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THE EMERGENCE OF AERIAL DELIVERY AS A
ROUTINE METHOD OF RESUPPLY
(VERSUS ITS TRADITIONAL EMERGENCY ROLE)

An Individual Essay

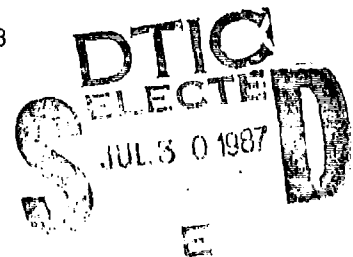
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ABSTRACT

AUTHOR: Robert W. Mortis, LTC, QM

TITLE: The Emergence of Aerial Delivery as a Routine Method of Resupply (Versus Its Traditional Emergency Role)

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Aerial delivery (airdrop) is a method of resupply. However, there are those who consider it a method of supply delivery, thereby categorizing it as a method of transportation. Doctrinally, airdrop is a quartermaster functional responsibility and is designated as a primary field service, as is laundry and bath, graves registration and bakery services. Airdrop has long been considered as a means of emergency resupply only, and with good reason. Aircraft availability within a theater will be extremely limited; costs in terms of quantities of supplies/equipment that can be effectively delivered; the vulnerability of aircraft in a hostile environment; and the lack of materiel handling equipment to facilitate recovery operations are but a few of the substantial constraints that limit airdrop to an emergency resupply role. However, changes in operational/tactical warfighting and the very nature of the geographics in anticipated theaters of operation have caused tacticians as well as logisticians to relook the most effective means of sustaining the fighting force. The lack of adequate road and rail networks, no inland waterways and shortage of tactical wheel vehicles indicate that aerial delivery may be the only reliable means of logistically sustaining the force. Research and development, force structure, logistical doctrine, personnel requirements and training in the airdrop arena are being enhanced to satisfy combat service support requirements in a hostile area of operations.



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The Emergence of Aerial Delivery as a Routine Method of Resupply (Versus Its Traditional Emergency Role)

The purpose of this paper is to review the traditional role of airdrop, examine the transition that is taking place in this primary field service and to project what the future holds for this invaluable service.

Though aerial delivery operations date back to the fifties, it really was not used extensively until the Vietnam era, more specifically, the period 1966 through 1971. During this time, the 109th Quartermaster Company (Air Delivery) was primarily responsible for air delivery operations in support of combat forces. There were other units in the theater that possessed the capability to provide organic rigging support for their commands, e.g., the 82d Airborne and 101st Airborne Divisions each with an aerial delivery company, the 173d Airborne Brigade with a platoon-sized element and the Air Force, Marine Corps and Special Forces with only a limited capability. This force structure, though extended beyond its capacity at times, was sufficient to satisfy requirements. The support requirements in Vietnam were unique in that tactical operations were primarily defensive in nature; US/South Vietnam forces maintained air superiority, there were three major airfields from which to support airdrop operations (Bien Hoa, Cam Ranh Bay and Da Nang) and, finally, sustainment of deep strike operations were only visions in the minds of our most perceptive leaders during this era. The point being made here is that sustainment and/or aerial

delivery support operations were relatively simple and for the most part uneventful, from a threat standpoint.

In contrast to the airdrop operations described above, the Airland Battlefield is characterized as being highly lethal, volatile and mobile as described in FM 100-5.¹ The enemy's capability to locate and disrupt the logistics flow to forward units must be planned for a realistic problem. The enemy's potential for damaging/destroying airfields, its capability to interdict lines of communication and its high potential for use of nuclear, biological and chemical (NBC) munitions require maximum exploitation of supply delivery systems. These are significant threats to force sustainability for which appropriate responsive measures must be taken. Likewise, the recognition that low intensity conflict (LIC) is , and will continue to be, the most likely form of conflict affecting the US Army in the foreseeable future, mandates that an airdrop resupply capability be put in place now, for immediate sustainment of the force.

As mentioned earlier, current combat service support (CSS) doctrine states that airdrop is a primary field of service which is required at the onset of hostilities. However, according to Total Army Analysis 93, only 14 percent of today's airdrop force structure is found in the active component, thus severely limiting the feasibility of these units' availability at the onset of hostilities. Presently, no company-sized airdrop unit is stationed or deployed in an overseas theater and the relatively low priority of airdrop units on the Time-Phased Force Deployment

List (TPFDL) renders them ineffective as responsive CSS assets. Therefore, the Army's current airdrop doctrine and operational concept are not supportable within the composition of the current force structure. Airdrop units must be organized, equipped, manned, trained and positioned in a manner in which they will be able to accomplish their mission in an NBC environment, in a conventional warfare environment, and in the support of the low intensity conflict, all at the onset of hostilities.

The airland battle doctrine of employing massive firepower in combat creates a requirement for total responsive ammunition resupply support which, in emergencies, could only be provided by airdrop operations. Other classes of critical supply will also require timely delivery which could best be provided by airdrop. Providing adequate logistical support to this dynamic, high mobility combat force will present a challenge unparalleled in past conflicts. Consequently, there will be a greater reliance on airdrop support to sustain the force.

Current airdrop capabilities are severely limited by (1) a totally inadequate force structure, and (2) operational, organizational and equipment deficiencies/short falls. The current operational requirement which specifies minimum release altitudes of 600 feet for container delivery systems (DCS) and 750 feet for platform loads is inconsistent with today's threat environment. The high potential threat to aircraft survivability dictate that existing minimum release altitudes be decreased to approximately 300 feet. Logistical aircraft altimeter modifications and the fielding of the C17 will facilitate achieving the new minimum.

The combat environment for this concept is global in nature. It transcends the spectrum of the various types of terrain and conditions in which combat takes place. It includes low, mid and high intensity conflicts with consideration for either short or long mobilization notification. It also considers logistical operations to support combat in day and night operations conducted in conventional, unconventional, and NBC environments. The location and conditions of the battlefield dictate the location and type of airdrop operations required. Adverse weather, generally, impedes airdrop resupply; however, unfavorable weather conditions will have less of an impact on airdrop operations with the enhancement of existing and the development of new airdrop systems.

Shortfalls and deficiencies cited above are only examples of areas to be rectified. Additionally, the inability to extract and drop equipment in segments of two or more platforms, inadequate capability to airdrop loads weighing more than 35,000 and inadequate capability of airdrop companies to lift/rig heavy loads at remote rigging sites are examples of additional deficiencies which impact on airdrop operations. With airdrop operations considered for emergency implementation only, the above shortcomings may not be categorized as critical; however their taking on a routine/normal resupply role dictate that these deficiencies be corrected. In the following paragraphs, this will become all too apparent.

The transitioning role of airdrop operations is compatible with the thrust and basic principle of airland battle doctrine. Airdrop operations provide a support capability without which the

Army's ability to fight in accordance with the four basic tenets-- initiative, agility, depth and synchronization--would be seriously jeopardized.

In the paragraphs above, shortfalls and deficiencies in the current airdrop support arena were highlighted. Many of these are being corrected; others are being addressed in longer-ranged correction processes, i.e., force structure and research and development initiatives.

It is highly unlikely that the force structure/composition for airdrop units will change in the near future nor will their priority for development be upgraded in the TPFDL. Therefore, other means to effect the availability and responsiveness of these units to support combat operations must be implemented. The redesignation of Echo Company, 407th Supply and Service Battalion, 82d Airborne Division as the 510th Airdrop Supply Company and its transfer to 1st Corps Support Command (COSCOM) is the most significant force structure initiative to date. Grated, the 510th was attached back to the 82d Airborne Division to provide airdrop support during peacetime; however, this unit is now a Corps asset which can be deployed as a nondivisional asset in support of the Corps when employed as such or be assigned to the Theater Army Area Command (TAACOM). When employed by the Corps, it will provide organic airdrop support and support to other theater units as directed by the COSCOM. When assigned to the Theater Army, it will provide primary airdrop support to those echelon above corps (EAC) units and backup support to corps units as required. This arrangement should not adversely affect the 82d Airborne Division

because once deployed, their airdrop requirements can be satisfied by the Corps and their airdrop company, which was expected to be underutilized, will be gainfully employed in its expanded role.

Additionally, a logistical support structure, whereby a theater commander can request strategic airdrop support from CONUS is needed for emergency sustainment of the force. Likewise, initial resupply of contingency forces and/or LIC operations will most likely require strategic airdrop support from CONUS pending the establishment of an airhead. To satisfy this need, parachute rigger personnel (Civilian and military) will be trained and assigned to selected CONUS depots for the purpose of rigging, shipping and reconstituting supplies and equipment that are required for strategic airdrop. Additionally, as an added bonus, economic benefits will be realized through the implementation of a system which requires large cargo parachutes to be prepacked by the manufacturer or at the depot by civilian rigger personnel.

Several assumptions must be made to support the above cited requirement for strategic airdrop: (1) Light Infantry Divisions will be committed to logistically poor areas; (2) existing logistics facilities and prepositioned in-country stocks will not be available; (3) units will deploy by airlift with a maximum of 72 hours of sustainability; and (4) initial resupply will rely on airlift or airdrop.

The basic concept for strategic airdrop is to preposition and prerig selected classes of supply (Classes I, III, V and Water) at designated CONUS depots. Loads will be preconfigured by combat battalions making maximum use of A-22 airdrop containers (2,200

pound load carrying capacity). Though these prerigged stocks are designated for the light infantry divisions, they may be extended to other type units. The concept, however, is not new; it is an expansion of an existing system that provided initial support for the 82d Airborne Division units in Grenada.

Another indication of the airdrop role transition was the development of airdrop resupply planning factors. These planning factors were developed by the Quartermaster School (QMS) in response to an issue identified in the December 1983 Logistics System Program Review for the Army's Vice Chief of Staff and subsequently published in the revision of FM 101-10-1. These planning factors are used in contingency plan development, OPLANS and during training exercises to quantify airdrop workload and force structure requirements. As expressed by Major General Eugene L. Stillions, Jr., in his 14 January 1986 letter to the field, subject: Airdrop Planning Factors, the driving force for the QMS development of these planning factors was the anticipated increased reliance on airdrop to meet the requirements of the airland battle and to support the light infantry divisions. These planning factors can be further used to develop airdrop equipment stockage levels, aircraft requirements, air delivery methods and equipment recovery rates.² The point being made here is that never before has airdrop resupply planning been as detailed or as sophisticated. Though the use of these factors is not difficult nor are computations complex, personnel knowledgeable in parachute rigger operations, i.e., 92d (Air Delivery Officer), 401A (Air Delivery Technician)

and/or 43E3/4P (Parachute Rigger Noncommissioned Officer) would better articulate unit requirements. Therefore, the Quartermaster School has pursued another initiative which is to have an Air Delivery Officer assigned to staffs at separate brigade, division and levels above.

Additionally, the Quartermaster School has been resourced in FY87 to write airdrop request procedures which are to be incorporated into the Army Training and Evaluation Program as a common task. Again, the emphasis points to a more routine use of air delivery.

As stated previously, and the major thesis of this document, the emergence of airland battle doctrine coupled with the activation of light infantry divisions has resulted in the increasing importance of airdrop resupply in the supportability of the force. There are also doctrinal publications where increased reliance on airdrop is dictated:

- FM 100-5, Operations
 - Aerial resupply may also be necessary to support a large-scale movement to contact or to maintain its momentum.³
 - If possible, parachute drop or helicopter lift will resupply the encircled force.⁴
- FM 100-10, Combat Service Support
 - Field services include airdrop which is a primary field service. Primary field services are considered essential to the support of combat operations. In the past, field service elements were slowly geared up to meet demands . . . , in the next war they must be trained, equipped and prepared to accomplish their mission at the onset of battle. This is particularly true of the primary field services⁵
 - Airdrop is essential in that it provides a method of supply delivery that is responsive and rapid enough to meet the demands of modern battle.⁶

- FM 100-16, Support Operations, EAC
 - Airdrop services are provided by specialized airdrop units assigned to the Area Support Group of the Theater Army Area Command.⁷
 - Contingency echelon above corps field services are split into two groups--essential and nonessential. Essential services include airdrop and Graves Registration. Airdrop services are provided during the deployment and transition phases.⁸
- FC 42-27, Forward Supply Company, Supply and Transport Battalion, Light Infantry Division
 - "If airdrop resupply is required, it will be provided by corps airdrop units. The small amount of supplies carried by light infantry division units will increase reliance on airdrop as a means of resupply."⁹
- FC 63-2-1, CSS Operations - LID.
 - DA Form 2028, dated 18 September 1985, recommended the addition of the following on p. 4-2: "Initial sustainment of the light infantry division may require selected supplies to be delivered to the division support area, the brigade support area or battalion/company areas by airdrop. Selected supplies will be prerigged for airdrop and held within the CONUS wholesale base for delivery, upon request, by authorized units. (NOTE: This concept was approved by the VCSA on 3 September 1985 and was described earlier in this document.)"
- TRADOC Pamphlet 525-48, US Army Operational Concept for Logistics Support in a Nuclear, Biological and Chemical (NBC) Environment: Air Delivery/Airdrop
 - Requirements for air delivery significantly increase on the nuclear/chemical battlefield. Air delivery expedites resupply and allows swift means to bypass contaminated areas. All air delivered supplies should be checked for contamination.¹⁰
- Memorandum of Agreement between the Training and Doctrine Command and the Military Airlift Command, dated 9 May 1985, Subject: Airdrop Altitude and Airspeed
 - "Current Airland Battle Doctrine and emerging concepts, coupled with the increasing number of Light Infantry Divisions (Army), may significantly increase reliance on airdrop as a means of resupply." (p. 1)

The publications cited above all indicate an increased reliance on airdrop in support of the airland battle and in support of the light infantry division. The fact that so much recently has been written about the increased reliance on airdrop is remarkable because airdrop is discussed as seemingly available on a routine basis in numerous 29-series, 63-series field manuals and in FM 71-100, Fm 71-101 and FM 100-27.

In the research and development arena, greater emphasis is being placed upon high speed, low altitude delivery to support combat sustainment operations. This emphasis is essential to improving logistic aircraft survivability in a volatile combat environment.

The enhanced container delivery system is being developed to deliver up to 2,000 pounds from an altitude of 300 feet above ground level (AGL) at a speed of 120-150 knots. This system has been successfully tested by the Airborne Board at Fort Bragg from 400 feet AGL. The higher speed and lower altitude will align supply drops with personnel airdrop capability of the newly developed Tactical Assault Personnel Parachute (TAPP).

The Low Altitude Retro-Rocket System provides a soft landing system that can deliver up to 60,000 pounds of supplies and equipment from altitudes of 300 feet AGL and airspeed between 120-150 knots. This system would be excellent in resupplying the DSA or BSA or in the equipment replacement process.

The last system to be discussed is the Gliding Decelerator System which allows for the delivery of containerized supplies/

equipment from an altitude of up to 30,000 feet, placing the aircraft far above the range of ground fire. This system is keyed to an electronic transmitter that is colocated with the unit to be supported. The unit positions the transmitter at the desired location of resupply. Once the bundle is released, the homing device is activated and the container with its special configured parachute glides in on target. This system is ideal for units cutoff from their support base in direct contact with the enemy or in geographically restricting areas.

The above systems were designed and developed to meet emerging needs and the fact that system application would be generic to any military force, again supporting the changing role of airdrop from emergency to routine.

In conclusion, there is no question that airdrop resupply has been considered an emergency operation only and that airdrop planning has eroded over the years in commands outside of XVIII Airborne Corps and, as a result, airdrop requirements have not been documented very well. This lack of documentation has adversely affected force structure, a condition from which the airborne community is slowly recovering. Airdrop has become a vital field service in view of the development and activation of light divisions, airland battle doctrine with its emphasis on deep attack and with the commitment of forces to logistically poor areas. It has been supported in this document that airdrop is an essential service for battlefield survival and operational success; therefore, airdrop support in a highly flexible, rapidly changing combat environment cannot be

provided in an ad hoc manner. It must be fully integrated in the overall combat service support package. Detailed planning and determination of requirements must be accomplished because envisioned battlefield conditions as extensively supported above, mandate the requirement for routine/normal aerial delivery resupply of supplies and equipment versus a traditional emergency requirement based on enemy contact/activity. The airborne community, especially aerial delivery personnel, recognize this significant transition; hopefully now, others will too.

ENDNOTES

1. US Department of the Army, Field Manual 100-5, pp. 2-3 (hereafter referred to as "FM 100-5").
2. Eugene L. Stillions, Major General, US Army Quartermaster School, Letter to MACOM Commanders, 14 January 1986.
3. US Department of the Army, FM 100-5, p. 9-3.
4. Ibid., p. 13-2.
5. US Department of the Army, Field Manual 100-10, p. 9-2.
6. Ibid., p. 9-2.
7. US Department of the Army, Field Manual 100-16, p. 6-79.
8. Ibid., p. 6-101.
9. US Department of the Army, Field Circular 42-27, p. 1-3.
10. US Army Training and Doctrine Command, Pamphlet 525-48, p. 15.

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