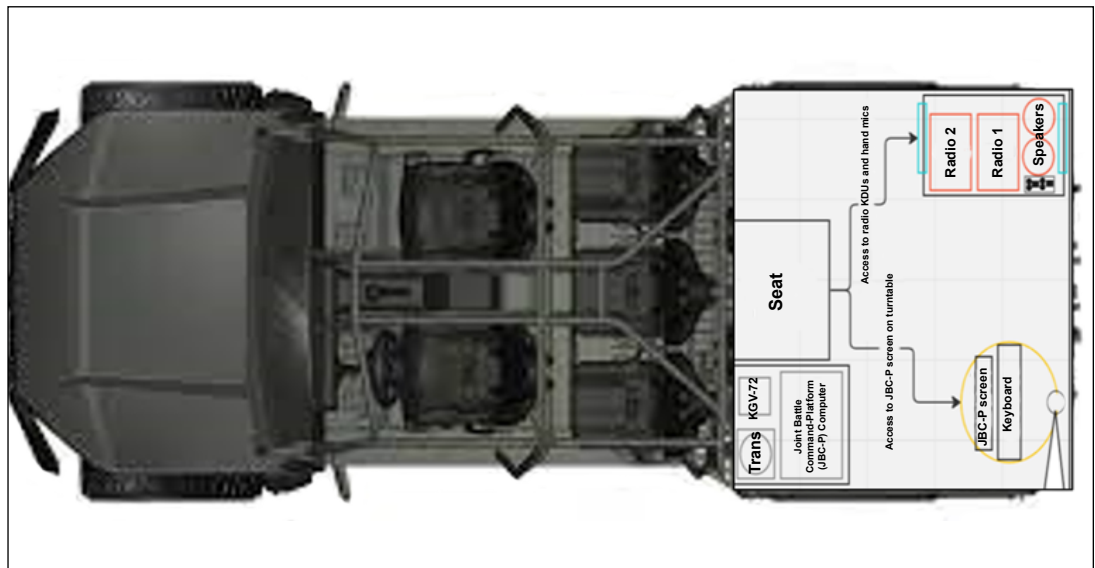


Figure 2 — Command and Control (C2) ISV Variant

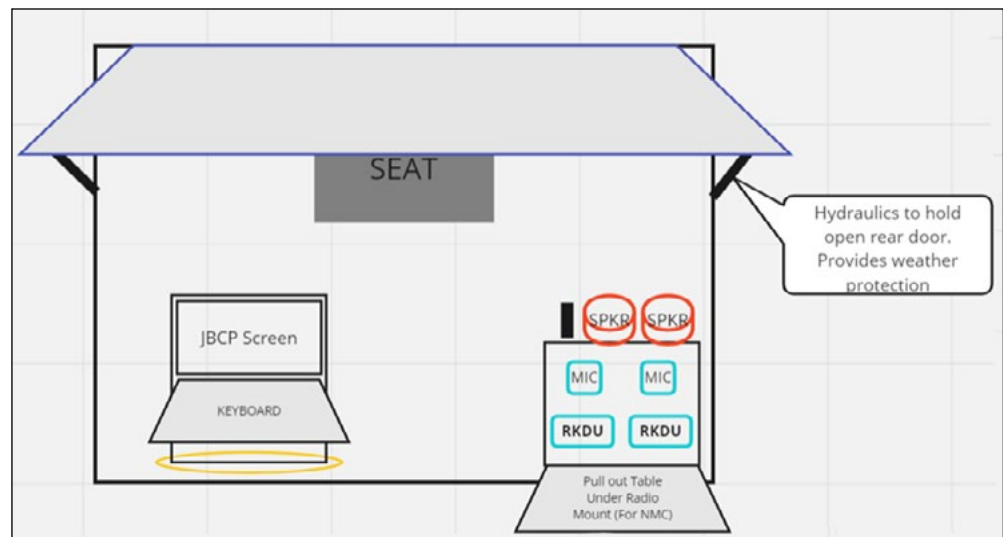


Figure 3 — Rear View of C2 ISV Variant when Parked

Mortar ISV

The Mortar ISV would provide company mortar teams and battalion mortar platoons mobility and a platform to store and transport 81mm/60mm tubes, ammunition, and equipment. This ISV variant will reduce setup and teardown time while also improving the efficiency of fire missions.

Below are the key characteristics needed for the Mortar ISV variant:

- Crew: Four-seat ISV
- Weapon: 1x 81mm system stowed in place of the middle row middle seat. Secured via rubber cup to hold the breach cap Velcroed to the console between vehicle commander and driver with the muzzle secured to ISV frame at eye level by strap and rubber foot.
- Class V: 102x 81mm rounds (12x 8-round fire missions; rear seats removed) or 90x 81mm rounds (11x 8-round fire missions; rear seats left installed).



Figure 4 — Mortar ISV Examples

• No change to height, length, or width of the ISV. This affords the ability to move an entire section (2x Mortar ISV, 1x C2) with a single CH-47.

Anti-Tank (AT) ISV

The AT ISV consists of a fabricated rack to store metal tubes (Javelin/Stinger) in transport. This variant would allow the AT platoon to move as independent sections to support company teams or as a collective platoon effort.

Below are the key characteristics needed for the AT ISV variant:

- Crew: Five-seat ISV
- The tube round rack storage will utilize two metal tubes on each side of the rear of the ISV bed (4x total tubes)
- Each tube will have holes to allow for brackets to be placed in at different heights dependent on the round (Javelin or Stinger).
- Round holder (see Figure 6) will be used to secure rounds and allow for expedient access (follows closely after the M2A3 Bradley).

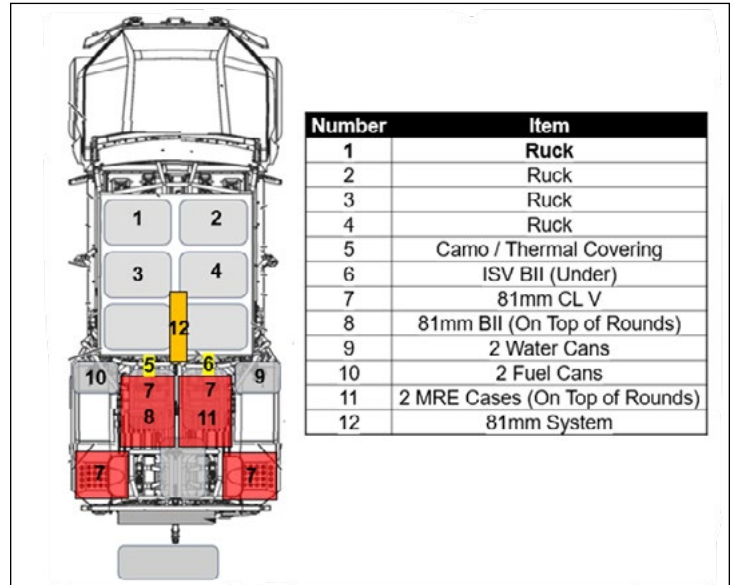


Figure 5 — Example Mortar ISV Layout

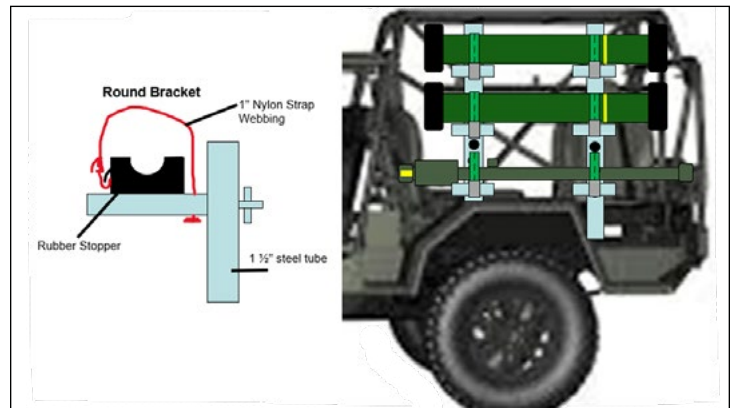


Figure 6 — AT ISV Variant Bracket

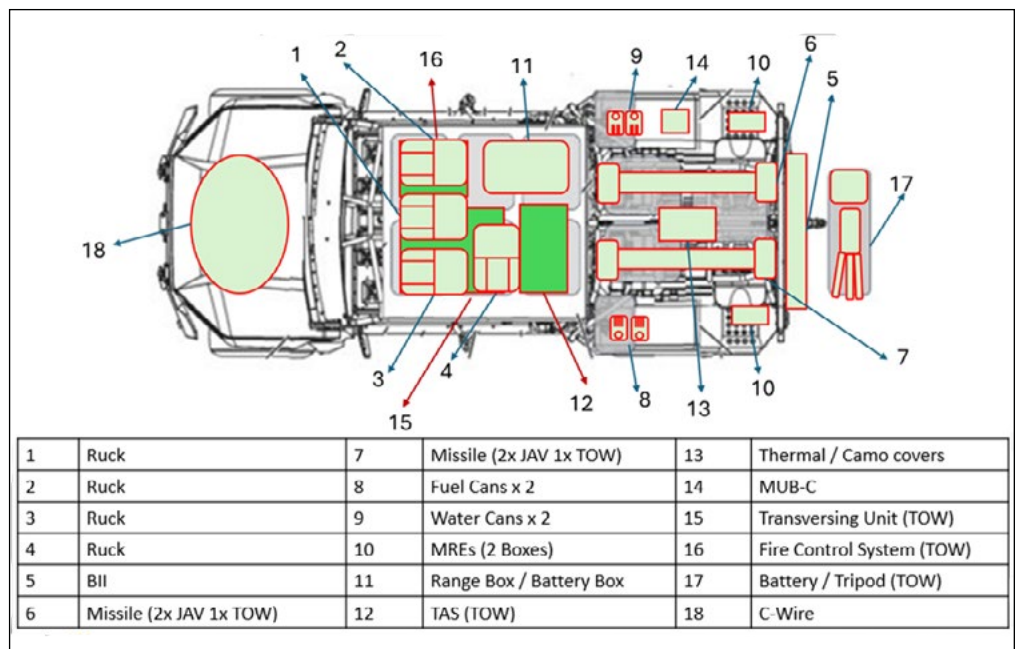


Figure 7 — Example AT ISV Variant Layout

- Vehicle layout provides dedicated location for transversing unit, fire control unit, and tripod to facilitate rapid employment and storage.

Flatbed Transport ISV

The flatbed ISV variant fills the logistics ISV role (LMTV replacement) with additional attachment for modifications of various loads.

Below are the key characteristics needed for the flatbed ISV variant:

- Crew: Two-seat ISV
- Base configuration is a flatbed truck with multiple tie-down points to various load configurations.
- Increased towing capability needed to facilitate water buffalo, trailer, or M777 howitzer.
- A hard cover attachment allows the cargo ISV to sling with equipment loaded, single-point sling configuration not necessarily required. Loaded flatbed ISV will likely exceed the weight limitation for UH-60.
- Tie-down points must be recessed into bed to create a flatbed layout for movement of equipment on and off the vehicle.
- Option to add short, pickup bed-like sides for transportation of loose equipment.
- Option to add hard shell cover to entire bed for weather protection of sensitive equipment.
- Removable sides/shell is not organic to truck; therefore, all flatbed ISVs would be modular and interoperable.

Modular Flatbed ISV Model

The modular flatbed ISV affords units the ability to modify the vehicle platform based on mission and equipment need. At its base, the ISV can transport two or five personnel with the back of the ISV providing a modular platform to add mortar, anti-tank, anti-air, mission command, and transport attachments in various configurations.

Below are the key characteristics of the flatbed ISV variant:

- Crew: Two- or five-seat ISV, adjustable based on the size of the modular section.
- Flatbed sits at tire height with circular attachments spaced evenly across the flatbed to install modular kit.
- Attachments are universal to allow units to modify flatbed to need.
- Attachments for all unique ISVs (mortar, AT, and C2) are available for the modular ISV.
- Modular ISV allows unit to mix capabilities by putting

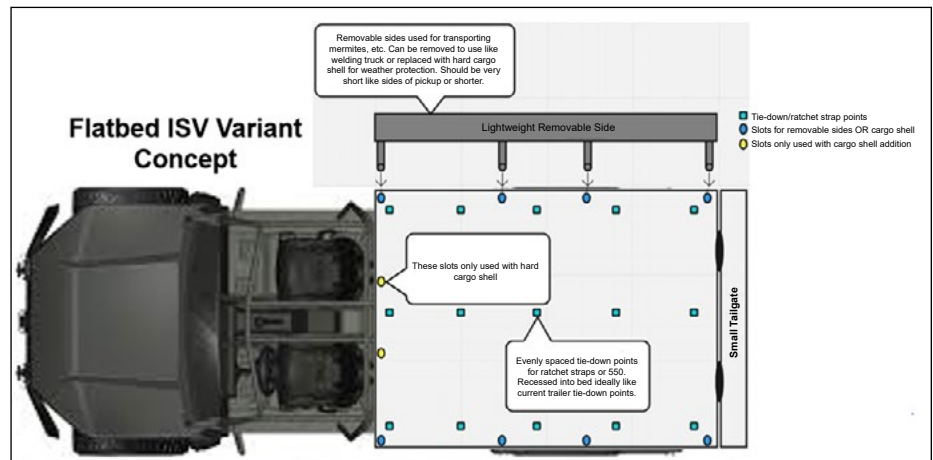


Figure 8 — Flatbed ISV Variant

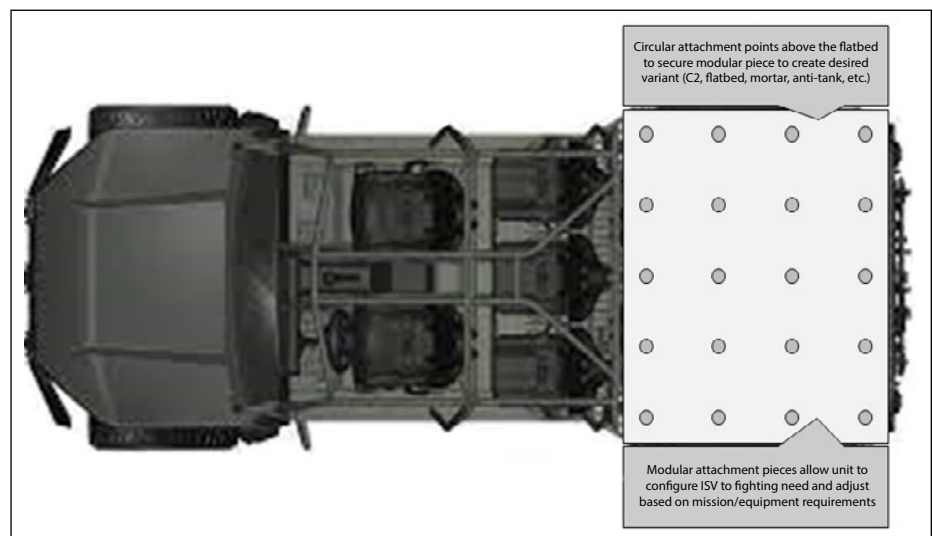


Figure 9 — Modular Flatbed ISV Variant

mortars and anti-tank attachments on one vehicle.

- Modular C2 capability allows units to execute disaggregated operations or split mobile command post and tactical command post operations.

Conclusion

The unique and modular ISV recommendations within this article offer additional ideas to refine the mobility needs for a mobile brigade. These models are not all inclusive to the needs of a MBDE but provide a starting point to modify ISVs to increase the lethality of specialty elements within the multi-purpose company (MPC) and improve mobility for battalion and company operations.

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