

## Lessons From the History of Logistics

There are at least three general lessons from history that might prove of some use in understanding how best to prepare for the future. The first of these is the best case operationally is often the worst case logistically. The second is promises to eliminate friction and uncertainty have never come to fruition. The third is technological change must be accompanied by organizational and intellectual change to take full advantage of new capabilities. While these lessons are not exclusive to logistics, when applied to the understanding and practice of military logistics, they provide a framework for understanding the past and planning for the future.

# logistics history

### Logistics Pioneer: Rear Admiral Henry E. Eccles Logistics Vignettes—Snapshots from History

In this edition's history section two areas are included. The first is a short review of the life and work of Rear Admiral Henry E.

Eccles. The second section is a collection of snapshots from the history of logistics presented as vignettes.

# *Logistics Pioneer*

## Rear Admiral Henry E. Eccles

*When the fundamentals are understood, the technical details can be more readily developed. When the fundamentals are ignored or not understood, no amount of technical skill and effort can compensate.<sup>1</sup>*

—Rear Admiral Henry E. Eccles, US Navy

**If logistics is the bridge between economics and military operations, logistics plans must be interwoven with national, strategic, and tactical plans at all levels of command.**

In today's constantly changing, expeditionary environment, logisticians must understand the fundamentals of logistics so they have the capability to quickly shift and adapt to meet mission requirements. Although logisticians often learn on the job, they also gain knowledge from mentors, by reading, and by studying logisticians from the past. One such logistician is Rear Admiral Henry Eccles, a pioneer in military logistics whose work and lessons on leadership are still applicable today.

Admiral Eccles graduated from the United States (US) Naval Academy in 1922. He then served on submarines and destroyers for almost 20 years. After being wounded while in command of the USS *John D. Edwards* early in World War II, he served as the head of Advanced Base Section, US Pacific Fleet. While assigned to the Pacific Fleet, Admiral Eccles played a key role in planning, construction, and support operations for the Pacific campaigns. During this assignment, he became a subject matter expert in logistics.<sup>2</sup> Admiral Eccles' affinity for logistics lingered after the war ended, and in 1946 he was selected to establish the Naval War College's logistics department. He officially retired from the Navy in 1952, but his association with the military and logistics continued for another 30 years.

In an effort to synthesize some of Admiral Eccles' contributions to logistics as a strategic leader, this article will first illustrate how he exhibited the three technical competencies of strategic leadership as defined by the US Army War College. Next, the article will highlight how he was a creative thinker. Finally, it will describe how his ability to communicate illustrates one aspect of a strategic leader's interpersonal competencies. Many of Eccles' contributions as a "strategist, logistician, philosopher, and moralist of war"<sup>3</sup> occurred after his retirement, while he taught and lectured military personnel. As a result, the majority of examples cited throughout this article will be culled from his books, papers, and lectures on military logistics.

The US Army War College's *Strategic Leadership Primer* describes the strategic leader technical competencies. They include appreciating Joint, interagency, multinational, and intra-agency (JIMI) relationships; maintaining political and social competence; and understanding organizational systems and associated relationships.<sup>4</sup> These competencies are interrelated, and Admiral Eccles displayed each during his years as a strategic leader and thinker.

Admiral Eccles served on the Allied Forces Southern Europe staff during its formative years, and shared his opinions, conclusions, and recommendations for officers working on future Allied staffs in a paper published in *Proceedings*. His article illustrates an appreciation for working with multinational partners, and his many recommendations and observations are still relevant. For example, the paper provides thoughts on overcoming language barriers and it highlights the importance of understanding

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command and administrative relationships. It also recommends studying the history and culture of a host country prior to deploying, and concludes by describing the incredible cooperation displayed by the nations serving on the staff.<sup>5</sup> Today, this article remains pertinent and provides excellent recommendations for anyone serving alongside international partners.

The political and social strategic leader competency includes having the “ability to participate effectively in the interdepartmental process inherent in national security policy formulation.”<sup>6</sup> In addition to his appreciation for JIMI relationships, Admiral Eccles advocated the importance of logistics within the overall security policy and planning process. In the preface of his book *Military Concepts and Philosophy*, Rear Admiral Eccles wrote, “no military theory can stand alone; it must be related to political and economic theory...these relationships will be overlapping and interweaving.”<sup>7</sup> The book focuses on these interwoven relationships, to include outlining his theory of “Logistics—the Bridge,” which defines logistics as the bridge between the economic system and combat forces.<sup>8</sup> In this capacity, logistic support of tactical forces is essential to meeting specific strategic objectives. Eccles advocated a strategic vision in which logistics provides the bridge linking national security policy with military operations.

If logistics is the bridge between economics and military operations, logistics plans “must be interwoven with national, strategic, and tactical plans at all levels of command.”<sup>9</sup> Admiral Eccles wrote and taught extensively on this subject. He stressed the importance of incorporating logistics into all levels of planning, to include national security policy planning, Joint planning at both the strategic and operational level, planning at the Service level, and planning at the tactical level. Eccles’ concept of logistics as a bridge demonstrates his grasp of national security policy formulation, as well as his strategic vision and leadership. His thoughts are still applicable today.

Other senior leaders also recognized Admiral Eccles’ appreciation for JIMI relationships and the political environment. In a special issue of the *Naval War College Review* (published on behalf of the 25<sup>th</sup> anniversary of Admiral Eccles’ retirement from the US Navy), Ambassador (retired) Thomas S. Estes crafted a piece highlighting the admiral’s grasp of civil-military relations, and his great appreciation for the link between politics and military planning.<sup>10</sup>

Systems understanding, the final strategic leader technical competency, is grasping how an organization (or process) fits within the total Department of Defense (DoD) framework.<sup>11</sup> Admiral Eccles wrote and taught extensively on how logistics is a key factor within the JIMI and political arenas, and how both areas contribute to the overall DoD framework. Eccles wrote extensively on the relationship between strategy, logistics, and tactics. He believed these relationships are so interconnected that, if a commander thinks of any of these elements in isolated terms, “he has lost his perspective.”<sup>12</sup> Based on his experience managing logistics for the Pacific Theater during World War II, he also wrote and lectured on the advantages and disadvantages of providing overseas logistic support to forces by either establishing military bases or by providing mobile logistic support. A number of factors figure into the criteria for

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**Article Acronyms**

DoD – Department of Defense  
 JIMI – Joint, Interagency,  
 Multinational, and Intra-  
 agency  
 US – United States

**One logistic principle discussed throughout his work is the *logistic snowball*, which describes how all logistics activities and programs tend to become large, thereby making logistics ineffective or unmanageable.**

determining which is optimal in a given situation. Eccles argued special research is always required prior to making a decision due to the “enormous political-military and economic importance of this subject.”<sup>13</sup>

Strategic leaders must be able to think strategically, which includes being able to think using five different thinking lenses. One of the lenses, thinking creatively, is defined as having the “ability to produce novel ideas that are valued by others.”<sup>14</sup> Since Admiral Eccles wrote about logistics extensively, many of his creative ideas can be found in his notes and books, and are still studied today. One logistic principle discussed throughout his work is the *logistic snowball*, which describes how all logistics activities and programs tend to become large, thereby making logistics ineffective or unmanageable.<sup>15</sup> This concept has been adapted to today’s logistics environment, and is studied in many supply chain and logistics management programs. An example of the logistics snowball principle is the stockpiling of inventory. Another idea he wrote and lectured about extensively, based on his experience in the Pacific, is command control of logistics and the importance of centralizing logistics in a theater of operations.<sup>16</sup> Although this may seem obvious, it is a concept logisticians still struggle with today. Some of his ideas, such as options for organizing staffs to control logistics, are reflected in the most current edition of Joint Publication 4-0, *Joint Logistics*.

Strategic leaders must also possess a number of interpersonal competencies, to include having the ability to communicate. As a strategic leader, Admiral Eccles communicated his ideas extensively both internally to the military and externally through writing and lectures. Over the course of his life, he wrote four books and published over 30 articles on logistics. In addition, the US Naval War College Library (named on his behalf) includes many unpublished works, correspondence, lecture notes, and other material.<sup>17</sup> Finally, the admiral mentored many senior leaders, to include serving as a “trusted confidant to numerous presidents”<sup>18</sup> at the Naval War College. His ability and desire to teach and communicate are critical examples for all DoD strategic leaders to follow.

An incredible strategic leader and thinker, Admiral Eccles’ contributions to military logistics are extensive and timeless. This article described his strategic leadership in terms of JIMI relationships, political and social competence, and his understanding of systems. It also highlighted his creative thinking ability, as well as his ability to communicate through writing, lecturing, and mentoring. The article provides only a small snapshot of Admiral Eccles’ contributions to military logistics. As a strategic leader and thinker, Admiral Eccles understood the importance of thinking in time—which is reflecting on history and applying it to current issues.<sup>19</sup> In his article “Introduction to Papers” he wrote, “...full understanding comes only when an idea is examined in different contexts, circumstances and times...and its validity and permanence are tested.”<sup>20</sup>

All military personnel, especially logisticians, should study his timeless work and apply it to the many logistic challenges faced today.

**Notes**

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3. Rear Admiral R. F. Marryott, *Naval War College Review*, Volume 39, No 4, 4.
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8. Rear Admiral Henry E. Eccles (Retired), *Logistics in the National Defense*, Harrisburg, Pennsylvania: The Stackpole Company, 1959, 53.
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10. Ambassador Thomas S. Estes (Retired), "Henry E. Eccles," *Naval War College Review*, Volume 30, No 1, 9.
11. Shambach, 33.
12. Eccles, *Logistics in the National Defense*, 21.
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16. Rear Admiral Henry E. Eccles (Retired), "Logistics – What Is It?" *Logistics Spectrum*, reprinted from US Naval Institute *Proceedings*, June 1953, 14.

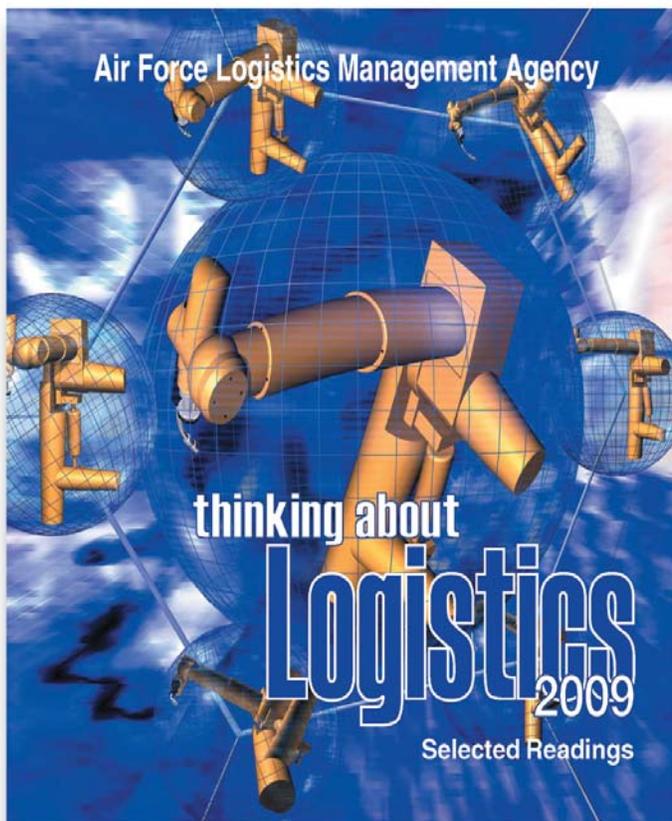
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19. Meinhart, "Leadership and Strategic Thinking," 66.
20. Eccles, *Logistics Spectrum*, 8.

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# *Snapshots from History* Logistics Vignettes

## Thinking About Logistics

Understanding the elements of military power requires more than a passing knowledge of logistics and how it influences strategy and tactics. *An understanding of logistics comes principally from the study of history and lessons learned.* Unfortunately, despite its importance, little emphasis is placed on the study of history among logisticians. To compound matters, the literature of warfare is replete with triumphs and tragedy, strategy and tactics, and brilliance or blunders; however, far less has been written concerning logistics and the tasks involved in supplying war or military operations.<sup>1</sup>

Logistics is the key element in warfare, more so in the 21<sup>st</sup> century than ever before. Success on the modern battlefield is dictated by how well the commander manages available logistical support. Victories by the United States in three major wars (and several minor wars or conflicts) since the turn of the century are more directly linked to the ability to mobilize and bring to bear economic and industrial power than any level of strategic or tactical design. The Gulf War and operations to liberate Iraq further illustrates this point.

As the machinery of the allied coalition began to turn, armchair warriors addicted to action, and even some of the hastily recruited military experts, revealed a certain morbid impatience for the “real war” to begin. But long before the allied offensive could start, professional logisticians had to gather and transport men and materiel and provide for the sustained flow of supplies and equipment that throughout history has made possible the conduct of war. Commanders and their staffs inventoried their stocks, essayed the kind and quantities of equipment and supplies required for operations in the severe desert climate, and coordinated their movement plans with national and international logistics networks. *The first victory in the Persian Gulf War was getting the forces there and making certain they had what they required to fight* (emphasis added). Then and only then, would commanders initiate offensive operations.<sup>2</sup>

Unfortunately, the historical tendency of political and military leadership to neglect logistics activities in peacetime and expand and improve them hastily once conflict has broken out may not be so possible in the future as it has in the past. A declining industrial base, flat or declining defense budgets, force drawdowns, and base closures have all contributed to eliminating or restricting the infrastructure that made rapid expansion possible. Regardless, modern warfare demands huge quantities of fuel, ammunition, food, clothing, and equipment. All these commodities must be produced, purchased, transported, and distributed to military forces. And of course, the means to do this must be sustained. Arguably, logistics of the 21<sup>st</sup> century will remain, in the words of one irreverent World War II supply officer, “The stuff that if you don’t have enough of, the war will not be won as soon as.”<sup>3</sup>

### Notes

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3. Julian Thompson, *The Lifeblood of War: Logistics in Armed Conflict*, Oxford: Brassys’s, 1991, 3

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## **Shaping Logistics—Just-in-Time Logistics**

**G**eostrategic, economic, and technological changes will make support of air operations, both at home and overseas, increasingly dependent on the flexibility and responsiveness of the military logistic organization. This requires the creation of a highly integrated and agile support chain with global reach. The most promising strategy to achieve these aims is based on a joint management approach, teaming the public and private sectors, under long-term partnering arrangements. While it is probable that organic military maintenance capabilities will be retained, particularly to address life-extension and fleet-upgrade requirements, the alliance partners will largely determine the size and shape of the military logistic organization as part of their wider responsibilities for shaping the overall support chain. Success will be measured by a reduction in inventories, faster turn-round times, more rapid modification embodiment, swifter deployment of new technologies, a smaller expeditionary footprint, lower support costs, and greater operational output.

This strategy requires more, however, than the application of just-in-time principles. It embraces commercial express transportation; innovative contracting arrangements including spares-inclusive packages; the application of commercial information technology solutions to support materiel planning and inventory management; collective decisionmaking involving all stakeholders; an overriding emphasis on operational output; and most important, a high level of trust between all the parties. These changes may well result in smaller organic military repair facilities and the greater use of contractors at all maintenance levels, including overseas. Most important, it will require the military aviation maintenance organization to move away from an internal focus on efficiency and utilization to a holistic approach that puts customer needs, in the form of operational output, first and foremost.

As with any new strategy, there are risks. The fundamental building block in determining a successful partnership with industry is *trust*. As one commentator has observed, “Trust is the currency that makes the supply chain work. If it’s not there, the supply chain falls apart.”<sup>1</sup> As support chains are more closely integrated and maintenance strategies are better aligned, the more vulnerable is the logistic organization to the impact of inappropriate behavior. In the past, the risk might have been minimized and resilience enhanced by providing duplicate or alternative in-house capabilities backed up by large inventories. This is neither affordable nor compatible with today’s operational needs. In the future, therefore, the main safeguard will be the creation of an environment in which government and industry, both primes and subcontractors, can function coherently, effectively, and harmoniously.

### **Notes**

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**Group Captain Peter J. Dye, RAF**

## Logistics and Warfare

General Mathew B. Ridgway, of World War II fame, once observed, “What throws you in combat is rarely the fact that your tactical scheme was wrong ... but that you failed to think through the hard cold facts of logistics.” Logistics is the key element in warfare, more so in the 21<sup>st</sup> century than ever before. Success on the modern battlefield is dictated by how well the commander manages available logistical support. Victories by the United States in major wars (and several minor wars or conflicts) in the 20<sup>th</sup> century are linked more directly to the ability to mobilize and bring to bear economic and industrial power than any level of strategic or tactical design. The Gulf War and operations to liberate Iraq further illustrate this point. Long before the Allied offensive could start, professional logisticians had to gather and transport men and materiel and provide for the sustained flow of supplies and equipment that throughout history has made possible the conduct of war. Commanders and their staffs inventoried their stocks, essayed the kind and quantities of equipment and supplies required for operations in the severe desert climate, and coordinated their movement plans with national and international logistics networks. “*The first victory in the Persian Gulf War was getting the forces there and making certain they had what they required to fight* [Emphasis added]. Then and only then, would commanders initiate offensive operations.”<sup>1</sup> The same may be said of lightning quick victory in Iraq, although without the massive stockpile of inventory seen during the Gulf War.

In 1904, Secretary of War Elihu Root warned, “Our trouble will never be in raising soldiers. Our trouble will always be the limit of possibility in transporting, clothing, arming, feeding, and caring for our soldiers....”<sup>2</sup> Unfortunately, the historical tendency of both the political and military leadership to neglect logistics activities in peacetime and expand and improve them hastily once conflict has broken out may not be so possible in the future as it has in the past. A declining industrial base, flat or declining defense budgets, force drawdowns, and base closures have all contributed to eliminating or restricting the infrastructure that made rapid expansion possible. Regardless, modern warfare demands huge quantities of fuel, ammunition, food, clothing, and equipment. All these commodities must be produced, purchased, transported, and distributed to military forces. And of course, the means to do this must be sustained.

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1. Charles R. Shrader, *U.S. Military Logistics, 1607-1991, A Research Guide*, New York: Greenwood Press, 1992, 3.
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## The Themes of US Military Logistics

From a historical perspective, ten major themes stand out in modern US military logistics.

- The tendency to neglect logistics in peacetime and expand hastily to respond to military situations or conflict.
- The increasing importance of logistics in terms of strategy and tactics. Since the turn of the century, logistical considerations increasingly have dominated both the formulation and execution of strategy and tactics.
- The growth in both complexity and scale of logistics in the 20<sup>th</sup> century. Rapid advances in technology and the speed and lethality associated with modern warfare have increased both the complexity and scale of logistics support.
- The need for cooperative logistics to support allied or coalition warfare. Virtually every war involving US forces since World War I has involved providing or, in some cases, receiving logistics support from allies or Coalition partners. In peacetime, there has been an increasing reliance on host-nation support and burden sharing.
- Increasing specialization in logistics. The demands of modern warfare have increased the level of specialization among support forces.
- The growing tooth-to-tail ratio and logistics footprint issues associated with modern warfare. Modern, complex, mechanized, and technologically sophisticated military forces, capable of operating in every conceivable worldwide environment, require that a significant portion, if not the majority of it, be dedicated to providing logistics support to a relatively small operational component. At odds with this is the need to reduce the logistics footprint in order to achieve the rapid project of military power.
- The increasing number of civilians needed to provide adequate logistics support to military forces. Two subthemes dominate this area: first, unlike the first half of the 20<sup>th</sup> century, less reliance on the use of uniformed military logistics personnel and, second, the increasing importance of civilians in senior management positions.
- The centralization of logistics planning functions and a parallel effort to increase efficiency by organizing along functional rather than commodity lines.
- The application of civilian business processes and just-in-time delivery principles, coupled with the elimination of large stocks of spares.
- Competitive sourcing and privatization initiatives that replace traditional military logistics support with support from the private business sector.

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## Historical Perspective

*The battle is fought and decided by the quartermasters before the shooting begins.*

—Field Marshal Erwin Rommel

No matter their nationality or specific service, military logisticians throughout history have understood the absolute truth represented in the above quote. Whether they were charged with supplying food for soldiers, fodder for horses or the sinews of modern war—petroleum, oil, and lubricants, they have understood that victory is impossible without them—even if, sometimes, it seemed their vital contributions were forgotten or ignored. None of the great military captains of history were ignorant of logistics. From Frederick the Great to Napoleon to Patton, they all understood the link between their operations and logistics. The great captains also have all understood that history had much to teach them about the nature of the military profession. Yet, military logisticians do not often spend time studying the history of military logistics.

There are at least three general lessons from history that might prove of some use in understanding how best to prepare for the future. The first of these is the best case operationally is often the worst case logistically. The second is promises to eliminate friction and uncertainty have never come to fruition. And the third is technological change must be accompanied by organizational and intellectual change to take full advantage of new capabilities. While these lessons are not exclusive to logistics, when applied to the understanding and practice of military logistics, they provide a framework for understanding the past and planning for the future.

Colonel Karen S. Wilhelm, USAF (Ret)

## Concentration and Logistics

To win in battle we must concentrate combat power in time and space. Strategy and tactics are concerned with the questions of what time and what place; these are the ends, not the means. The means of victory is concentration and that process is our focus here. There are only four key factors to think about if we seek success in concentration. This is not a simple task. Although few in number, their impact, dynamics and interdependencies are hard to grasp. This is a problem as much of perspective as of substance. It concerns the way we think, as much as what we are looking at. The factors are not functions, objects or even processes. They are best regarded as conditions representing the nature of what we are dealing with in seeking concentration. They are as follows. Logistics is not independent. It exists only as one half of a partnership needed to achieve concentration. Why is understanding this so important? Logistics governs the tempo and power of operations. For us, and for our enemy. We have to think about the partnership of operations and logistics because it is a target. A target for us, and for our enemy. Like any target, we need to fully understand its importance, vulnerabilities and critical elements to make sure we know what to defend and what to attack. All military commanders, at all levels of command, rely on the success of this partnership. How well they understand it will make a big difference concerning how well it works for them and how well they work for it.

Wing Commander David J. Foster, RAF

## Lessons from the First Deployment of Expeditionary Airpower

The lens of history speaks to many of the issues that are significant in today's expeditionary airpower environment. Particularly relevant are the lessons learned during first deployment of expeditionary airpower by the Royal Flying Corps during WWI. These include:

- The use of airpower is an expensive proposition.
- Maintaining aircraft away from home station demands considerable resources.
- Attrition from active operations is often very high.
- Effective support demands the ready availability of spares.
- Transport and protecting the transportation system is critical.
- Preserving mobility (the ability to redeploy quickly) is a constant battle.
- The supply system must be adequate in scope with a margin in capacity to meet unplanned events.
- The essential *lubricant* is skilled manpower.

Group Captain Peter J. Dye, RAF