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ABSTRACT: This article advises Army leaders to return to previously successful strategies of influence to articulate a collaborative vision for the future of air mobility. By underscoring the requirement for multiservice capabilities to deliver personnel and matériel wherever they are needed, US air mobility can once again become a strategic force multiplier.

The capability of transporting matériel and personnel remains essential to the US Army's effectiveness.[1] Likewise, maneuver momentum—mass x speed—remains a relevant element of national defense as Army operators and defense planners make the necessary provisions to get land forces where they need to go, when they need to go there, and with the necessary momentum. Accordingly, this article addresses two questions regarding American air-mobility forces. First, can the present and future US Air Force airlift force structure support existing and emerging US Army movement and maneuver requirements? Second, should the Army address its mobility concerns passively, by declaring its requirements and hoping the Air Force will come up with appropriate forces, or assertively, by involving itself more deeply in all details of airlift force structure planning? The importance of these two questions is obvious given the integral role of inter- and intratheater air mobility in most Army warfighting concepts. Ultimately, the Army's vision of itself as a global response force, able to conduct rapid and agile "expeditionary maneuver" over strategic and theater distances, is compromised by shortfalls in our nation's airlift program; but the Army can do something about that vulnerability.[2]

The Army and Airlift Relevance

An airlift planning adage states "the Army does not have light units; it has heavy and incredibly heavy units." This adage will remain painfully relevant to the current global environment of burgeoning strategic complexity, insufficient budgets, continuous (and probably expanding) overseas commitments, a predominantly homeland-based force structure, and "diverse enemies employing traditional, unconventional, and hybrid strategies."[3] Enemies such as international criminal gangs,

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1 US Army Training and Doctrine Command (TRADOC), *The U.S. Army Functional Concept for Movement and Maneuver, 2020–2040*, TRADOC Pamphlet 525-3-6 (Fort Eustis, VA: TRADOC, 2017), 34.

2 For the Army's emerging vision, see TRADOC, *The U.S. Army Operating Concept: Win in a Complex World*, TRADOC Pamphlet 525-3-1 (Fort Eustis, VA: TRADOC, October 14, 2014), 18; and General Mark A. Milley, "Developing the Future Force, Part 2," interview by Jen Judson, Defense News, October 6, 2016.

3 TRADOC, *Operating Concept*, 8–14.

transnational terrorists, and insurgents are growing stronger. Some are approaching the point of near-peer status in local areas and in certain realms of combat, gaining a capacity for coordinated or concurrent attacks on the United States and its interests. Nuclear proliferation and inexpensive communication networks also increase the possible danger, velocity, and complexity of future crises and conflicts.[4]

In response, Army leaders and planners are exploring numerous doctrine, training, force structure, and equipment innovations to preserve future readiness. The recently released Army movement and maneuver concept, for example, calls for task-organized forces moving in unpredictable ways and maneuvering throughout the depth of future battlefields to "defeat enemies by forcing them to fight against multiple types of attacks from multiple directions and domains."[5] To survive and fight decisively, these task-organized forces will need to be capable of semi-independent—but mutually supporting—cross-domain land, sea, air, space and cyber operations for at least one week before pausing to rest and refit.[6] In many circumstances, these operations will enable sea and air forces to achieve their missions and support in-theater preparation activities by Joint commands. Agile strategic maneuver and logistical support by air and sea will be essential to achieving these effects.[7]

The success of these emerging lines of development will depend on the support of robust air mobility. Future combat scenarios often will require the Army to "maneuver over strategic distances along multiple axes of advance by air and sea," without stopping at intermediate staging bases.[8] If enemy anti-access/area denial operations block the arrival of sea and air forces in the early phases of future campaigns, Army forcible entry operations likely will involve airlifts of assault and then follow-on forces to seize terrain in unpredictable locations and to transition quickly to offensive operations. Throughout these activities, Army commanders will require high-capacity airlifts to build up and sustain maneuvers, achieve missions, evade enemy fires, reduce logistical footprints, and facilitate mutual support among widely dispersed units.[9]

The Army's dependence on airlift gives it a practically bottomless quantitative appetite for airlift support. Moving a single Stryker brigade combat team, for example, involves around 4,200 personnel as well as 15,000 tons of matériel and sustainment, taking about 380 C-17

4 Lieutenant General H. R. McMaster, "Harbingers of Future War: Implications for the Army" (presentation, Military Strategy Forum, Center for Strategic and International Studies, May 4, 2016); and Milley, "Developing the Future Force."

5 TRADOC, *Functional Concept*, 15,

6 Ibid., 13–15, 25.

7 Eric Lindsey, *Beyond Coast Artillery: Cross-Domain Denial and the Army* (Washington, DC: Center for Strategic and Budgetary Assessments, 2014), 1–6; Milley, "Developing the Future Force"; and William G. Braun III and David Lai, *U.S.-China Competition: Asia-Pacific Land Force Implications* (Carlisle, PA: Strategic Studies Institute, 2016), 66–68.

8 DoD, *Joint Operational Access Concept (JOAC)* (Washington, DC: DoD, 2012), 34

9 For the Army's vision of the relationship between maneuver and air and sea mobility, see US Army Capabilities Integration Center (ARCIC) and US Marine Corps Combat Development Command (CDC), *Gaining and Maintaining Access: An Army-Marine Corps Concept* (Fort Eustis, VA: ARCIC / CDC, 2012), 7–13. For the Air Force's tentative view of the aircraft needed to support Army maneuver, see Air Mobility Command (AMC), *Joint Future Theater Lift: Technology Study Final Report* (Scott Air Force Base [AFB], IL: AMC, 2013), 16–18.

Globemaster sorties.[10] Assuming an out-and-back cycle time of 36 hours and a continual commitment of 40 C-17s, or approximately 20 percent of the US fleet, deploying the brigade from the middle of the continental United States to the Baltic Sea region would take about 14 days. Adding more C-17s and C-5 Galaxies might accelerate the move, but only if adequate airfields and parking spaces are available at the delivery points.[11] Simple multiplication illustrates the timelines involved in air movements of multibrigade forces, their supporting elements, and sustainment supplies over longer distances can stretch into months. Even if equipment arrives by sea, onward movements to their points of need often will consume substantial theater airlift efforts to spare forces long, dangerous, and tactically undesirable road marches.

The Army also has articulated challenging qualitative requirements for airlift support under austere conditions. Indeed, in the face of strong enemy anti-access/area denial capabilities, Army air movements and maneuvers are far more likely to terminate at austere airfields and unpaved landing grounds than at developed airports and bases with long runways and extensive but easily identified and targeted parking areas. At the extreme of its maneuver vision, the Army's mounted vertical maneuver concept calls for "the maneuver and *vertical* insertion of medium-weight armored forces into areas in close proximity to their battlefield objectives *without the need for fixed airports, airfields or prepared airheads*."[12] Similarly, the current US Army operating concept links the availability of Air Force airlift assets and improvements in Army rotary-wing transports to its "maneuver advantage . . . to overcome challenges of restrictive terrain and operations across long distances . . . to deter adversaries; respond rapidly to crises; and conduct expeditionary maneuver."[13] Succinctly, the Army wants airlift support capable not only of delivering all types of combat units and their matériel into the widest possible range of tactical destinations but also for maintaining delivery densities necessary to dominate any point in their battlespaces.

Delivery density, an uncommon term, is a useful consideration in evaluations of airlift aircraft and force structures. To maintain tactical dominance in circumstances characterized by fast-breaking events and waiting enemies, deployment times of these movements—measured from the first aircraft's "wheels-up" to the arrival of the last aircraft—must be narrow enough to get ready-to-fight units on the ground and reinforced with light- to medium- mobile protected firepower elements before enemies can react. Consequently, the term has its most acute relevance to land forces transitioning across domain boundaries such as airland or airborne assaults. Under such circumstances, the interval between the arrival of the first and last aircraft to the battlespace must be short, or dense, enough to allow units to maintain tactical dominance even as they organize for offensive operations. For airlift planners,

10 Deployment Process Modernization Office, TRADOC, Fort Eustis, Virginia, e-mail message to author, February 27, 2013; and in Alan Vick, David Orletsky, Bruce Pirnie, and Seth Jones, *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* (Santa Monica, CA: RAND Corporation, 2002), 15–17.

11 Vick, Orletsky, Pirnie, and Jones, *Stryker*, 13–29.

12 Brigadier General Robin P. Swan and Lieutenant Colonel Scott R. McMichael, "Mounted Vertical Maneuver: A Giant Leap Forward in Maneuver and Sustainment," *Military Review* 87, no. 1 (January–February 2007): 52–62; emphasis added.

13 TRADOC, *Operating Concept*, 15, 17, and 22.

then, achieving tactically viable delivery densities mandates acquiring and operating the airlift force necessary to get soldiers, equipment, and sustainment on the ground as quickly as possible and in increments configured for immediate and effective combat. Delivery density does not imply forces must arrive instantaneously—though helicopter assaults of infantry can approach that ideal—but forces must arrive fast enough to establish and preserve tactical dominance.

The ability of airlift forces and their aircraft to achieve dense airland deliveries of ground forces is directly related to their terminal agility—the variety of runways and terminal infrastructures into which they can operate. Airlift forces dependent upon the long and paved runways and parking areas of global and regional airports are far less likely to get Army forces to their points of need than airlift forces that can use short and unpaved airstrips, sections of multilane highways, open fields, or (best of all) helicopter landing zones.[14] A study by the Army Capabilities Integration Center provides a useful example of these considerations. Examining the airfield availability to support force flows into a large African country, the study found the number of locations available to vertical takeoff and landing aircraft was virtually limitless. In comparison, only 24 percent of the territory lay within 50 kilometers of airfields capable of receiving a C-130 Hercules or a C-17 needed to deliver Stryker units. Moreover, the country possessed only 13 airfields able to accommodate C-5s.[15] Only a few of those airports possessed the maximum-on-ground aircraft parking capacity to receive large airlift flows or to serve as global-theater intermediate staging bases. This issue is critical since airfield limitations or available transportation personnel will impose maximum on-ground limitations that will consequently limit throughput at forward airfields regardless of the number of aircraft available.[16] Indeed, one recent Air Force review estimated only 16 airfields surveyed in sub-Saharan Africa had the runways and capacities needed to serve as C-17 hubs for onward C-130 operations.[17]

Shortfalls in the Airlift Program of Record

A complex relationship exists between the Army's airlift support requirements and the current airlift program of record's ability to satisfy them. The American national air-mobility system is unparalleled in its capacity and personnel expertise.[18] But, its ability to deliver combat forces to the places and with the delivery densities the Army wants is

14 For discussion on the operational and aerodynamic characteristics of these different airfield profiles, see Robert C. Owen, "Theater Airlift Modernization: Options for Closing the Gap," *Joint Force Quarterly* 75 (4th Quarter 2014): 17.

15 Jim Young, "A Strategic Terrain Analysis Examining Deployment Considerations within the Arc of Instability" (briefing, US Army Capabilities Integration Center Deployment Modernization Office, February 4, 2009), slides 13 and 14.

16 Importantly, the Air Mobility Command's 621st Contingency Response Wing only fields a handful of mobile transportation elements, which are able to support two aircraft on the ground at expeditionary airfields. Vick, Orletsky, Pirnie, and Jones, *Stryker*, 47; Christopher G. Pernin et al., *Enabling the Global Response Force: Access Strategies for the 82nd Airborne Division* (Santa Monica, CA: RAND Corporation, 2016), 22, 30–31, 40; and Robert C. Owen, "Humanitarian Relief in Haiti, 2010: Honing the Partnership between the US Air Force and the UN," in *Air Power in UN Operations: Wings for Peace*, ed. A. Walter Dorn (Farnham, Surrey, UK: Ashgate, 2014), 90.

17 Christopher M. Jones, e-mail message to author, December 29, 2015. At the time, Captain Jones was an operations research scientist at the combined headquarters of United States Air Forces Europe (USAFE)—Air Forces Africa, USAFE A9/A9A.

18 For a general history of the development of American air-mobility capabilities, see Robert C. Owen, *Air Mobility: A Brief History of the American Experience* (Washington, DC: Potomac Books, 2013).

demonstrably inadequate. Moreover, the Department of Defense (DoD) has no comprehensive plan in place to address these shortfalls any time soon despite spending funds on piecemeal modernization programs that will not meet the full scope of the Army's future needs much more than do the current requirements.

The American air-mobility system consists of several interconnected components. Its total force military arm consists of operationally integrated Air Force, Air Force Reserve, and Air National Guard components that possess a core airlift fleet of 54 C-5s, 222 C-17s, and over 300 C-130s. These components also operate just over a hundred specialized transports, ranging from presidential Boeing 747s to small business jets.[19] Additionally, some 20 air carriers contribute around 450 airliners to the Civil Reserve Air Fleet.[20] The rest of the airlift enterprise consists of a global system created by commands, headquarters, operating bases, logistics elements within each service, depots, and supply centers as well as training, education, and professional organizations.[21] In a maximum effort, the Air Force expects this mobility system to produce around 50 million ton-miles per day (MTM/D) of lift. For perspective, this much cargo equates to transporting 4,600 tons per day over 11,000 nautical miles (nm)—a roundtrip between Joint Base Lewis-McChord, Washington and the Philippine island of Luzon—perhaps the equivalent of a brigade delivery every 4 days.

Of course, the ideal airlift would only exist if "someone shows up with enough fairy dust to wish away all of the things that hinder airlift efforts."[22] Historically, hindrances include competing demands on fleet capacity, changes in local operational circumstances and priorities, enemy and enemy-sympathizer military and diplomatic actions, limited availability of suitable enroute and destination airfields, breakdowns in movement coordination and cargo tracking, crew force limitations, shortages of cargo pallets and aircraft loading equipment, aircraft maintenance challenges, and more. During the Persian Gulf War, these impediments limited the airlift throughput to 13.6 MTM/D out of a notional airlift system capacity of about 49 MTM/D.[23] The military services have done much to improve airlift management since then, but the complexities of and competition for airlift support have increased. In other words, the system will work better in the future but probably not enough to justify confident expectations that it will perform at capacity.

The mismatch in the cargo compartment sizes and the capacities of aircraft in the core airlift fleet also undermines the efficiency of many airlift operations. The airlift fleet has two categories of aircraft based

19 Brendan McGarry, "USAF Almanac: Equipment," *Air Force Magazine* 99, no. 5 (May 2016): 32–33. The number of C-130s in the fleet is variable at the moment, as the Air Force is slowly reducing the size of the fleet towards about 300 aircraft.

20 Michael Lowder to Civil Reserve Air Fleet (CRAF) Program Participants, memorandum, "Civil Reserve Air Fleet (CRAF) Allocation Changes—2016," January 20, 2016, US Department of Transportation, Washington, DC, 1 and enclosure 1. For a comprehensive discussion of the workings of the CRAF, see USTRANSCOM and AMC, *Civil Reserve Air Fleet Study*, Phase 2 Report (Scott AFB, IL: USTRANSCOM / AMC, 2014).

21 For a detailed discussion on the national air mobility system, see Air University, *Air Mobility Operations*, Annex 3-17 (Maxwell AFB, AL: Lemay Center for Doctrine, 2014).

22 Major General Timothy Zadalis (comments, Air Mobility and the Future of Air and Land Warfare panel, 2016 Airlift/Tanker Association Conference, Nashville, TN, October 29, 2016).

23 Military Airlift Command, *History of Military Airlift Command*, *Calendar Year 1991*, vol. 1, *Narrative and Appendices* (Scott AFB, IL: Air Mobility Command History Office), 175.

on cargo compartment size. C-5s and C-17s comprise a category of big airplanes capable of carrying outsized loads such as battle tanks, self-propelled artillery, and up-armored M1126 Stryker infantry carriers between developed airfields. The second category includes C-130s, much smaller aircraft capable of operating on unpaved airstrips while carrying medium-weight and oversized loads such as early variant, lightly armored Strykers, towed artillery, medium-weight engineering equipment, and tactical radars. The cargo compartment mismatch separating these two transport categories chokes force movements at intermediate staging bases when cargoes are transferred from the big planes to the C-130s capable of landing at less developed airfields closer to points of need. This disconnect can impose painful operational choices on commanders trying to preserve unit integrity while moving to austere forward bases.

The limited range and payload characteristics of the current theater transport fleet exacerbates the operational dilemmas inherent in force deployments since they can force commanders to conduct intermediate staging base operations within range of enemy weapons. A C-130J carrying a 38,000-pound basic Stryker vehicle, for example, has a range of about 1,600 nm. In comparison, the Airbus A400M can carry the same vehicle for 3,700 nm; the developmental Embraer KC-390 tanker-transport aircraft for 2,100 nm.[24] Considering that unrefueled operational radius is around 40 percent of an aircraft's range, an intermediate staging base receiving C-130J support for a Stryker brigade move would have to be within 640 nm of its point of need. That distance is well within the range of tactical aircraft armed with standoff weapons and by medium-range ballistic missiles, such as the Chinese DF-21. In such situations, Army movements affected by the previously mentioned chokepoints would be more vulnerable to enemy attacks.

The defense community has been fully aware of these long-standing mobility shortfalls as expressed in a US Transportation Command report in 2011:

> Future operations described in joint concepts require the ability to transport forces over strategic and operational distances directly to points of need and to routinely operate on austere, short, and unimproved landing areas. The current mobility airlift fleet cannot. C-130s can carry cargo to semi-prepared runways, but not the medium-weight forces needed. C-17s and C-5s, on the other hand, can carry the medium-weight force, but not directly to a short or soft landing area that may be the point of need.[25]

More recently, US Transportation Command (USTRANSCOM) Commander General Darren W. McDew reported to Congress: "The current pace of today's operations requires the full effort of our . . . fleet. Should the need arise to respond elsewhere in the world, the mobility resources required could exceed our existing capacity."[26] McDew expressed the fleet's capacity would be "sufficient with a manageable amount of risk."[27] Whatever "manageable" meant in this context, the term

24 Robert C. Owen, *Shaping Air Mobility Forces for Future Relevance* (Maxwell AFB, AL: Air Force Research Institute, 2017), appendix.

25 USTRANSCOM, *Future Deployment and Distribution Assessment: Mobility Lift Platforms, Final Report*, vol. 1 (Scott AFB, IL: USTRANSCOM, 2011), 2–11.

26 *Hearing on the U.S. Transportation Command 2017 Readiness Posture*, 114th Cong. (2016) (statement of General Darren W. McDew, commander, USTRANSCOM), 6:50.

27 Ibid., 37:57.

implicitly reinforces the perception that the simultaneous, multithreat, and multiregion crises visualized by current Army commanders—and the entire defense community—could quickly overwhelm American air-mobility capabilities, forcing difficult operational decisions within combatant commands.

Despite the obvious shortfalls and operational limitations of the existing airlift fleet, planning in this area by the Defense Department and the Air Force proceeds at a glacial pace. The Mobility Capabilities and Requirements Study-2016 (MCRS-16) and related strategic guidance documents remain the authoritative baselines for DoD discussions of airlift force structure issues. MCRS-16 found the existing airlift force sufficient to meet current DoD conflict planning scenarios but recommended the Department of Defense "continue to explore strategies to mitigate the adverse impacts of infrastructure constraints" to support major force deployments.[28] Oddly, the report also implied the availability of C-17s to support intratheater movements reduced the requirements for C-130s even though the bigger aircraft is more infrastructure-dependent than the smaller one.[29] The Government Accountability Office subsequently questioned the usefulness and even the relevance of MCRS-16 since the study provided no specific risk assessments of identified shortfalls and the basic DoD planning guidelines had changed since its publication.[30] Since then, various DoD and Air Force organizations have conducted limited studies of technology and fleet mix issues, but the Defense Department will not update MCRS until 2018, presumably after the Trump administration has issued new strategic guidance. So, apart from vague pronouncements about possibly recapitalizing the strategic airlift fleet in the 2030s and the theater fleet a decade or so thereafter, the defense community has no comprehensive plan to address the qualitative and quantitative shortfalls in the airlift fleet.

The Army's Essential Role in Past Airlift Force Modernizations

If the past can be a prologue, it is important to understand no major modernization of American airlift forces has ever happened in the absence of strong, public, institutional, and detailed leadership from the Army. Certainly, Army leadership was pivotal to such policy milestones as the creation of the battlefield airlift component of Army aviation and global airlift forces as well as the acquisition of the C-17. Faced with Air Force reluctance in the mid-1950s to acquire fixed- and rotary-wing airlift forces adequate for their vision of maneuver on nuclear battlefields, Army leaders bootlegged their own technical and tactical development program, successfully pressing for funding to buy thousands of helicopters and a small fixed-wing fleet.[31] Concurrent Army

28 William J. Lynn III, deputy secretary of defense, memorandum, "Mobility Capabilities and Requirements Study—16 Executive Summary," February 26, 2010, US Department of Defense, Washington, DC, 4.

29 Ibid., 4–5.

30 US Government Accountability Office (GAO), *Defense Transportation: Additional Information Is Needed for DOD's Mobility Capabilities and Requirements Study 2016 to Fully Address All of Its Study Objectives*, Report 11-82R (Washington, DC: GAO, 2010), 3, 6–7.

31 Christopher C. S. Cheng, *Air Mobility: The Development of a Doctrine* (Westport, CT: Praeger, 1994), 85–111; and James W. Williams, *A History of Army Aviation: From Its Beginnings to the War on Terror* (New York: iUniverse, 2005), 69–80.

advocacy for true global mobility and the "politicking" of sympathetic Air Force enthusiasts, two presidents, and many engaged legislators obliged the Air Force to fund the development of a turbofan-powered transport fleet truly capable of lifting all types of ground units over the oceans.[32] As America's strategic circumstances changed and the end-of-service life for the original turbofan fleet loomed, strong and persistent advocacy by Army leaders, overseas commanders in chief, and interested congressmen helped Air Force mobility leaders keep the replacement program focused on the uniquely capable C-17.[33] Without that advocacy, the program's focus might have drifted to cheaper options, such as upgraded C-5s and slightly modified commercial designs, less compatible with the Army's emerging mobility needs. Conversely, the Army's recent failure to package its proposed Joint Heavy Lift and Joint Cargo Aircraft programs to bridge interservice doctrines, roles, budgets, and professional languages led to the collapse of both programs.[34]

The US Army's advocacy for these programs had several consistent features. Most important, leaders did not cross the boundary between aggressive advocacy and insubordination.[35] Rather, they worked within legal and constitutional structures to influence national policy and the Defense Department's military requirements processes. They and their sympathizers surely stepped on institutional toes, but nothing suggests laws were broken or the good order and discipline of American defense services was undermined. Also, the Army galvanized every critical airlift debate with clear, confident, and credible vision documents. These documents ranged from the 1954 Project Vista study that coalesced Army thinking about air mobility in nuclear warfare to the Objective Force concept of the early 2000s that reaffirmed and quantified the Army's need for long-range global mobility.[36] Last, Army leaders approached advocacy as a team effort, assiduously informing and cooperating with other services, government leaders, and civil authorities on its airlift needs. Ultimately, this broad-based support carried visions of airlift modernization to the national level of endorsement and funding.

Current circumstances indicate requirements for successful advocacy of Army airlift interests will not change significantly. Conflicting perspectives dominate the complex and costly realm of military affairs. Army leaders view airlift as a vital underpinning of their mission and relevance; Air Force leaders consider Army movement aspirations as elements of a broader set of operational obligations and budgetary demands. Neither side clearly understands the tactical requirements of the other. Corporate leaders not only love their country but also market specific aircraft. Congressional members worry about national defense while protecting their Air National Guard units and preserving the

32 Robert C. Owen, *Air Mobility*, 139–55.

33 Owen, *Air Mobility*, 229–39. For a definitive discussion of this project and its advocacy, see Betty R. Kennedy, *Globemaster III: Acquiring the C-17* (Scott AFB, IL: Air Mobility Command, Office of History, 2004).

34 Owen, *Air Mobility*, 291–94.

35 For more than this summary of the content and tone of Army airlift advocacy based on numerous sources, see "Army Aviation in the 1950s" and "Vietnam—The Air Mobility War" in Owen, *Air Mobility*. Also see Williams, *History of Army Aviation*, 66–77, 97–104, 407–14. For a useful case study into the Army's development and advocacy of the air mobility concept, see John J. Tolson in *Air Mobility 1961–1971* (Washington, DC: Government Printing Office, 1973), 1–22.

36 California Institute of Technology, *Final Report on Project VISTA: A Study of Ground and Air Tactical Warfare with Especial Reference to the Defense of Western Europe*, series A, vol. 1 (February 4, 1952).

economic well-being of their constituents. The intellectually stagnating effect of strategic uncertainty accompanying the increasing complexity of the military's future overshadows each of these interests.

So, if the Army intends to shape an air-mobility fleet capable of supporting battle through the remainder of the century, it had better get engaged. As General Mark Milley said on the eve of becoming the Army chief of staff, it is time for him and the other service chiefs to "elbow" their way into more assertive participation in Joint modernization decisions.[37]

Shaping the Future Airlift Program for Warfighting Relevance

Assiduous long-term airlift policy requires sustained knowledge acquisition and context-setting campaigns by the appropriate Army commands and leaders. The Army must clearly articulate its key airlift goals and ardently hold the Air Force to its responsibilities to maintain capability requirements. The first goal might address transporting forces and outsize cargoes from intermediate staging bases located outside enemy weapon-engagement zones to dispersed and austere points of need. Some solutions Army leaders might champion include equipping the Army with improved medium-weight protected firepower vehicles and advancing vertical takeoff and landing technology. Should advancing vertical technology prove unattainable or unaffordable, super-short takeoff and landing systems capable of lifting medium-weight forces might be a practical alternative. Due to the extreme MTM/D requirements, profoundly increasing the throughputs and delivery densities of long-range airlift forces into global class and regional airfields cannot be overlooked.

Army leaders should broker an agreement between their service, the Air Force, and other willing stakeholders, particularly the combatant commands, to identify the appropriate technologies and to develop acquisition strategies for modernizing air-mobility forces to meet specific operational requirements rather than simple gross-lift calculations. This step is essential to shaping the focus of the forthcoming MCRS and to initiating modernization and development programs quickly—for example, if all agree filling the existing gap in delivering medium-weight, oversize loads to austere airfields is a pressing need, incrementing a fleet of A400Ms for operations over the next 30 years can begin shortly after the MCRS. Likewise, if emphasis is given to the strategic throughput problem, development of a new strategic airlifter, probably larger than the C-5 but with better airfield agility, can start. One compelling reason for expediting these assessments is maximizing opportunities to offset some costs by terminating acquisitions and service-life extensions of less useful systems.

Finally, the Army should encourage stakeholders to create a new multiservice airlift knowledge-management organization similar in concept and tasking to the Airlift Concepts and Requirements Agency, established in 1984 to "coordinate and integrate . . . the development and promulgation of joint airlift concepts, doctrine, training, procedures, and materiel which support current and future Air Force and Army

37 Marcus Weisgerber, "US Army's New Chief Sets Three Goals," Defense One, October 8, 2015.

doctrine and unified and specified command requirements."[38] Given changes in the Joint system since then, the structure of a new airlift knowledge management organization will likely differ in many respects from the Airlift Concepts and Requirements Agency, but the defense community will benefit from the centralization. Such an organization can facilitate the efforts of many groups to arrive at a common, detailed, and comprehensive understanding of airlift useful for wisely building the most capable fleet.

38 Department of the Army and Department of the Air Force, *MAC-TRADOC Airlift Concepts and Requirements Agency (ACRA)* (Washington, DC: Department of the Army and Department of the Air Force, 1985), 1.