

Large-Scale, Long-Range Air Assault Lessons Learned

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In August 2024, 2nd Battalion, 502nd Infantry Regiment, 2nd Mobile Brigade Combat Team (MBCT), 101st Airborne Division (Air Assault), participated in a large-scale, long-range air assault (L2A2) from Fort Campbell, KY, to Fort Johnson, LA. The L2A2 extended over three states and 500 nautical miles for three mission nights to kick off a 10-day brigade force-on-force exercise. This was Task Force (TF) Falcon's third iteration of L2A2 with increasing success along the way. We have learned that L2A2 is an incredibly complex operation that requires an immense amount of detailed planning and coordination to not only conduct the L2A2 but successfully fight and win when no help is coming. Below are highlights of lessons we learned with an emphasis on planning, pickup zone (PZ) operations, Soldier load, and the Infantry Squad Vehicle (ISV) in L2A2.

Planning and Execution

2-502 IN successfully moved 88 percent of its combat power by air assault utilizing 18 CH-47 and 61 UH-60 loads. The unique capability to rapidly move that amount of combat

power sets the 101st apart as the only air assault division in the world. However, every unit encountered issues with inaccurate planning estimates when allocating aircraft to passenger (PAX) and vehicle loads. The primary source was inaccurate planning data from previous L2A2s that did not align with the requirements for this specific mission. As we analyzed this problem, we found that the issue wasn't as simple as a few incorrect planning factors. The ground force began planning with the assumption that loads and configurations validated on previous L2A2s would be authorized for this mission. However, every mission is different, and endless variables change given the mission, enemy, weather, number of helicopter landing zones (HLZs), aircraft available, route planning, and number of forward arming and refueling points (FARPs) planned throughput. This mission included an increased number of HLZs and participating battalions compared to the previous mission (three infantry battalions and a full artillery battalion in this ground tactical force vs only two infantry battalions during Joint Readiness Training Center [JRTC] Rotation 24-03). The higher demand



A UH-60 Black Hawk helicopter from the 101st Combat Aviation Brigade, 101st Airborne Division (Air Assault) sling loads an Infantry Squad Vehicle during a large-scale, long-range air assault operation in August 2024. (Photos courtesy of 101st Airborne Division Public Affairs Office)



for the ground tactical force and dispersed HLZs stressed the planning process. False planning assumptions led to either the loss of available space on an aircraft from loads being underweight or last-second scratches or changes due to loads being overweight. To resolve this issue, it is essential that the ground force and aviation task force come to an early agreement on each aircraft's max load weight, aircraft allocation, and lift serial composition. However, this is not as simple as it seems.

This is challenging for numerous reasons. The ground tactical force and the aviation task force typically have a simple agreement on the planning timeline and synchronization of a small-scale, short-range air assault. The complexity of an L2A2 necessitates parallel planning between the ground tactical force and the aviation task force because one plan does not drive the other sequentially, and both forces have valid limitations and constraints for the other. The ground tactical force needs information such as lift and serial composition by mission night, max load weight of each aircraft, and specific guidance on unique loads to make informed decisions on how to flow combat power onto the battlefield. This is critical to mission success when factoring in sustainment and the increased dispersion of ground units. However, the aviation task force needs a ground tactical plan to build flight plans, which drives the max load weight of aircraft and specific guidance for the ground force.

These planning factors begin to impact the ground force on the long-range portion of the air assault. The tactic for the long range is "PAX heavy" as aircraft cannot carry external loads during the long-range movement. This has significant impacts to the flow of combat power and influence on the ground tactical plan, specifically with ISVs and sustainment. The MBCT with ISVs requires drivers and truck commanders (TCs) for roughly 18 vehicles per company, which equates to about one-third of the combat power in a company. Sending the majority of the PAX early results in a lack of personnel to move the ISVs that make it the mobile brigade. Additionally, due to load limits, UH-60s with an ISV sling-loaded on follow-on lifts had no personnel onboard the aircraft. Furthermore, the unit had to move a majority of our ISVs with limited fuel, no additional load, and no personnel to drive them. In a fight where no help is coming, an ISV with limited fuel and no sustainment package is detrimental to the ground tactical plan and mission of a force built around mobility. The limitation of the UH-60 lift capacity in the L2A2 emphasizes the importance for how the unit prioritizes PAX and equipment based off airframe availability and capability.

UH-60s have a limited capability to move ISVs over distance in a combat configuration that is suitable to sustain combat operations over time. This aircraft is limited in the combat power that it can deliver in a manner that is beneficial to the ground force. Additionally, utilizing CH-47s for an L2A2 alleviates the planning friction caused by utilizing numerous load plans and configurations. For the MBCT, a CH-47 is

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essential to conducting an L2A2. Lastly, sustainment planning during an L2A2 is fundamental to success.

Endurance of the unit is critical to sustaining the fight behind enemy lines. 2-502 IN prioritized sustainment loads early over mobility platforms, but we still could have done better. Formations have the proclivity to move their ISVs in early, but this may reduce the endurance of the unit due to the logistical tail required and inability to overload vehicles if being transported by UH-60s. To be successful for more than three days, units must utilize their allocated aircraft in the early mission nights to move water and ammunition to their area of operations. TF Falcon achieved this by prioritizing A-22 cargo bags of Class I/V, hand-carrying 5-gallon water jugs, and infilling water blivets. This enabled the ground tactical force to continue to fight and build combat power over the three days of operations. Charger Company utilized fabricated water filters from Eagle Werx and conducted emergency resupply with individual water filtration systems. This capability was limited but still played a crucial role in sustaining the fight. There are already many good systems on the market, and incorporating them into our formations would be extremely beneficial.

Water filters at the company level would alleviate sustainment issues and allow units to prioritize combat power over sustainment. For example, the Parker Hannifin H2O Pro system can filter up to 600 gallons a day and has the NATO ports to receive power from an ISV. Adding a water filter that can provide potable water at this capacity is an incredible force multiplier.

PZ Operations

2/101 MBCT tasked the 39th Division Engineer Battalion (DEB) to run the PZ for our L2A2, which allowed the battalions taking part in the L2A2 to be free of the heavy planning and coordination requirements for the PZ. However, when it came to execution, it created several issues for the ground force. The 39th DEB provided crisis action teams (CATs) on the PZ to rapidly troubleshoot frustrated loads, which undoubtedly decreased the number of scratched loads for 2/101 and contributed to our success. However, the ground force was not allowed onto the PZ with the intent of increasing DEB control in a high-risk environment, which in effect limited ground force awareness of actions on the PZ and their flexibility as problems arose. When an aircraft had any



Soldiers from 2nd Battalion, 502nd Infantry Regiment prepare to conduct a large-scale, long-range air assault in August 2024. (Photo by SPC Parris Kersey)

issue, CATs would begin rearranging equipment loads and personnel to ensure the maximum amount of combat power made it on each serial. Each ground unit certainly needed that combat power, but it caused a lot of confusion for both the PZ and landing zone (LZ) teams. The simple solution to this problem is allowing battalion liaison officers (LNOs) on the PZ to battle track equipment/personnel and additionally inform the PZ team on which loads they want prioritized when more than a simple bump plan is required. Our recommendation would be to utilize either the assistant S-3 planner, who made the air movement table, or the operations sergeant major, who has the detailed understanding to make informed decisions.

Two additional notes can assist in situational awareness during the L2A2. One, have a ground serial leader ride with the serial air mission commander. The air crews/pilots were the best way to maintain real-time situational awareness of any frustrated loads or any changes/friction with timelines. This also allowed the ground force commander to communicate any decisions with frustrated loads to stay on timeline or wait for bump of PAX and equipment. The second note is to utilize the PZ tracking application on an end user device. The 39th DEB served as the administrator of the data packages on the app from its PZ MAIN and provided situational awareness to the rest of 2/101 MBCT in real time through the PZ tracking app. However, we experienced several points when the data was improperly entered either by user error or simply a misunderstanding of what was loaded on each aircraft. We recommend using the PZ tracking app along with an in-person LNO at PZ MAIN to verify as redundancy to ensure an accurate picture of the flow of personnel and equipment from PZ to LZ.

A heavy leadership presence is required during load weigh-in, pre-staging, initial manifest call (IMC), and final manifest call (FMC). This should not be the case, but typically the timelines and information regarding these events are not well disseminated to the team executing these tasks. In an operation as complex as L2A2, this can quickly devolve into many small deviations from the plan which then have large rippling effects. IMC is typically conducted separately from the load weigh-in and pre-staging of loads, which can cause conflict when executing the FMC for chalks that have both personnel and loads. In our case, we conducted IMC with the planned number of personnel from the air movement table (AMT), but Soldiers conducting vehicle weigh-in for those same chalks attempted to load their vehicles to the max load capacity of their aircraft. In doing so, Soldiers were unknowingly detracting from the number of personnel that the aircraft could carry as this number was planned against a specific vehicle weight. When units showed up to FMC, their number of allowable personnel suddenly dropped, and it was too late to “de-rig” and “re-rig” the loads, ultimately bumping the personnel to the next mission night or scratching them completely. The solution to this issue is doing the further detailed analysis to ascribe a unit internal max load weight for each individual load separate from the max load of the aircraft. To ensure this is executed properly and ensure these guidelines are being followed during pre-staging, task a Pathfinder-qualified E-7 or higher who understands the impact of being underweight or overweight to assist in helping squad-level leaders prioritize which equipment to add or subtract as secondary loads. Utilizing a unit internal max load ensures the correct number of personnel can manifest



and allows our subordinate units to exploit every last bit of available space possible.

Soldier Load/Configuration Considerations

Temperatures during the JRTC 24-10 rotation averaged around 96 degrees Fahrenheit with high humidity. Movement length was longer than average due to the increased size of unit areas of operation and dispersion of LZs. These things, combined with the challenge of providing the necessary sustainment for the ground force during an L2A2, emphasize the importance of a detailed Soldier load plan. Our companies did several things that made them very successful and had a few recommendations as well.

Charger Company's scheme of maneuver involved three separate ambush sites spread across five kilometers. This required their Soldiers to move with only mission-essential equipment. They utilized a link-up point near the LZ where Soldiers dropped non-essential mission equipment (rucksacks with hygiene, clothes, etc.) and then carried on to their ambush sites. Utilizing a link-up point gave them the added benefit of providing their leaders an intelligence update and confirmation of their task and purpose on the ground as the fight evolved. Establishing a cache at the link-up point required them to be draconian in their approach to managing Soldier longevity through their load. Soldiers in Charger Company loaded mission-essential items in an assault pack and put the rest in a ruck. Upon link up, Soldiers downloaded their ruck and only carried water, ammunition, and communications equipment to their ambush point. The Charger Company headquarters element utilized only two vehicles and a Silent Tactical Energy Enhanced Dismount (STEED) to move sustainment packages to their ambush points. Additionally, they configured the STEED to carry a generator and fuel on the L2A2 to provide power generation for their Integrated Tactical Network (ITN) equipment.

We recommend that for the first night, units prioritize bringing in sustainment loads and only a few vehicles per company. Companies needed their command and control (C2) platform and one to two ISVs to load equipment and sustainment packages onto. The ISV provides the ability to cache supplies and return later for them. This mitigated heat casualties significantly and enabled our companies to make longer movements under lighter loads while still being able to push them necessary supplies.

L2A2 with the Infantry Squad Vehicle

With Soldier load and sustaining the fight in mind, TF Falcon conducted detailed analysis into planning aircraft configurations and selecting what combat power to deliver to

the battlefield during the first period of darkness. We prioritized the ISV over other pieces of equipment. This vehicle is unique to the MBCT and sets it apart from every other brigade combat team in the U.S. Army. It is imperative that ISVs arrive to the battlefield with Soldiers to provide agility, increase the capacity to carry surplus classes of supply, and lighten Soldier load. However, delivering ISVs is a challenge when conducting an L2A2.

The ability to deliver not one but two ISVs to the battlefield with a single aircraft is imperative to the mobility and survivability of the MBCT. The CH-47 is capable of delivering two ISVs internally loaded with up to nine Soldiers. 2-502 IN selected to load the commander's assault command post ISV and the mortar platoon ISV into one CH-47 to deliver the ability to command and control and provide indirect fires on the first lift. This capability enabled the commander to quickly move across the battlefield and deliver fires to support the ground tactical plan. The process of loading two ISVs onto a CH-47 for the L2A2 uncovered several friction points that units should consider before loading the ISV. These include front axle weight, external attachments to the ISV, and cold-load training.

2-502 IN discovered that the front axle of the ISV loaded last into the aircraft must weigh less than 3,000 pounds at weigh in. The CH-47 is unable to close the ramp during a dual-load configuration, and the weight on the ramp cannot exceed 3,000 pounds. At final manifest, the 2-502 assault command post (ACP) ISV's axle exceeded the limit and was unfit to fly in the dual-load configuration. While the ISV was



The 2nd Battalion, 502nd Infantry Regiment's mortar platoon fabricated an 81mm mortar-carrying system that attached to the rear of the ISV. (Photo courtesy of author)



Soldiers from the 2nd Mobile Brigade Combat Team, 101st Airborne Division (Air Assault) create a defensive perimeter around a CH-47 during a large-scale, long-range air assault into the Joint Readiness Training Center at Fort Johnson on 15 August 2024. (Photo by SSG Joshua Joyner)

under the maximum allotted weight, there was not enough weight in the rear of the vehicle to offset the weight of the front axle. 2-502 IN solved this problem by loading extra 81mm mortar rounds to the ACP ISV. The additional weight increased the weight in the rear of the vehicle, which lightened the front axle. This tactic also delivered more mortar rounds to the fight. In the future, units should outfit the last ISV loaded onto the CH-47 with surplus sustainment to deliver supplies to sustain the force and reduce the weight of the front axle.

The 2-502 IN mortar platoon fabricated an 81mm mortar-carrying system that attached to the rear of the ISV. This carrying system enabled the ISV to transport two 81mm mortar tubes, baseplates, and basic issue items on the cage — leaving the rear of the ISV open for classes of supply and gear. Initially, the CH-47 crews were skeptical that it would fit; however, after testing the load two days prior to D-Day, it was certified by the crews as safe to fly. The mortar-carrying system is a combat multiplier and enabled 2-502's mortar platoon to quickly emplace/displace from mortar firing point (MFP) to MFP and establish MFPs in areas unreachable by High Mobility Multipurpose Wheeled Vehicle (HMMWV). The lesson learned is that any external attachments to the ISV cannot be wider than the ISV, add height to the ISV, or add more than 6 inches to the length; they must also be tested with the aircraft crew days before the air assault to allow for modifications. Lastly, TF Falcon recommends that Fort

Campbell add a CH-47 mockup at the flight line for units to test loads prior to execution.

Cold-load training is always a necessity before any air assault. However, it is critical when dual loading an ISV. The configuration constrains air crew members' ability to move and execute their duties inside the aircraft. The Soldiers riding in the ISV must know how to react in the event of an emergency and where to move if needed. Additionally, loading and unloading two ISVs at day and night takes practice to ensure no damage is done to the ISV and aircraft.

2-502 IN will continue to improve on the unique capability to conduct an L2A2 as part of a rapidly mobile force capable of fighting in an environment where no help is coming. Overall, the L2A2 in JRTC 24-10 was successful at scale, but the battalion has much to improve. Strike Force will continue to build upon our air assault planning proficiency to deliver hyper-mobile and lethal combat formations at distance to fight and win in the fiercest conditions.

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