On the Wings of Destiny: Operation Eagle Eclipse and the 101st Combat Aviation Brigade's Future in Large-Scale Long-Range Air Assault Operations

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n the evening of January 13, 2024, the skies of Fort Johnson, Louisiana, erupted as 16 AH-64 Apache helicopters from 2D Squadron-17th Cavalry Regiment (2-17th) "Out Front" conducted a live-fire exercise on a templated enemy position located on Peason Ridge. This out-of-contact spoiling attack, which launched from Fort Campbell, Kentucky, initiated the largest and most overwhelming rotary-wing training operation in recent history. Moments later, 16x CH-47 Chinooks and 22x UH-60 Black Hawks delivered 481 Soldiers, 20 Infantry Squad Vehicles (ISVs), and five M119 howitzers from the 101st Airborne Division's 2D Brigade Combat Team (2BCT), "Strike." Four helicopter landing zones (HLZs) swarmed with Strike Soldiers secured by 10 Apaches from the 1st Battalion, 101st Aviation Regiment (101st) "No Mercy." In one period of darkness (POD), the 101st Combat Aviation Brigade (CAB) "Wings of Destiny," launched 76 aircraft executing 743 flight hours and covering 500 nautical miles (nm), allowing Strike to seize a lodgment against the tenacious and well-trained Geronimo forces of the Joint Readiness Training Center (JRTC). Over the next 36 hours, the CAB air assaulted additional combat power from an

intermediate staging base (ISB) amassing 838 Soldiers, 72 ISVs, 28 High Mobility Multipurpose Wheeled Vehicles, five M119 howitzers, and 23 other vehicles/ trailers, totaling 128 pieces of equipment delivered. The successful execution of Eagle Eclipse was built upon a well-developed road to war and "left of crank" preparations prior to the mission. Moreover, it required innovative sustainment and mission command programs. This large-scale long-range air assault (L2A2)¹ and synchronized out-of-contact attack on key enemy assets ensured the success of Operation Eagle Eclipse and proved the "Wings of Destiny" Brigade is in a unique position to continue pushing the envelope for Army Aviation in the only Air Assault Division (Worley, 2024).

Execution of Eagle Eclipse

Operation Eagle Eclipse was an L2A2 from Fort Campbell to the training area at Fort Johnson. MG Sylvia, the Division Commander, was the Air Assault Task Force Commander. COL Stultz, the 2BCT Commander, was the Ground Force Com-



Figure 1. Task organization for Operation Eagle Eclipse (101st Airborne G5 shop—edited by the 101st CAB).

¹L2A2 is an evolving method of employing AASLT that is not yet codified in doctrine.



Figure 2. Concept of Operation Eagle Eclipse (101st Airborne G5 shop—edited by the 101st CAB).

mander, and COL Cody was the Aviation Task Force Commander (Figure 1).

The operation required four forward sustainment nodes: the forward arming and refueling point (FARP) Marathon in Millington, Tennessee; FARP British Petroleum (BP) in Oxford, Mississippi; mission support site (MSS) Monroe in Monroe, Louisiana; and ISB Alexandria in Alexandria, Louisiana, which contained three separate FARP sites (Figure 2).

The operation began with a spoiling attack of 16 AH-64s from the 2-17th. The 2-17th was tasked to conduct an attack against enemy forces out of close friendly contact, in order to set conditions for the air assault. Through high confidence intelligence, detailed fuel planning, and thorough engagement area (EA) development, the 2-17th's movement and subsequent actions on the objective were swift and decisive, allowing for the air assault to continue on time. The phased attack employed four platoons consisting of four AH-64s each. The 2-17th staggered the departure of each platoon from Sabre Army Airfield, Fort Campbell, armed and refueled at Monroe, and serviced the EA located on Peason Ridge to ensure continuous fires on the objective. Through battle handovers and cumulative battle

damage assessment, the 2-17th verified the destruction of a mechanized reconnaissance unit north of the HLZs, clearing the way for the assault force.

While the attack was underway, eight lifts took off in 30-minute intervals, refueling at the FARP's BP or Marathon before continuing to MSS Monroe. At Monroe, crews refueled and received an operations and intelligence (O&I) update, then flew to one of four HLZs under the security of AH-64s from "No Mercy." Following this initial lift, the aircraft flew to ISB Alexandria to refuel, picked up more Soldiers and equipment, and completed a second lift. The following night, lifts were launched from ISB Alexandria to reinforce the lodgment and complete L2A2 operations for Eagle Eclipse.

Scaling up and out: 101 CAB's Road to war

Operation Eagle Eclipse's scale (in fleet size and distance flown) resulted from a deliberate road to war undertaken by the 101st CAB and the division (Figure 3). In September 2022, the CAB executed Operation Lethal Shadow, a proof-of-concept long-range air assault with 23 aircraft from Fort Campbell to Fort Johnson. Four months later, the brigade validated extended-range fuel systems over a 340-nm mission to Florida with the 75th Ranger Regiment. In February 2023, Operation Ultimate Destiny launched a 32-aircraft air assault (56, including attack and medical evacuation support) from Fort Campbell to Fort Knox, Kentucky, while maintaining aerial command and control (C2). Destiny also employed 2 eight-point FARPs, 1 four-point FARP, and 2 CH-47 Fat Cows (used to refuel other aircraft)



Figure 3. 101st CAB's L2A2 road to war for Operation Eagle Eclipse (101st CAB—edited by the 101st Airborne G5 shop).

²DIRT Days is an "event aimed to involve Soldiers in developing and field-testing new tactics and technology while taking part in challenging, realistic training exercises" (Steelhammer, 2023).



at an expeditionary sustainment node at Wendell H. Ford Training Center (Kentucky). The following month, an exercise known as Driving Innovation in Realistic Training (DIRT) Days² stressed the CAB's sustainment capacity at range, fueling aircraft at FARPs dispersed across four states to exfil Soldiers from Fola, West Virginia.

Following DIRT Days, the division took lead as the unit of action and in August 2023, executed a 150-nm air assault during Operation Lethal Eagle (OLE) III. This operation validated an island-hopping scenario and synchronized CAB and division planners during simulated joint-fires exercises. Immediately following OLE III, the division enabled Task Force Shadow, led by the 6th Battalion, 101st Aviation Regiment (6th-101st), to execute a joint forcible entry exercise for JRTC 23-10. While smaller in scale than Eagle Eclipse, the CAB sustained the operation without drawing fuel from civilian airports. This final exercise validated that the CAB could C2 an L2A2 and sustain it with organic assets, setting conditions for Eagle Eclipse.

"Left of Crank" Preparations Can be the Difference Between Mission Success or Failure

For Army Aviators, "left of crank" means completing mission planning and rehearsals, finalizing maintenance, and identifying and mitigating risk to ensure a successful operation. Destiny employed centralized planning, a surge maintenance program, and an innovative approach to risk mitigation to accomplish the division commander's training objectives.

Critical to Eagle Eclipse's success was dedicated planning at the brigade level. MAJ Boniface empowered a CAB flight lead and flight packet "czar" to ensure deliberate planning occurred with the right subject matter experts and employed a single digital mission packet for the operation. This product—hot-linked to every required document, including performance planning cards, airfield diagrams, and frequency cards—was crucial in ensuring flight crews could easily access information during mission execution.

Well-planned rehearsals also helped ensure success, despite the planning window ending at holiday block leave. Though Destiny returned on January 3 (just 8 calendar days before execution), the CAB's detailed plan-to-plan forecasted time for battalion and air mission commander (AMC) rehearsals. Destiny executed an aviation task force rehearsal (AVN TF RXL) on January 8, followed by a division combined arms rehearsal (CAR) the next day, enabling 2 days for lift and attack battalion-level rehearsals.

Executing rehearsals for missions at this scale underscored the friction between the ground and aviation forces. The CAR terrain model emphasized actions on the objective, yet the AVN TF RXL focused on high-volume air traffic areas, including sustainment nodes and attack aviation EAs. By participating in the CAR, aircrews refined HLZs and EAs for the ground and aviation forces. Moreover, the CAB's sync matrix-driven AVN TF RXL discovered errors in the execution checklist. Ultimately, the CAB's rehearsal was early enough, and the terrain model detailed enough, to enable battalion and aircrew rehearsals.

Aircraft maintenance for an L2A2 requires a deliberate readiness build-up. The measure of effectiveness for scale and range in an L2A2 is the number of aircraft required and the number of maintenance hours available. For a mission of the scale of Eagle Eclipse, the CAB's commanders at echelon directed a maintenance surge, which shifted unit efforts from flight operations to maintenance. For example, the 6th-101st maintenance team minimized flights before mission night, sequenced flight-hour inspections, and pre-positioned assets to sustain multiple lifts and mission nights.

Minimizing flights before the mission reduced the risk of unscheduled maintenance, postured the fleet for follow-on operations, and ensured crew chiefs could focus on maintenance tasks. For Operation Eagle Eclipse, the CAB reduced flying hours 45 days before execution. This tactic took advantage of the holidays but ensured 17 CH-47s and 22 UH-60s launched on mission night 1. Protecting maintenance by reducing flight hours before an L2A2 will be challenging but is necessary to build the required combat power. The more rotary-wing aircraft fly, the more likely there will be unscheduled maintenance, which could limit aircraft availability. Commanders must also balance assets for future operations. In a single L2A2 mission night, a company expended about 10 percent of the hours of a phase maintenance inspection, reducing the unit's ability to project combat power over 14 days. Minimizing flights can ensure the unit is postured to continue operations following an L2A2.

Sequencing flight hours and interval inspections—the art and science at the heart of aviation management—was also useful. Technical Manual (TM), 1-1500-328-23, "Aeronautical Equipment Maintenance Management Procedures," for example, lays out the science (and regulatory guidance) of how to execute these procedures (Department of the Army, 2014). The art comes from maintenance managers who operationalize inspection intervals to maximize flight hour duration. During Eagle Eclipse, production control teams coordinated and aligned maintenance actions and priorities 45

days from mission execution. This effort made it feasible to order and install parts, resulting from common inspections that historically incur downtime, well in advance. The 6th-101st, for example, executed six CH-47 160-hour inspections in the 45-day window before the mission. This sequencing allowed maneuver companies to minimize flight hour limitations and maximize the range capability during the L2A2.

Pre-positioning maintenance assets at key logistical hubs allowed the CAB to execute contingency and planned maintenance and should not be overlooked for future L2A2 operations. At Monroe, maintenance teams from the 96th Aviation Support Battalion (ASB) repaired the CAB's 17th Chinook and returned it to the fight during mission night 1. Moreover, SGT Day's team at Alexandria completed four UH-60 torque checks following that evening's lifts, ensuring these Black Hawks would be ready for mission night 2. Aircraft require an exorbitant amount of support equipment and Class IX (repair) parts, and positioning these assets at established FARP sites was critical for the success of Eagle Eclipse.

Capturing and mitigating operational risk was also central to planning for Eagle Eclipse. Combat aviation brigade planners recognized that 7 hours of flight within a 12-hour duty day would not meet the brigade's obligations to the ground force. The brigade standardization team, led by CW5 Trail, CW4 Koeppen, and SFC Gravitt, developed an adjustment to the aviation standard operating procedure, signed by COL Cody.3 This adjustment extended the aviation duty day to 14 hours and authorized 9 hours of day flight, 8 hours of combination flight, and 7 hours of night vision device flight for each day of the mission. To mitigate the increased risk, COL Cody met with AMCs and missions briefing officers and approved risk assessments at his level. He dictated that crew members who exceed 28 hours in duty day or 16 hours of flight time became "high risk" until they could take a 24-hour reset. Crew members who received extensions on both mission nights would be designated "extreme-high risk" until they executed a 24-hour reset.

The brigade standardization team also sought to codify tactics, techniques, and procedures for unique loads to manage risk, as sling load publications (with lists of standardized loads) have yet to keep pace with new equipment fielding. The manuals for helicopter sling loads (TM 4-48.09, TM 46-48.10, and TM 4-48.11), for example, are all over a decade old. This delay places the onus for rigging procedures on CABs, increasing risk.

To standardize these unique loads, COL Cody signed Aviation Standardization Bulletin 23-04, which delegated the approval for unique slings loads with external load rigging procedure cards (RPCs) to a moderate risk approval authority. MG Sylvia further approved a memorandum dated January 5, 2024, assessing seven unique loads, including ISVs in various configurations, as



Figure 4. Example RPC showing two "Shot Gunned" ISVs (101st CAB Standardization Shop).

³The aviation standard operating procedure, Aviation Standardization Bulletin (23-04), memorandum dated 5 January 2024, and revised 101st Airborne Division (Air Assault) Gold Book, may all be obtained by contacting the 101st CAB.

low risk. These loads have RPCs, which include required materials, preparation, rigging steps, and common deficiencies (Figure 4). Approved less than 2 weeks before Eagle Eclipse, this memorandum's delegation of risk approval streamlined mission preparation and execution.

In addition to standardizing external load procedures and risk approval, the brigade developed loading plans for dual-ISV internal loads (Figure 5). After multiple frustrated loads during the division's Operation Destiny Phoenix (2 months before Eagle Eclipse), CH-47 crews from the 6th-101st worked with partners in 2BCT to develop and rehearse a dual-ISV load that maximized ease of loading, safety, and cargo space. Further refined with comments following Eagle Eclipse, this standardized load procedure is set to serve the division for future L2A2s.

Sustainment at Scale

Redundant sustainment defined Eagle Eclipse. At Sabre and Campbell Army Airfields, dedicated launch teams (with maintenance, refuel, and communications packages) stood by for support. On launch, aircraft flew to the FARP's BP or Marathon but could divert if either were fouled. The FARP BP, run by the ASB, was a 12-point FARP; whereas, the Marathon was airmobile, led by the 6th-101st Forward Support Company (FSC). The FSC loaded two Heavy Expanded Mobility Tactical Trucks (HEMTTs), two 250 gallon-per-minute pumps, three 3,000-gallon fuel bags, and a tactical aviation ground refueling system into a C-17 at Fort Campbell 2 days before mission execution and flew them to Millington. After unloading, the C-17 fueled the HEMTTs to establish a six-point FARP.

Whether taking off from the FARP's BP or Marathon or bypassing these sites for MSS Monroe, all aircraft stopped in Monroe. Monroe issued 149,000 gallons of fuel using 18 HEMTTs and two Tactical Refueling Tank Rack Modules (TRMs) with separate refuel teams for each airframe. UH-60 and CH-47 ramps facilitated space for aircraft bumps, and the 28 AH-64s parked near their own FARP for live arming. Prepared at each ramp was a maintenance contact team and Downed Aircraft Recovery Team (DART) with a UH-60 on standby to assess aircraft requiring maintenance en route from Fort Campbell. Aircrews received tailored O&I briefs over Android Team Assault Kits for Military (ATAK-MIL), and battalion commanders traveled to the brigade tactical operations center (TOC) for in-person mission updates.

The forwardmost sustainment node at ISB Alexandria serviced aircraft with 3 four-point FARPs. Two pickup zones (PZs) for lifts two through nine were co-located at Alexandria Airport. The FARP Exxon employed 16 HEMTTs and six TRMs. The brigade main command post pro-



In an Aviation Digest article on aviation sustainment in Large-Scale Combat, the author noted that "logistics will be the key component for success in aviation operations" (Glover, 2024, p. 15). Eagle Eclipse proves this point. For subsequent iterations of L2A2s, resupplying sustainment nodes and protecting these critical pacing items must drive greater integration with air defense and joint assets. While the CAB's footprint collapsed to Alexandria for enduring operations, it is foreseeable that the mission could require dispersed sustainment nodes for extended periods to reinforce the lodgment and secure lines of supply and communication for follow-on operations. These considerations will be tested in future iterations at Fort Campbell, where the division will execute another L2A2 and continually support Soldiers on the ground via heliborne resupply and fires.

Mission Command and C2 in LSCO

Eagle Eclipse's scale required the division to define who owned which fights. The CAB empowered leaders at various locations to do the same. In the air, command relationships were straightforward, an anomaly

> for a brigade shaking off the multifunctional aviation task force (MFATF) mentality of recent deployments. Troop and company commanders were lift-or-attack weapons team AMCs, and flight battalion commanders served as AMCs for their units. To maintain a common operating picture for this dislocated force, the AMC's primary method of over-the-horizon digital traffic was the ATAK-MIL, which allowed immediate situational awareness and digital O&I updates.

Combat aviation brigade personnel at five ground nodes fell under an officer-in-charge (OIC),



Figure 5. Proposed dual-ISV internal load diagram (modified slightly from the format used during Eagle Eclipse) based on after-action review comments from aircrews and the ground force (6th-101st General Support Aviation Battalion shop).



MG Brett Sylvia, Commanding General of the 101st Airborne Division, gives his opening remarks during the Division Combined Arms Rehearsal. Photo by CPT Austin Lachance.

who tracked mission progress and directed maintenance, refueling, and contingencies during the operation. The brigade executive and operations officers oversaw the CAB's two critical nodes at Monroe and Alexandria. As the aircraft departed from home station, AMCs reported to the brigade operations cell at Fort Campbell. After the aircraft passed Oxford or Millington, the TAC at Monroe assumed control of the fight and tracked aircraft until they departed for the objective. Once clear of Monroe's airspace, the main command post at Alexandria owned the fight for the mission's duration.

Destiny synchronized its efforts with the division support brigade (DSB), which tracked and reported node statuses. When diversions due to weather resulted in unanticipated fuel requirements, the DSB (whose command post was collocated with the TAC) linked in with the CAB's Assistant Operations Officers (AS3s), node OICs, and support operations officer cell to assess mission impacts. Aircraft maintenance concerns were reported to MAJ Haynes, the Company Bravo 96th ASB Commander and DART OIC, who owned sourcing the appropriate maintenance solution.

Ultimately, the CAB's employment of battalion field-grade leaders, especially in the "push package" at Fort Campbell and augmentation at Monroe, enabled mission command and streamlined C2. Combat aviation brigades executing similar operations in the future should note this technique.

Conclusion: L2A2s and the Future Fight

In his opening remarks of the 2023 revised 101st Airborne Division (Air Assault) Gold Book, MG Sylvia stated that the division's goal was to "fly 500 nautical miles in one POD, in any environment to endure for 14+ days and win." Operation Eagle Eclipse highlighted how far we have come, flying 500 nm and moving a battalion-plus-sized force onto the objective. We captured incredible data from this operation, and after-action reviews highlighted friction, generated solutions, and inspired future training.

Some of the lessons the CAB learned were critical. Aerial C2 at the brigade level for an L2A2, for instance, cannot be overstated. In smaller air assaults, the MFATF commander might lead as an AMC with one of their field-grade leaders in support. It was apparent to those who participated in Eagle Eclipse that the operation needed multiple aerial C2 nodes fed through voice and digital communications from AMCs and command posts. Dispersed sustainment nodes must also include a diverse resupply plan. Like a Primary, Alternate, Contingency, Emergency, (PACE), plan with four distinct communication systems or frequencies, four or more FARPs will require innovative methods to maintain. Training



Crew chief from 6th-101st GSAB supervises the loading of a second ISV into a CH-47 at Campbell Army Airfield. Photo by CPT Austin Lachance.

airmobile FARPs gave the 6th-101st's FSC firsthand experience with joint refuel capabilities they will likely see in an island-hopping fight. Limitations previously not considered, such as wet wing refuel (wing structure is sealed and used as a fuel tank) rates, are now codified into Destiny's sustainment procedures.

The future of L2A2 operations is the future of LSCO for Army Aviation. The missions executed during Operation Desert Storm and the opening days of Iraqi Freedom can serve as a guide. Yet, air assaults of the scope and scale of an L2A2 require deliberate attention from leaders experienced in operations like Eagle Eclipse. For L2A2s to be a suitable, acceptable, or preferred option for combatant commanders seeking a lodgment, Army

Aviation owes the ground force, Army leadership, and aircrews particular emphasis in future training. We must train like we fight—flying lower, at night, in formation—and with covert lighting (an acknowledged challenge in the contiguous United States). We must also innovate our Sustainment Enterprise, so our long-range ambitions do not rapidly outpace our refuel and rearm capabilities. Fuel is the lifeblood of a CAB, and leaders must emphasize the modularity, survivability, and adaptability of our sustainment nodes. Finally, we must drive doctrine that will outlive the aircraft for which it was created. Eagle Eclipse has set conditions for the future of L2A2 operations, and the Wings of Destiny team is ready to answer the call.

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MAJ Sean Boniface is the Brigade Operations Officer for the 101st CAB and an AH-64E PC/AMC. During Eagle Eclipse, MAJ Boniface controlled the 101st CAB TAC for this Operation at Monroe, Mississippi.

COL Clinton Cody is the Brigade Commander for the 101st CAB and was the Aviation Task Force Commander for Eagle Eclipse.

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