



US Army Heritage and Education Center

Analysis and Research Team

JUST ADD SOLDIERS: ARMY PREPOSITIONED STOCKS AND AGILE FORCE PROJECTION

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By Douglas I. Bell, PhD

Executive Summary

Since its establishment in the early 1960s, the Army's Prepositioning Strategy and Prepositioning of Materiel Configured in Unit Sets (POMCUS), today known as Army Prepositioned Stocks (APS), has evolved from its initial focus of defending Western Europe from a Soviet invasion to a global power projection strategy. During its history, POMCUS has successfully deterred the Soviet Union and provided for Soldiers at war in Southwest Asia (SWA), demonstrating the importance of prepositioned war materiel and unit sets to the Army's rapid mobilization and power projection capabilities. In the return of great power competition, the need for APS remains crucial, but the Army's APS stocks in the Pacific Theater today are less mature compared to Europe and SWA. While a challenge for today's Army, an examination of the history of Army prepositioning demonstrates its value and successes in enabling landpower, and reinforces the importance of establishing a robust APS strategy in the Pacific.

The Berlin Crisis of 1961 revealed the US military's inability to rapidly reinforce Europe and led to the establishment of numerous POMCUS locations in West Germany. During POMCUS's first decade, the United States (US) military was at war in Vietnam. With this conflict drawing the military's attention and resources, the hastily established POMCUS locations in Europe initially lacked functioning warehouses, personnel to carry out cyclical maintenance, and battle ready materiel. After the conflict in Southeast Asia ended, the US renewed its focus on Europe and the Soviet Union. Recognizing significant deficiencies in POMCUS, the US government and its NATO allies collectively funded its expansion, establishing and constructing numerous new locations. At the same time, the administration of President Ronald Reagan started pressing Congress to increase the number of division sets.

As the number of POMCUS sites expanded, the US Army started fielding new weapons systems in the early 1980s. Based on Army policy, the modernization of unit sets in POMCUS occurred one year after a unit gained the new weapon at its CONUS based headquarters. With this policy, the first M1s did not enter POMCUS until 1982, and they were not used in the annual Return of Forces to Germany (REFORGER) exercises until 1984. Nevertheless, the Army continuously modernized and exercised

with APS in Europe, a powerful deterrent demonstrating the US's resolve to defend western Europe during the Cold War.

Although never used to fight the Soviet Union, POMCUS proved its value during Operations DESERT SHIELD and DESERT STORM (ODS/S). In the mobilization for these operations, tanks and other equipment stored in POMCUS sites were air- and sealifted to Kuwait. After arriving in theater, the M1 tanks were modernized while other equipment was distributed to arriving units. The success in 1991 against Iraq demonstrated the value of prepositioned stocks and led to the establishment of new Army APS locations in Kuwait and Qatar that enabled Army forces to carry out annual exercises in SWA and deter threats in the region. The investment and annual exercise of this equipment helped ensure that the Army quickly and successfully staged for Operation IRAQI FREEDOM (OIF) in 2003.

The regular deployments to Iraq and Afghanistan during the 2000s eroded the readiness of APS equipment. Much of the equipment issued for OIF was in use or damaged, and the Army removed equipment from APS to accelerate the creation of two additional Brigade Combat Teams (BCTs) in 2008. This decline drew Congressional attention and the 2007 National Defense Authorization Act (NDAA) directed financial resources to reconstitute prepositioned stocks; however, estimates suggested that the creation of new Heavy BCTs for APS would not occur until 2013 or 2015.

As the Army focuses on great power competition in the 21st century, the service is currently evaluating, testing, and working to expand APS, especially in Europe and the Pacific. In Europe, the Army has a mature constellation of APS sites to conduct exercises with allies to deter threats. On the other hand, APS sites in the Pacific are less robust, with locations in Korea and Japan. In the Pacific Theater, the Army needs to work with allies to develop new APS locations and to hold annual exercises to test capabilities, assess APS equipment, and improve allied coordination.

Key Insights

1. The Army has underfunded POMCUS/APS throughout its existence, except for the Carter-Reagan build up, affecting its readiness and capabilities.
2. The modernization of APS remains an ongoing task that requires significant balancing between training, readiness, and modernization of both units and APS to ensure that deployed units are issued equipment and weapons they are trained to use.
3. The lag between issuing a unit with new equipment and the prepositioning of the same new equipment in APS unit sets hinders rapid deployment and creates vulnerabilities.
4. The composition of force structure significantly effects APS unit sets, which the Army has cannibalized to support the creation of new units.

5. The Army APS program provides ready training sets to deployed forces.
6. APS is an integral part of expeditionary, force projection capabilities.
7. As the Army prepares for potential large-scale, ground combat operations (LSGCO), the rapid deployment of heavy forces during the early stages of conflict may help avert potential disaster(s).
8. The Army needs to expand APS sites in the Pacific to ensure it meets the needs of the theater, and should hold regular exercises to test Army capabilities and APS stocks.

The Establishment, Evolution, and Challenges of POMCUS, 1955 to 1978

In 1955, as the Army prepared for a long-term forward deployed presence in Europe, it devised new policies for rotating units into and out of US Army Europe (USAREUR). While the earlier policies exchanged individual soldiers, the new policy, as part of Operation GYROSCOPE, would periodically exchange entire divisions, regiments, or battalions between overseas locations and their headquarters in the Continental United States (CONUS). The objective of GYROSCOPE was to boost unit morale, retain experienced personnel, increase reenlistment rates, develop experience at directing mass movements, and improve equipment maintenance. For this last goal, personnel rotating out of USAREUR would carry their own individual equipment back with them, but organizational and special equipment would be left behind for incoming units. This procedure would require the periodic turnover of an organization's entire equipment set, creating a heightened sense of responsibility that was supposed to encourage commanders to conduct more careful maintenance with resulting financial savings. However, the size of GYROSCOPE ultimately proved cumbersome as divisions often appeared in theater without completing training, and they were thus not fully capable on arrival. This resulted in shifting from division sized movements to battalion sized movements in 1958. There were also problems with the rotation of unlike units, which caused additional training challenges when Soldiers fell in on unfamiliar equipment.¹

The implementation of GYROSCOPE, and its subsequent revisions, was the Army's first effort to develop the skills and capacity to bolster Europe in a crisis with ready units equipped with modern, well-maintained weapons. Nevertheless, GYROSCOPE did not provide a method for rapidly reinforcing American forces in Europe. This deficiency emerged during the Berlin Crisis of mid-1961 when Soviet Premier Nikita Khrushchev threatened to sign a separate peace treaty with East Germany (GDR) and end the Western Allies' access to Berlin. Newly elected American President John F. Kennedy responded to Soviet threats by asking Congress to expand the size of American conventional military forces. Without a final peace settlement, the GDR closed the border between East and West Berlin and constructed an ad-hoc wall of barbed wire across Berlin in August 1961, a temporary structure that eventually transformed into the imposing Berlin Wall. Tensions over this decision, including the incursion of Soviet tanks into West Berlin and a standoff between American and Soviet tanks at Check Point Charlie, threatened World War III. However, back channel discussions between the US and the USSR ultimately led Khrushchev to withdraw Soviet tanks from the border of divided Berlin, and the US soon followed suit.²

¹ US Army Europe, Historical Division, "Operation Gyroscope in the United States Army Europe," 8-3.1 CN 1, 6 September 1957, 1-4.

² Odd Arne Westad, *The Cold War: A World History* (New York: Basic Books, 2017), 292-297.

During the Berlin crisis, the Commander in Chief Europe (CINCEUR) Gen. Lauris Norstad, USAF and the Joint Chiefs of Staff (JCS) recognized a serious strategic flaw: the inability of the United States to rapidly and quickly deploy forces to Europe. In response to this concern, they agreed to preposition organizational equipment for two divisions to facilitate the rapid deployment of Soldiers from CONUS to Europe. On 12 October 1961, the JCS directed CINCEUR to preposition equipment for the 4th Infantry Division (ID) and the 2nd Armored Division (AD).³

After surveying available sites, the Department of the Army (HQDA) and CINCEUR chose to preposition the equipment for the 4th ID at Spinelli Barracks in Mannheim and at Neureut Kaserne in Karlsruhe, while the equipment for the 2nd AD and ten combat-support units would be dispersed west of the Rhine at numerous depots and barracks. At these hastily identified sites, initial facilities mostly consisted of parking areas and buildings in various states of disrepair.⁴

In November 1961, liaison and maintenance (L&M) detachments from the 4th ID and 2nd AD and the ten combat and combat-support units arrived in theater to manage the prepositioned sets. They were composed principally of organizational maintenance personnel. A maximum of 3,000 Soldiers were assigned by HQDA to be stationed at the selected locations and based with host units for billeting and security. Early in 1962, USAEUR determined that the manning and organization of the caretaker units needed to be changed, and three Table of Distribution and Allowances (TDA) maintenance groups were organized, assigned the custodial mission, and attached to Seventh Army Support Command. In August 1962, the maintenance groups relieved the L&M detachments and took over on a permanent basis with a total strength of slightly under 2,000 (for location of L&M in the 1960s detachments see Figure 1).⁵

³ Ralph A. Hafner and Carl F. Blazan, "Study of Prepositioning Concept Prior to BIG LIFT," Research and Analysis Corporation Technical Paper RAC-TP-140(FOE), April 1965, 13.

⁴ Hafner and Blazan, 13.

⁵ Hafner and Blazan, 14.

Figure 1: Distribution of Maintenance Groups, June 1963

UNIT DESIGNATION	STATION
Hq/Hq Det, Inf Maint Gp	Spinelli Bks, Mannheim
Det 1, Inf Maint Gp	Spinelli Bks, Mannheim
Det 2, Inf Maint Gp	Neureut Ksn, Neureut
Hq/Hq Det, Armd Maint Gp	Kleber Ksn, Kaiserslautern
Det 1, Armd Maint Gp	Daenner Ksn, Kaiserslautern
Det 2, Armd Maint Gp	D'Isly Ksn, Pirmasens
Det 3, Armd Maint Gp	De Gaulle Ksn, Germersheim
Det 4, Armd Maint Gp	Chenevieres, France
Hq/Hq Det, Cbt Spt Maint Gp	Chenevieres, France
Det 1, Cbt Spt Maint Gp	Chenevieres, France
Det 2, Cbt Spt Maint Gp	Gerszewski Bks, Kniellingen
Det 3, Cbt Spt Maint Gp	Turley Bks, Mannheim

Source: Study of Prepositioning Concept Prior to BIG LIFT, 15-17. Table from: *usarmygermany.com*.

To test the newly instituted POMCUS sites, the Army conducted Operation BIG LIFT in October 1963. While GYROSCOPE sought to rotate units, BIG LIFT aimed to increase the size of USAREUR with additional CONUS based forces. During this exercise, 15,000 personnel and 500 tons of equipment were carried to Europe on more than 200 flights to simulate a US response to a Warsaw Pact incursion into Central Europe. Once arriving in Europe, Soldiers went to POMCUS depots to collect equipment. The exercise was successful in achieving its fundamental objective—to deploy a large force quickly overseas. However, observers noted that much of the equipment was obsolete, consisting mostly of older M48 tanks and M59 personnel carriers, and that replacement parts were incompatible with current equipment. These factors led USAREUR CG GEN Paul L. Freeman Jr. to describe the exercise as the “big hoax.”⁶

Following on the criticisms of BIG LIFT, the Army sought to update equipment and better manage POMCUS sites by establishing the 7th US Army Augmentation and Readiness Group in April 1964. A year later, the group was redesignated the USAREUR Augmentation and Readiness Group. In October 1970, the Army again renamed the unit Combat Equipment Group-Europe (CEGE) and designated it a subordinate to the 21st Support Command.⁷

In 1968, the Army moved several combat and combat support groups stationed in Germany back to the United States to improve the US balance of payments position. Because of the expansion of US defense expenditures starting in 1958, the US started

⁶ David I. Goldman, “Operation Big Lift,” U.S. Army Center of Military History, May 7, 2012. https://www.army.mil/article/28749/operation_big_lift.

⁷ Luanne J. Sleger, “Combat Equipment Group, Europe and the POMCUS Mission,” *Quartermaster Professional Bulletin* (Summer 1993): 24.

hemorrhaging gold reserves (global currencies were still pegged to a nation's gold reserves), leading to the "gold-flow crisis." To reduce the outflow of gold and the cost of the military, two brigades of the 24th ID (Mechanized), the 3d Armored Cavalry, and some combat support units, a total of 28,000 Soldiers, returned to CONUS, but stored their equipment in POMCUS locations, increasing POMCUS holdings to three combat division unit sets plus non-divisional support.⁸

The forces returning to the US, based on Allied agreements, became REFORGER units, and they participated in the annual exercise. Under the NATO arrangements, CONUS based units were airlifted each year for training in West Germany with NATO Army Groups. These annual exercises, carried out from 1969 to 1993, tested and enhanced military capabilities as well as evaluated the effectiveness of POMCUS stocks and procedures.⁹

By the early 1970s, units arriving in Europe relying on POMCUS could not effectively perform their assigned missions in the required time because of the inoperable conditions of the equipment. The GAO identified many problems, including dilapidated vehicles, rundown storage and maintenance facilities, depleted maintenance personnel, and warehouses that were ineffective in controlling the humidity (for an example POMCUS site in the 1970s see Figure 2). The report further noted that the Army was working to fund and repair the equipment, but GAO contended that the reactive effort was not enough and that the Army needed a continuous updating and repair plan in place. GAO even went as far as to suggest the abandonment of POMCUS sites in Europe.¹⁰

The Department of Defense (DoD) responded to the GAO report by arguing that prepositioning was crucial to enable the strategic mobility necessary to implement national strategy. Additionally, during the 1973 Yom Kippur War, the Office of the Secretary of Defense (OSD), over the protests of the Army, directed POMCUS material from European warehouses sent to resupply the Israeli Army. Reluctantly, the Army sent the most modern and battle-ready equipment prepositioned there, including 400 tanks, 900 armored vehicles, and 100 howitzers. The Army replaced little of this equipment in the 1970s.¹¹

⁸ Department of the Army Historical Summary FY 1969, (Washington, DC: Center of Military History, 1973), 11; Carl Franklin, "The Efficacy of Prepositioning," The Industrial War College, Washington, DC, 1985, 12; David I. Goldman, "The Transatlantic Tussle – A Historical Case Study on How to Handle NATO," *War on the Rocks*, March 18, 2019. <https://bit.ly/2Msfjne>.

⁹ Larry L. Harless, "A POMCUS Primer," *Army Logistician* 15, no. 2 (March-April 1983): 6.

¹⁰ GAO, "Problems with U.S. Military Equipment Prepositioned in Europe," B-146896, Unclassified Summary, March 1973.

¹¹ Robert P. Grathwol and Donita M. Moorhus, *Building For Peace: U.S. Army Engineers in Europe, 1945-1991* (Washington, DC: Center of Military History, 2005), 293.

Figure 2: Spinelli Barracks, Mannheim, August 1971



Source: *usarmygermany.com* via Roger Horton

The GAO issued a follow-up report in 1975 and found that many of the same problems remained, though the condition of equipment had improved. The Assistant Secretary of the Army (Installations and Logistics) confirmed many of the problems identified in the GAO reports and said that POMCUS deficiencies were receiving high-level attention within the DoD and the HQDA. The problems plaguing POMCUS also had gained the attention of Congress, and they provided \$200 million to update and expand USAREUR's storage in 1976, including the construction of new 40,000 square foot humidity-controlled warehouses.¹²

According to GAO, Congressional funding finally revitalized POMCUS units and equipment. Equipment maintenance improved due to the successful completion of the cyclic maintenance programs and more humidity-controlled storage facilities which helped preserve equipment from corrosion. Nevertheless, space shortages, ill-equipped shops, and unheated facilities continued to exist. GAO also recommended establishing a test to better simulate conditions of annual deployment of troops assigned POMCUS; identifying and obtaining the repair parts to support wartime needs; monitoring the cyclical maintenance program to ensure it stayed on schedule; improving the readiness and reporting system; and accurately recording shortages. The GAO also summarized the stock of equipment on hand with accompanying shortages, but these specifics remained classified. The GAO noted that out of an authorized total of \$778.4 million dollars, current stocks held only \$404.5 million worth, a shortage of \$373.9 million.¹³

¹² GAO, "U.S. Military Equipment Prepositioned in Europe – Significant Improvements Made But some Problems Remain," Report LCD-78-431A, December 5, 1978, 3-4; Grathwol and Moorhus, 294.

¹³ GAO, "U.S. Military Equipment Prepositioned in Europe – Significant Improvements Made But some Problems Remain," Report LCD-78-431A, December 5, 1978, 11.

POMCUS Expansion, 1979 to 1990

The shortcomings of POMCUS found by the GAO, along with the US government's growing concerns about NATO's military disadvantage vis-à-vis the Warsaw Pact, resulted in large investment into POMCUS during the early 1980s. The impetus for this renewed effort was a 1978 worldwide deployment exercise called Exercise NIFTY NUGGET. The exercise clearly showed that the US was unprepared to sustain combat in Europe following years of fighting in Southeast Asia. During NIFTY NUGGET, transportation to Europe via air, land, and sea all showed a lack of flexibility, and unity of command proved impossible, as no single commander had the authority to coordinate and direct the various transport capabilities. Using the lessons of this exercise, the US and its NATO allies adopted a Long-Term Defense Program (LTDP) that established a series of five-year plans to improve NATO mobilization and reinforcement procedures.¹⁴

The LTDP marked a shift in the source of POMCUS support, with less money coming from the Military Construction, Army (MCA) fund and more coming from the NATO Common Infrastructure Program (see Figure 3 for POMCUS funding changes). The US worked to convince its NATO partners that the new infrastructure projects were crucial to increasing the readiness of forces in Central Europe. In 1979, the NATO ministers approved funding for POMCUS sites and in the following year's NATO POMCUS budget received around \$108.6 million. With NATO serving as the predominant source of funding, the DOD named the expanded program Prepositioned Organizational Materiel Storage Sites (POMSS).¹⁵

¹⁴ Andrew Krepinevich and Robert O. Work, "A New Global Defense Posture for the Second Transoceanic Era," 2007, 121-122; CBO, "Strengthening NATO: POMCUS and other Approaches," February 1979, 3-4; William K. Brehm and Ernst Volgeneau, "Evaluation Plan: Exercise NIFTY NUGGET 78," Logistics Management Institute, 23 October 1978.

¹⁵ Grathwol and Moorhus, 294-295.

Figure 3: Long Range Security Program, 1976-1982

Year	Military Construction, Army (\$ thousand)	Other ^a (\$ thousand)	NATO (\$ thousand)	Total	Number of Sites
Fiscal year 1976	\$340	--	--	\$340	17
Fiscal year 1977	419	7,500	--	7,919	26
Fiscal year 1978	68	3,200	--	3,268	5
Slice 28 ^b	--	--	1,800	1,800	1
Slice 29	--	--	57,400	57,400	27
Slice 30	--	--	5,700	5,700	3
Slice 31	--	--	40,500	40,500	24
TOTAL	\$827	\$10,700	\$105,400	\$116,927	103

Source: Briefing Book, Europe Trip, Maj. Gen. Ames S. Albro, Jr.

^aCongress specified funds to purchase intrusion detection system (IDS) components.

^bNorth Atlantic Treaty Organization allocations (Slice 28 and following) overlap with U.S. fiscal years 1977 and following.

Source: Grathwol and Moorhus, *Building for Peace*, 286.

With NATO agreeing to fund the construction of new POMCUS sites, the DoD later announced a plan to stock these locations with three new division sets of equipment and 43,000 new support personnel. Because US planners considered NATO's Northern Army Group undermanned and ill prepared, the new POMCUS locations were in northern Europe (See Figure 4 for NATO Army Group areas of responsibility). The Army eventually chose a site in Luxembourg for the location of the first new division set, which held 89,000 tons of stock, including nearly 7,000 vehicles and 600 tanks, and reached an agreement with Belgium and the Netherlands in 1981 for four new POMCUS locations that started operating in 1984 (For expanded POMCUS site locations see Figure 6).¹⁶

¹⁶ Congressional Budget Office, "Strengthening NATO: POMCUS and other Approaches," February 1979, xv; Steve Maness, "POMCUS Stationing in the Netherlands," *Army Logistician*, 19 no. 1 (January-February 1987): 18-21; Mark Swearingen, "War Reserves Stored in Luxembourg" *Army Logistician*, 13 no. 1 (January-February 1981): 24-25.

Figure 4: NATO's Central Regional (Showing Corps Sectors and Storage Sites), 1974.



Source: GAO, "U.S. Military Equipment Prepositioned in Europe," 5.

Although agreeing to fund one new division set, Congress remained concerned about how creating the other two sets would affect Army readiness (for POMCUS composition in 1979 see Figure 5). This worry increased when GEN Bernard W. Rogers, Supreme Allied Commander Europe (SACEUR), testified that the Army sought to place up to 30 percent of current equipment for active units and no more than 50 percent of reserve unit equipment in POMCUS storage; essentially seizing active and reserve units' equipment and placing it in POMCUS warehouses. This would leave active units with 70 percent of their current equipment and the reserve units with 50 percent, a concept often shorthanded as the 70/50 threshold. To convince Congress that stripping this equipment from active and reserve units and placing it in POMCUS would not hinder readiness, the Army conducted two studies to establish the Minimum Equipment Levels for Training (MELT).¹⁷

¹⁷ U.S. House of Representatives, Committee on Appropriations, Subcommittee on Defense, Hearing on Department of Defense Appropriations for 1980, Part 2, 96th Congress, 1979, 872.

Figure 5: Composition of POMCUS 1979

Package	Units
2+10	2 Divisions 10 Miscellaneous Nondivisional Units
REFORGER	1st Infantry Division (Mechanized) 3rd Armored Cavalry Regiment 74 Miscellaneous Nondivisional Units
MRLOGAEUR	36 Miscellaneous Combat Support Units
Medical Augmentation	28 Medical Units

Source: *Strengthening NATO: POMCUS and Other Approaches*, 6.

The test for active duty units evaluated three combat support units of 3,200 Soldiers on skill-qualifications, with a final training exercise after training with only 70 percent of their equipment. The study showed that training proficiency could be maintained if training time were increased and more resources were made available. However, it was also concluded that morale sagged among officers and NCOs over the details of managing and sharing equipment and only peacetime training proficiency could be maintained. The second study focused on the Reserves and concluded that there was no appropriate level of equipment for all reserve forces, since these forces' missions and deployment times varied so widely. On the other hand, the study indicated that withdrawing equipment to 50 percent of a unit's requirement would adversely affect the Reserves training and capabilities after mobilization. Although the Army later testified that this was a sound method for maintaining readiness and supplying POMCUS stocks, the Army decided in 1981 to terminate the program of withdrawing equipment from units and to instead fill POMCUS stocks from newly purchased equipment.¹⁸

¹⁸ CBO, "Equipping the Total Army and POMCUS Sets 5 And 6," July 1984, 21-24; U.S. Senate, Committee on Armed Services, Hear on Department of Defense Authorization for Appropriations for Fiscal Year 1982, First Session, Part 2, 97th Congress, 1981, 679-680.

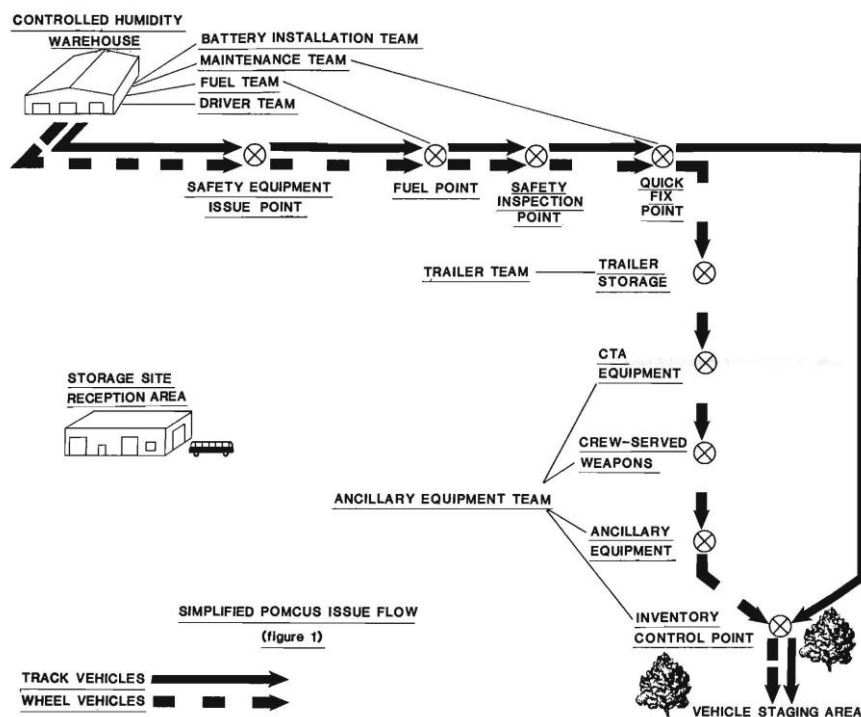
Figure 6: Prepositioned Material Locations 1981



Source: Grathwol and Moorhus, *Building for Peace*, 296.

As debates over the fifth- and sixth-unit sets persisted throughout the 1980s, POMCUS sites started operating at a higher level of activity. During a typical year, CECE would swap out more than 1,000 items, receive 5,000 new items, and return 5,000 items to the Army supply system. Items stored in the now 83 humidity-controlled warehouses required inspection and repair every four years while equipment stored in conventional warehouses or outside was checked every two years. With the introduction of these new facilities, effective maintenance and proper storage of equipment became possible (for POMCUS site workflow see Figure 7). Batteries could be removed from vehicles for separate storage, checked, and charged in special shops adjacent to the controlled-humidity warehouses in which the vehicles remained stored. Additionally, CECE policies clearly tracked and maintained POMCUS equipment. The Supply Property Book Officer at each Combat Equipment Company (CEC) conducted a 100 percent inventory every year and thoroughly inspected all equipment before it went into storage. The storage program operated on a cyclic maintenance basis. Each piece of equipment was activated, operated, and inspected for deficiencies every two or four years. The improvements were clear during the annual REFORGER exercises. During REFORGER '78, CECE issued 3,200 vehicles and more than 3,100 of them started and moved to assembly sites without malfunction. Of those requiring repair, only 10 did not go into the field. In fact, the readiness rates for POMCUS equipment in 1977 and 1978 exceeded Army-wide rates.¹⁹

Figure 7: POMCUS Issue Flow for Wheeled and Tracked Vehicles



Source: *ARMOR Magazine*, July-August 1985, 15.

¹⁹ Grathwol and Moorhus, 294; Sleger, 25-26; Mark Swearengen, "POMCUS: Equipment for Readiness in Europe," *Army Logistician*, 12, no. 1 (January-February 1980): 20-23.

POMCUS Modernization, 1980 to 1990

The updates to equipment and storage facilities in the 1980s mostly improved readiness, but the Army was also working to modernize POMCUS stocks. Since the 1970s, the Army had been developing new weapons system, including the M1 Abrams tank, the M2/3 Bradley fighting vehicle, the AH-64 Apache helicopter, and the Multiple Launch Rocket Systems (MLRS). As these weapons systems started coming on line in the 1980s, questions arose about how to both modernize and train the force, as well as how to modernize and update POMCUS warehouses.²⁰

As the first CONUS based units started receiving and replacing M60 tanks with the new M1 Abrams, Congress pressed Secretary of the Army John O. Marsh to discuss the relationship between modernizing units and POMCUS as well as the decision not to complete the purchase of spares, test sets, and other items for POMCUS unit sets. Marsh informed Congress that Army tank distribution policy placed a unit set of like tanks in POMCUS stock within one year of equipping a corresponding unit set in the “D-Day” force for deployment to Europe. Based on this policy, he estimated that the first M1 tanks would enter POMCUS in 1982. According to Marsh, this rationale was based on training requirements. Once a unit received the M1, it, as well as its organizational mechanics, would stop all training on the M60. Marsh’s statement before Congress proved accurate as the III Corps received 63 M1s in January 1981 and the first M1s fielded in Europe arrived in January 1982 (for first M1 drawn from POMCUS see Figure 8).²¹

Marsh also noted that there were very few common parts between the M60 and the M1, which required more parts for POMCUS stocks. When further questioned about the availability of spare parts in POMCUS, Marsh said that the commander of a reinforcing unit would be required to bring organizational level tools, test sets, and repair parts from CONUS, which was enough equipment to occupy one third of a C-141 cargo aircraft (total load capacity 60,000 pounds). This equipment, along with those in POMCUS, would support the unit when it deployed. Marsh also informed Congress that the deliveries of this equipment for POMCUS would start in second quarter of 1983. The Army delivered four battalion sets of M1 tanks during Fiscal Year 1984.²²

²⁰ CBO, “Army Ground Combat Modernization for the 1980s: Potential Costs and Effects for NATO,” November 1982, xiii.

²¹ Army Material Fielding Agreement, M1 Abrams Tank System, Between III Corps and FT Hood and Program Manager M1 Abrams Tank, <https://bit.ly/3gtidmE>; Department of Research and Information, Defense Systems Management College, “Lessons Learned M1 Abrams Tank System,” November 1982, C-5, <https://apps.dtic.mil/dtic/tr/fulltext/u2/a135524.pdf>; U.S. House of Representatives, Subcommittee on the Department of Defense of the House Armed Services Committee, “Department of Defense Appropriations for 1983,” 97th Congress, 548-549.

²² U.S. House of Representatives, Subcommittee on the Department of Defense of the House Armed Services Committee, “Department of Defense Appropriations for 1983,” 97th Congress, 548-549; Dwight Oland, *Department of the Army Historical Summary: Fiscal Year 1984* (Washington, DC: Center of Military History, 1995), 144.

Figure 8: First M1 Abrams drawn from POMCUS in August 1984



Source: US National Archives. <https://bit.ly/3l0t9q>.

The modernization of POMCUS equipment was part of the Army's larger Force Modernization Program, but the Army needed a method for delivering everything simultaneously to the gaining unit. To ensure the delivery of new weapons systems, the Army Material Command (AMC) developed the "total package" concept in December 1982 which evolved into the Total Package/Unit Material Fielding (TP/UMF), later Total Package Fielding (TPF). It went into effect in Fiscal Year 1984. The TPF concept was a material distribution process that concurrently fielded a consolidated sustainment package along with the end item to the gaining command. The package included the end item and associated support equipment, special tools, spare parts, and test equipment.²³

Once a unit was named to field the system under the TPF concept, the fielding command identified all the requirements, including facilities and funding, and coordinated with the Depot Systems Command (DESCOM). DESCOM, in conjunction with the fielding command, designated the central staging area site and received, stored, and shipped the material through its CONUS Unit Material Fielding Points. The fielding command also needed to run the staging sites, including end item processing, joint inventories with the gaining unit, assisting customers to establish accountable

²³ Herman T. Palmer, "Total Package Material Fielding," *Ordnance Magazine*, Fall 1985, 12-15.

records, submitting discrepancy reports, and correcting any deficiencies on the spot if possible (for Material Fielding Schedule in the 1980s see Figure 9).²⁴

Figure 9: Materiel Fielding Schedule

STRUCTURE	1986-1991	1992-1997	1998-2004
Force Package 1 Forward-deployed units POMCUS M + 10 Training/test base Pre-positioned war reserves	M1A1 BFV	M1A2 BFVA2	BLOCK III TANK
Force Package 2 Early arriving units	M1/M60A3 BFV/M113	M1A1 BFV	M1A2 BFVA2
Force Package 3 Later arriving units	M60A1/A3 M113	M1/M60A3 BFV/M113	M1A1 BFV

□ Materiel is fielded to units according to their deployment status.

Source: Materiel Fielding in CONUS, "Army Logistician" January-February 1991, 14.

To prepare receiving units for the new equipment, a materiel fielding team (MFT) provided the gaining unit with skilled personnel, facilities, support for the processing, inventory, handoff, and new equipment training, as well as documented any problems or shortages discovered in the fielding process. Initially called the Abrams Tank Materiel Fielding Team, it merged with other fielding teams in 1987 to form a consolidated field team under the Program Executive Officers (PEO) for Close Combat Vehicles. Later renamed the Armored Systems Modernization Materiel Fielding Team-Europe (ASM MFT-E) and based in Vilseck, Germany, it performed the TPF for combat vehicles for active units, POMCUS, and reserve storage sites in Germany, the Netherlands, and Luxembourg. The purpose of the MFTs, according to GEN William Tuttle, Jr., commander of AMC, was to supply a comprehensive system that provided a continuum from "factory to foxhole."²⁵

The TPF contractor prepared the materiel for the gaining unit seven months before fielding. The contractor then shipped the items to Europe where the MFTs received them and prepared them for de-processing in Vilseck, though they maintained field offices in Kaiserslautern and Mainz. The Kaiserslautern office held responsibility for fielding vehicles for POMCUS and reserve storage, and also for managing field service support for the 21st Theater Army Area Command. The Mainz field office monitored services for V Corps while Seckenheim fielded classified items. The free flow of TPF packages created delivery problems, and many items were lost in the "black-hole"

²⁴ Palmer, 12-15.

²⁵ Gayle V. Frank and Michael B. Bonner, "Materiel Fielding in Europe: Seamless Logistics at Work," *Army Logistician*, (January-February 1991): 10-11.

between shipment and delivery. For example, technical manuals were found in Pakistan, packages were discovered among stacks of cartons at the Frankfurt airport, and some items were found on the back of a trailer in Nuremberg.²⁶

When the MFTs received combat vehicles, they inspected them for defects and repaired them if necessary before issue. The MFT reported any deficiencies to the Program Manager's offices and, if necessary, to the production lines. This was supposed to correct any flaws before the vehicles reached the end users. Moreover, to improve the transfer, the gaining unit received combat systems at Vilseck so that units could combine their scheduled gunnery practice with new equipment training. Between 1981 and 1991, the Armored Systems Modernization Materiel Fielding Team-Europe fielded more than 9,800 combat vehicles for USAREUR and POMCUS.²⁷

While this system functioned smoothly, it did face some difficulties, particularly between the distribution of equipment to Army units and units' equipment authorization documents. For example, there was inadequate coordination between documentation and changes in the equipment distribution plan, and the pace and volume of new equipment introduction, combined with doctrine and force structure changes, exceeded the Army's capacity to effectively absorb them. The Army and the DoD recognized these problems, with the Assistant Secretary of Defense for Production and Logistics Jack Katzen acknowledging the "turbulence that accompanied the Army force modernization program."²⁸

To manage the changes in force structure and equipment caused by modernization, the Army adopted a "Living Table of Organization and Equipment" (LTOE) system to portray a unit's transition towards full modernization (for a visualization of the LTOE see Figure 10). The primary elements of this system included the base TOE (BTOE), the incremental change packages (ICPs), an intermediate TOE (ITOE), and an objective TOE (OTOE). The BTOE was the least modernized form and included only the equipment available while the ITOE listed the unit's organization, personnel, and equipment at any point in the modernization process. The BTOE became an ITOE with the application of ICPs that portrayed organization, personnel, and equipment requirements incrementally as resources became available.²⁹

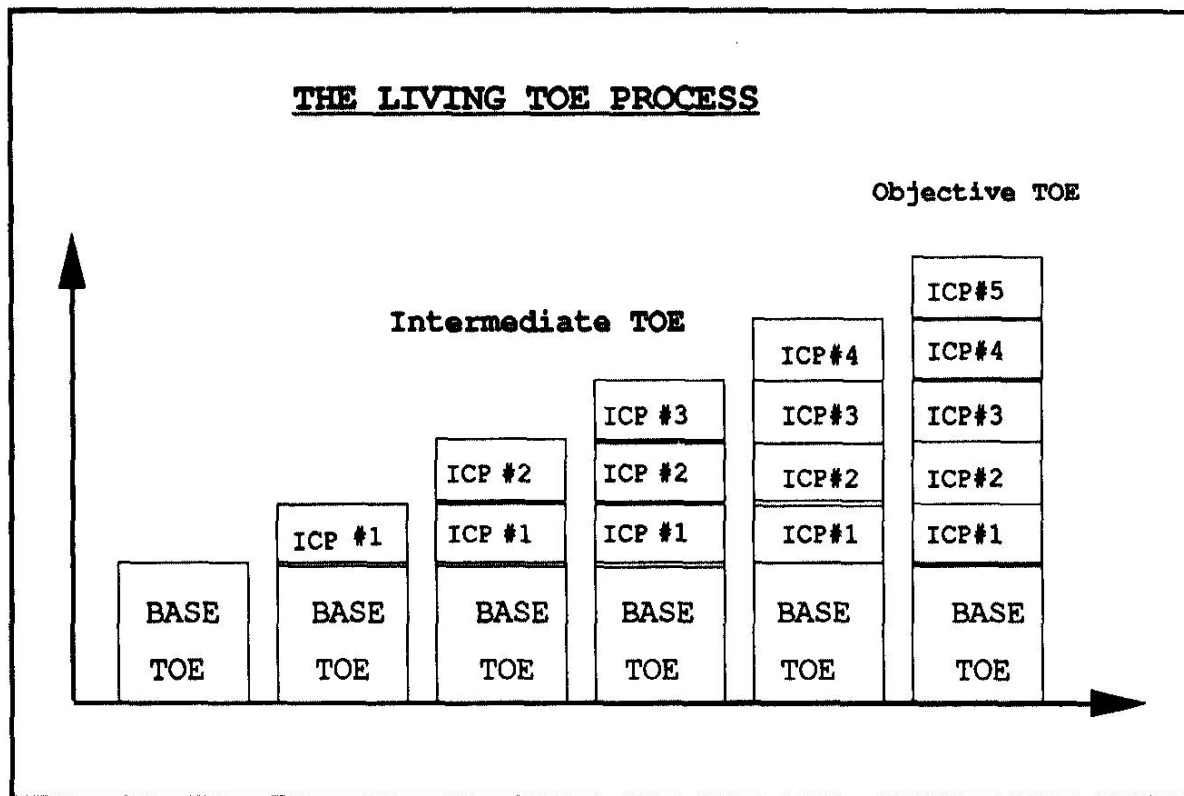
²⁶ Frank and Bonner, 10, 12.

²⁷ Frank and Bonner, 11-12.

²⁸ GAO, "Distribution and Documentation Problems Impeded Operations," GAO/NSIAD-89-71, January 1989.

²⁹ Ibid.

Figure 10: The Living TOE Process

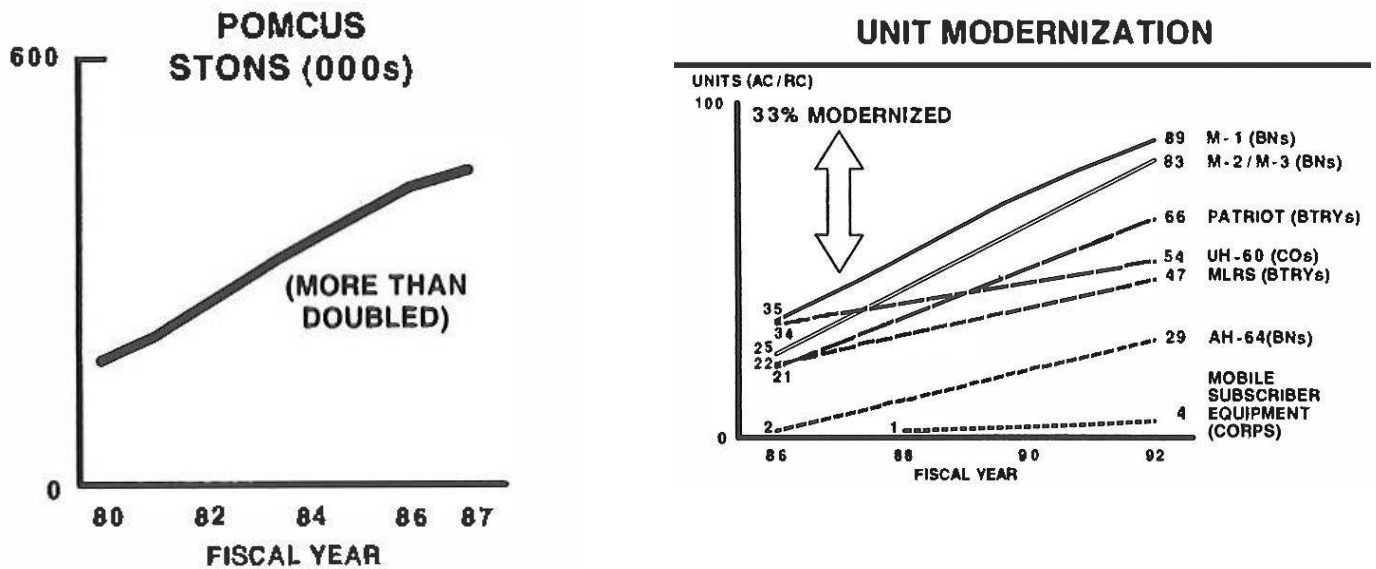


Source: GAO, "Distribution and Documentation Problems Impeded Operations," 16.

As the Force Modernization Program progressed throughout the 1980s, the Army added 130,000 short tons of equipment to POMCUS, which increased POMCUS holdings by 20 percent (see Figure 11). Moreover, in 1983, Congress finally approved the last two unit sets for POMCUS, but constrained their delivery based on the Army's earlier studies. Specifically, Congress declared that no equipment could be placed in the two additional POMCUS sets until the Army met at least 70 percent of the equipment needs of its active units and 50 percent of the needs for the Reserves. Congress emplaced this 70/50 threshold on the Army because of concerns about erosions of readiness of CONUS based forces and reduced flexibility of those units should they be needed in theaters outside of Europe. Worry over the vulnerability of POMCUS sites to enemy attacks was another source of Congressional unease.³⁰

³⁰ CBO, "Equipping the Total Army and POMCUS Sets 5 And 6," July 1984, v-vi.

Figure 11: Increase in POMCUS short tons & Army modernization progress chart from 1987



Source: Association of the US Army, "The FY 1988 and FY 1989 Army Budget," 17, 20.

Based on this Congressional requirement, the Army developed a plan to distribute the new weapons systems to active units and POMCUS. Starting in 1984, the Army planned to place in POMCUS 27 percent of the M1 tanks for unit sets one through four and, by 1989, the Army estimated that these numbers would improve to 95 percent of the M1s (see Figure 12 for projected POMCUS modernization). This process of receiving, retrograding, and modernizing the M1 kept CECE extremely busy, especially with the expansion of the unit sets to six divisions and an armored cavalry unit. Nevertheless, these recently arrived M1s quickly became outdated and newer M1A1s started arriving in 1986. As these new tanks arrived at POMCUS sites, CECE retrograded the older M1s back to CONUS for National Guard units or turned them over to Theater Reserve.³¹

³¹ CBO, "Equipping the Total Army and POMCUS Sets 5 And 6," July 1984, 12; "Combat Equipment Group U.S. Army, Europe" *Ordnance Magazine*, November 1990, 28; Fact Sheet for Dutch GOs Attending RSAE Opening, 20 November 1985.

Figure 12: Army Combat Equipment Objectives for Distribution for 1984 and 1989

Combat Equipment	To Meet Thresholds		Percent To Meet POMCUS Requirements			
			1984		1989	
	1984	1989	Sets 1-4	Sets 5-6	Sets 1-4	Sets 5-6
M60 and M48 Tanks	Yes	Yes	100	100	100	100
M110 Howitzers	Yes	Yes	100	100	100	100
M109 Howitzers	Yes	Yes	100	100	89	0
M901 Improved TOW Vehicles	Yes	Yes	100	0	100	100
M113 Personnel Carriers	Yes	Yes	98	0	100	76
M1 Tanks	Yes	Yes	27	a/	95	0
MLRSs	Yes	Yes	0	a/	81	0
Bradley Fighting Vehicles	No	No	0	0	0	0

a. None required.

Source: "Equipping the Total Army and POMCUS Sets 5 And 6,"¹²

POMCUS in DESERT STORM

When the Cold War ended in 1989, it appeared as if CEGE's almost 30-year mission in Europe was over, and the Army initiated plans as part of its force restructuring to reduce CEGE's size. However, on 2 August 1990, Saddam Hussein's Iraqi army crossed the international border and occupied the nation of Kuwait. Initially, it appeared that German based US units would not participate in desert warfare, but Desert Shield Operations Order 12 directed the first European augmentation to the newly established 22nd Support Command (SUPCOM) (Provisional) in Dhahran, Saudi Arabia. On 29 August, 27 days after the occupation of Kuwait, the first CEGE Soldiers went to Saudi Arabia, a decision that demonstrated the value and future importance of prepositioning stocks for forward deployment.³²

In September, senior planners knew that CEGE would support the war effort with equipment as well as Soldiers, especially because of POMCUS stocks in relative proximity to Saudi Arabia and the shortages of strategic airlift. Orders eventually arrived to ship four mechanized infantry battalions to Southwest Asia. In addition, the Armored Systems Modernization Team-Europe briefed MG William G. Pagonis, commander of the 22nd SUPCOM, on 12 October about a program to modernize heavy forces in Southwest Asia using POMCUS assets. This program proposed that CONUS based units would arrive in-theater with their old M1 tanks and exchange them for POMCUS

³² William L. Brame, "Building the Storm," *Army Logistician*, (January-February 1993): 14.

M1A1 tanks before deploying to assembly areas. The Army Central Command (ARCENT) approved this plan and requested POMCUS M1A1 repair part packages.³³

Planning for tank shipments by CECE to the Middle East started on 7 October. In Germany and the Netherlands, CECs and group planners identified tanks and coordinated rail transport to Bremerhaven or Rotterdam Harbor and soon started the process of shipping six battalions' worth of material; however, as the US ramped up its mobilization efforts, requests poured into CECE for equipment, including a jump tactical operations center (TOC) that CECE built from scratch for ARCENT. The TOC left Rhine Main AFB with delivery instructions written on notecards. In total, CECE sent 16 battalions of M1A1 tanks, 3 squadrons of M3 armored cavalry vehicles, 3 battalions of 155-millimeter self-propelled howitzers, and more than 3,400 HMMWVs to the Middle East.³⁴

While CECE organized and shipped equipment from POMCUS locations, Army leaders determined that the M1A1s needed to be upgraded to the M1A1 Heavy Armor (HA), which was the only version considered superior to Iraqi tanks. Recognizing the need to modernize the tanks before engaging with the Iraqi Army, the Army decided that the modernization and exchange of tanks needed to occur in theater. Under the direction of COL David O. Bird, an extended fielding team of 622 people that included former New Equipment Transition (NET) team members repaired and upgraded tanks. The initial production goal of eight tanks per day was raised to twelve, but the average was about 20 tanks per day. Between November 1990 and the start of ground operations on 24 February 1991, 1,200 M1A1 and M1A1 HA tanks were modified, repaired, and issued through the M1A1 rollover program.³⁵

The field modernization for ODS was impressive, but not all units went into combat with M1A1s. According to BG (R) Donald F. Schenk, the XO of the 2nd Brigade, 1st ID (Mechanized), when his brigade deployed from Fort Riley to Saudi Arabia, it was required to bring its M1s with them, even though it was a REFORGER unit with POMCUS equipment stationed in Germany. Schenk noted that his unit had finished training for the M1A1 and that every unit was supposed to have the M1A1 when crossing the line of departure. Even though the intent was for his brigade to draw M1A1s in Saudi Arabia, they did not have sufficient time and went to war with M1s. Comparing his unit to others, Schenk concluded that they “were the least modernized brigade in all of the Third Army” and “the least modernized tank-heavy brigade in all of Central Command . . . Even the Marines had M1A1 tanks.”³⁶

³³ Brame, 14-15.

³⁴ Brame, 15.

³⁵ Steve E. Dietrich, “In-Theater Armored Force Modernization” *The Military Review*, (October 1993): 41-44.

³⁶ HQ TACOM, AMTA-MH, “Brig. Gen. (Ret.) Donald F. Schenk: transcript of oral history interview,” 1 November 2018, audio 43:06-1:02, RS 037-03.

In addition to POMCUS in Europe, Prepositioned stocks in Diego Garcia also contributed to the building the theater and equipping the Army as well as the 7th Marine Expeditionary Force and the USAF. The majority of these supplies left Diego Garcia on 8 August and arrived in Saudi Arabia one week later. Collectively, the US military’s Sea- and Airlift capabilities supplied two Army corps of 300,000 Soldiers in six months’ time (see Figure 13 for Afloat preposition for ODS).³⁷

Figure 13: Afloat Prepositioning for ODS

AFLOAT PREPOSITIONING FORCE (APF) ACTIVATION/FIRST VOYAGE BY SEAPORT OF DEBARKATION (SPOD) ARRIVAL DATE*							
Ship Name	Activation Date	Activation Location	Departure Date	SPOD Location	SPOD Arrival	Short Tons	Unit and Cargo
<i>Anderson</i>	7 AUG 1990	Diego Garcia	8 AUG 1990	Al Jubayl	15 AUG 1990	10,270	7th MEB, USMC Eq. & Supplies
<i>Bonnyman</i>	7 AUG 1990	Diego Garcia	8 AUG 1990	Al Jubayl	15 AUG 1990	10,174	7th MEB, USMC Eq. & Supplies
<i>Hauge</i>	7 AUG 1990	Diego Garcia	8 AUG 1990	Al Jubayl	15 AUG 1990	12,199	7th MEB, USMC Eq. & Supplies
<i>Fisher</i>	7 AUG 1990	Diego Garcia	8 AUG 1990	Al Jubayl	24 AUG 1990	9,999	7th MEB, USMC Eq. & Supplies
<i>Baugh</i>	7 AUG 1990	Jacksonville, Florida	10 AUG 1990	Al Jubayl	5 SEP 1990	10,400	7th MEB, USMC Eq. & Supplies
<i>Austral Rainbow</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Ad Damman	17 AUG 1990	22,652	USA/USAF Eq. & Supplies
<i>Green Harbour</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Ad Damman	17 AUG 1990	20,494	USA/USAF Eq. & Supplies
<i>Green Island</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Ad Damman	17 AUG 1990	24,389	USA/USAF Eq. & Supplies
<i>American Cormorant</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Ad Damman	18 AUG 1990	6,918	USA/USAF Eq. & Supplies
<i>Santa Victoria</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Ad Damman	18 AUG 1990	9,617	USA/USAF Eq. & Supplies
<i>American Kestrel</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Abu Dhabi	19 AUG 1990	20,063	USA/USAF Eq. & Supplies
<i>Advantage</i>	8 AUG 1990	Villefranche, France	9 AUG 1990	Jeddah	20 AUG 1990	9,410	USA/USAF Eq. & Supplies
<i>Noble Star</i>	8 AUG 1990	Diego Garcia	9 AUG 1990	Ad Damman	21 AUG 1990	3,434	USA/USAF Eq. & Supplies

Source: J. Travis Moger, “The Gulf War at 30,” *Army History*, PB20-21-1 no. 118 (Winter 2021): 9.

Prepositioning from the 1990s to OIF

POMCUS proved its value during ODS/S, but by the mid-1990s, like earlier eras, a review of POMCUS materials indicated a decline in readiness. Part of this decline resulted from the end of the Cold War and the Army’s decision to draw down forces in Europe, which also permitted CEGE to relax POMCUS standards as it prepared to transfer to AMC for the fiscal year 1993. In fact, a 1995 report from Combat Equipment Battalion West, headquartered in Landstuhl, reflected a dire state of affairs: only 17 of 116 M1A1 tanks were fully mission capable (FMC) and only 35 of 210 Bradleys were FMC.³⁸

A report conducted by the GAO in 1994 also noted the poor state of POMCUS material, stating that 83 percent of “non-excess” equipment was FMC, but CEGE did not have the authorized quantity on hand for 8 of 21 types of equipment that had readiness data. According to GAO, the low readiness rate of POMCUS equipment resulted from

³⁷ J. Travis Moger, “The Gulf War at 30,” *Army History*, PB20-21-1 no. 118 (Winter 2021): 9-10.

³⁸ GAO, “Most POMCUS Equipment Does Not Meet Readiness Goals,” August 11, 1994; CEBW Monthly Readiness Report, April 15, 1993.

ODS/S. It also reported that much of the equipment was damaged during Operations RESTORE HOPE and SUPPORT HOPE and in need of major repairs to bring it up to the Army's 10/20 maintenance standard. Yet, while stressing that these operations damaged POMCUS equipment, GAO also noted that much of the equipment pulled for these missions was never returned; instead, it was replaced by equipment from deactivating units. The maintenance needed to repair and upgrade turned-in equipment to reach 10/20 standards was more labor intensive than the CECE sites could provide.³⁹

Although readiness levels in Europe were declining, major changes in the US military strategy following the end of the Cold War decreased the amount of prepositioned stock in Europe and placed more of it in strategically desirable locations. The JCS initiated this change when they voiced their concerns over the length of time it took to deliver heavy forces and their equipment for ODS/S. A 1992 congressionally mandated Mobility Requirements Study (MRS) not only advocated for increasing air- and sealift capabilities, but also recommended that the Army preposition stocks of heavy equipment and combat support units onboard ships. In response, the Army developed the Army Strategic Mobility Program (ASMP), a program that encouraged the prepositioning of equipment and combat support units onboard ships in the Indian Ocean, outlined the need for additional sealift and preposition afloat ships, and called for upgrading all CONUS-based elements necessary to move forces to air and seaports.⁴⁰

In 1995, the JCS approved the MRS Bottom-Up Review update. The update recommended increasing the Ready Reserve Fleet, the procurement of 19 Large, Medium Speed Roll-on/Roll-off Ships (LMSRs), the prepositioning of 16 ships in SWA, and the procurement of 120 C-17 aircraft. With the greater focus on power projection beyond Europe, the MRS also led to a change in name for prepositioned stocks from POMCUS to the Army Prepositioning Stock Program (APS). Lastly, the MRS included the development of a timeline to deploy a five-division contingency force, with associated support structure, to anywhere in the world within 75 days.⁴¹

With an evolving prepositioning strategy, the Army decided to reduce APS sites in Europe from seventeen to six and started redistributing equipment to other locations, including South Korea, the Persian Gulf, and Army Prepositioned Afloat (APA) (for distribution of APS stock locations in 2003 see Figure 14). For example, to supply APA ships, the 21st Theater Army Area Command (TAACOM) received an order to gather equipment in Europe, prepare it for storage, and load it aboard ships at the port of

³⁹ GAO, "Most POMCUS Equipment Does Not Meet Readiness Goals," August 11, 1994.

⁴⁰ COL William W. Curl, Jr, "The Army Prepositioning Program: Is it a Program We Need?" US Army War College, Student Strategic Research Project, April 20, 1998, 5-6; US Army Materiel Command Historical Office, "Operation Iraqi Freedom- It Was a Prepositioned War," October 2003, 2.

⁴¹ COL William W. Curl, Jr, "The Army Prepositioning Program: Is it a Program We Need?" US Army War College, Student Strategic Research Project, April 20, 1998, 5-6.

Antwerp. Representatives from DESCOM inspected all the equipment at various motor pools, brought it up to the required standards, and moved it to Diego Garcia.⁴²

Currently, the AMC's program to manage prepositioned stocks includes six separate stockpiles:

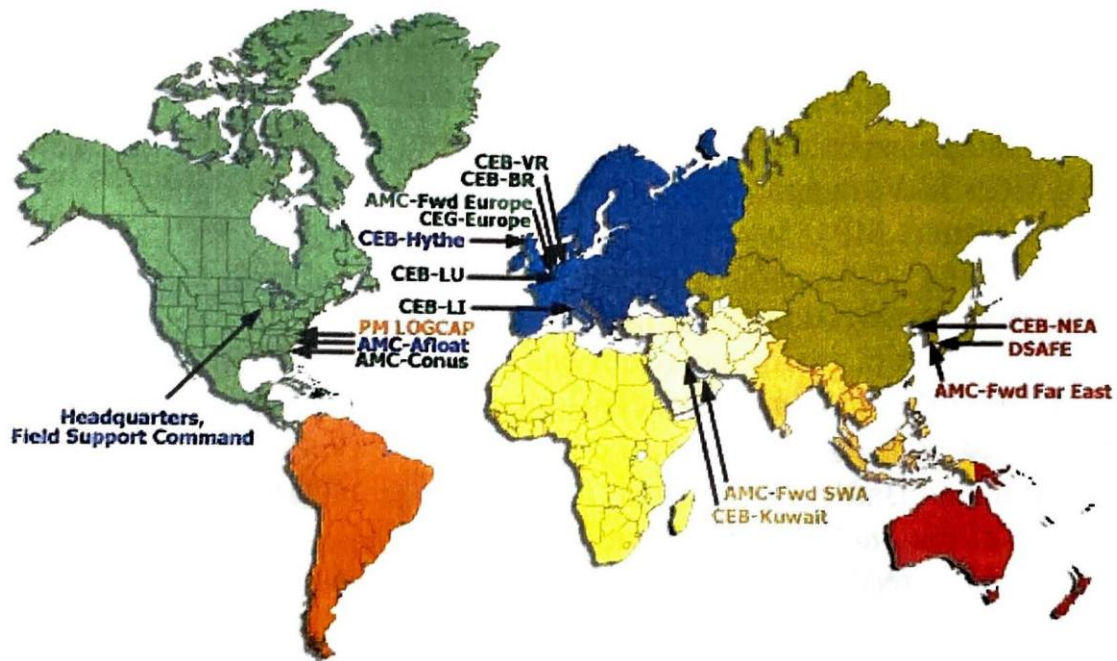
- APS-1 – CONUS: Operational project stocks and sustainment stocks
- APS-2 – Europe/Africa: Prepositioned sets, activity sets, operational project stocks, and war reserves for Allies
- APS-3 – Afloat: Prepositioned sets, activity sets, ammunition, and operational project stocks
- APS-4 – Korea/Pacific: Prepositioned sets, operational project stocks, sustainment stocks, activity sets, and watercraft
- APS-5 – Southwest Asia: Prepositioned sets, operational project stocks, sustainment stocks, activity sets, and watercraft
- APS-6 – Central and South America/Caribbean: activity sets and operational project stocks

In 1997, APS sites held seven prepositioned combat brigade sets that support 3,000 to 5,000 Soldiers each. APS equipment in Kuwait was at a high level of readiness. The level of readiness there was high because of frequent exercises such as VIGILANT WARRIOR (1994), VIGILANT SENTINEL (1995), and INTRINSIC ACTION (1995-1998) and because of the facilities in Kuwait and Qatar received significant funding in the mid-1990s. Camp Doha grew so large that it eventually became the headquarters of a brigade-sized unit and served as the staging area for APS-5. On the other hand, the European sets were declining as equipment returning from Bosnia was in a poor state with no hard plans to fill equipment shortages, and the Army was reviewing the long-term viability and requirements of the European APS sites.⁴³

⁴² Curl, 6.

⁴³ GAO, "Military Prepositioning: Army and Air Force Programs Need to Be Reassessed," November 1998; US Army Materiel Command Historical Office, "Operation Iraqi Freedom- It Was a Prepositioned War," 7-12.

Figure 14: Army Field Support Center Worldwide Map, 2003



Source: Operation Iraqi Freedom- It Was a Prepositioned War, 7.

A 1997 follow-up to the MRS investigated the Army's APS redistribution plan. At that time, the Army identified 128,000 items in central Europe for redistribution outside of EUCOM. The Army had established plans to relocate 43 percent of the items and was planning to support APS programs in South Korea, the Persian Gulf, and on ships. Much of this equipment was expected to be moved by the end of 1999. For about 21 percent of the items, the Army was holding them for a proposed new brigade set as recommended by the 1997 MRS update. For about 36 percent of the items, the Army did not have redistribution plans because it found no known requirement for them. The Army directed AMC to redistribute or dispose of this equipment, but the number of items only continued to grow as more equipment was transferred from the Balkans to APS storage warehouses.⁴⁴

The movement of equipment from Europe to APS sites in the Persian Gulf, including the largest APS site in the Army, Camp As Sayliyah in Qatar, which opened in 2000, increased the amount of equipment available to Army units in this geographically strategic location. The location and annual use of this equipment for exercises proved prescient in the immediate aftermath of the 9/11 attacks. In January 2002, the Army and CENTCOM Coalition Land Forces Component Command (CFLCC) sent APS planners into SWA to start redistributing equipment.⁴⁵

⁴⁴ GAO, "Army War Reserves," GAO/NSIAD-97-158, July 11, 1997; US Army Materiel Command Historical Office, "Operation Iraqi Freedom- It Was a Prepositioned War," 12.

⁴⁵ US Army Materiel Command Historical Office, "Operation Iraqi Freedom- It Was a Prepositioned War," 12

Although repair part levels were low and sustainment stocks were not up to required levels, Army funding soon rectified these issues. On 25 September 2001, CEGE received over \$300 million to execute “Version 6, Enduring Freedom-1.” Congress increased APS funding streams for fiscal year 2002, and by the end of the year, repair parts and sustainment stocks were at 85-90 percent fill range. Items that had been categorized as below required level since 1995 were obtained and shipped to the in-theater storage points. Army Field Support Command (AFSC) received a 250 percent budget increase in 2003, just in time to support the build-up for Operation IRAQI FREEDOM (OIF). AFSC already knew what items needed to be filled and used the increase to achieve fill rates for APS.⁴⁶

With the influx of funding and preparations for operations in SWA, CEGE’s subordinate battalions around Europe started pushing equipment into APS SWA. In total, CEGE sent over \$6 million in repair parts to SWA and repaired almost 19,000 other items to achieve 10/20 standards. According to CEGE commander COL Robert D. Cox, his unit completed 12 months of work in three to ensure that equipment arrived in-theater.⁴⁷

APS-3 sites in Qatar and Kuwait also prepared equipment for Army units. CEB-Qatar sent 871 containers of petroleum to CEB-Kuwait, since it was much closer to the line of departure, as well as received, inventoried, and started stocks for Special Operations Command (SOCOM), water support systems, and containerized systems. Much of the equipment pushed from CEGE also arrived at CEB-Qatar, including 119 20-foot containers, which were sent to CEB-Kuwait. CEB-Qatar cleared eight of its humidity-controlled warehouses throughout 2002, which eventually served as office space, quarters, and dining facilities for CENTCOM.⁴⁸

From early 2002 through January 2003, APS-3 ships offloaded equipment at Camp Doha. This period included Operations VIGILANT HAMMER I and VIGILANT HAMMER II, which offloaded the *USNS Watkins*. The brigade-sized unit based at Camp Doha was transformed from a 2x1 BCT to a 2x2 BCT in October 2002. Although plans called for the APS-3 equipment to be offloaded and handed off immediately to Soldiers, the delayed arrival of units meant that much of the equipment required storage and was placed in Camp Arifjan. Established in 2002, Camp Arifjan stored and prepared equipment for six of seven LMSRS, two CL V ships, and two sustainment vessels (see Figure 15 for visual of Camp Arifjan).⁴⁹

⁴⁶ “U.S. Army Field Support Command and Joint Munitions Command Support to Operation Iraqi Freedom, Phase I-III,” U.S. Army Field Support Command, Rock Island, IL, March 2005, 4. <https://bit.ly/3mGwj1>.

⁴⁷ *Ibid.*, 9-12.

⁴⁸ *Ibid.*, 12-13.

⁴⁹ *Ibid.*, 15-16.

Figure 15: Camp Arifjan, Zone 2



Source: U.S. Army Field Support Command and Joint Munitions Command Support to Operation Iraqi Freedom, Phase I-III, 16.

When the 3rd ID(M) started arriving in-theater on 6 January 2003, the division collected its equipment from Camp Doha and Camp Arifjan, including 252 Abrams, 325 Bradleys, 18 MLRS, and 56 M88s. The 3rd ID was above 90 percent supplied when it began the attack on Baghdad, including 218 of 259 Unit Identification Code sets (UICs). Collectively, for OIF, APS issued 218 APS UIC sets; 17,655 pieces of rolling stock; 124,400 sets, kits, and outfits; 119,194 medical supply class VIII items; 482,993 repair parts; and 5,986 containers.⁵⁰

While APS proved successful for OIF, there were also many shortfalls in the program. Units drawing on prepositioned stocks had to bring their own spare parts as well as obtain spare parts from non-deploying units. After action reports noted that APS also lacked proper amounts of food, water, fuel, construction materials, and ammunition. The available stocks of these supplies were insufficient to meet sustainment requirements at the outset of the deployment, and it took the supply chain months to respond.⁵¹

⁵⁰ Ibid., 27.

⁵¹ GAO, "Better Management and Oversight of Prepositioning Programs Needed to Reduce Risks and Improve Future Programs," GAO-05-427, September 2005, 17.

Prepositioning after OIF

Although the APS sites collectively met the needs of American forces during OIF, only three years later, the GAO found prepositioned stocks well below inventory levels and facing maintenance problems (see Figure 16). Regarding the Army's prepositioned brigade sets, much of the equipment used for OIF was still in use or damaged; moreover, the Army decided to not return this equipment to APS because the service was transforming its forces into more deployable formations and was using APS to fill additional equipment requirements. The Army's prepositioned materials in South Korea, while not used for OIF, were in poor condition and much of it was overdue for cyclical maintenance, a situation the Army confirmed. To address this problem, the Army increased maintenance efforts by bringing in contractors and setting up temporary maintenance facilities to repair equipment.⁵²

Figure 16: APS Stocks at Key Locations as of January 2005

Dollars in millions		
Location	Current status	Total funding fiscal years 2000-2005
Europe	Low inventory fill, with limited combat equipment, operational projects, and other stocks stored at sites in Germany, Italy, Luxembourg, and the Netherlands. Some stocks were taken out to support operations in Iraq, while stocks from Italy were used to temporarily refill the prepositioning ships now positioned near Diego Garcia.	\$277.6
Kuwait/Qatar	Equipment in use in Iraq and storage warehouses in Qatar have been converted to become Central Command's regional headquarters.	\$304.2
South Korea	As of March 2005, the brigade set had most of its authorized equipment on hand, though a recent maintenance inspection revealed maintenance deficiencies. The Army plans to correct the maintenance problems with the set in September 2005, as well as reconfigure it to be consistent with the Army's new modular configuration.	\$245.9
Afloat near Diego Garcia and Guam/Saipan	Two squadrons, each with a partial brigade set, are available.	\$1,835.8

Source: GAO, *Better Management and Oversight of Prepositioning Programs Needed*, 11.

With much of its APS depleted, the Army decided in 2006 to remove equipment and supplies from APS-3 sets stored aboard ships to accelerate the creation of two more BCTs to support OIF; however, Congress worried that using these stocks would leave the military unprepared if conflict developed elsewhere in the world. To better ensure the readiness of APS, the 2007 NDAA directed the Secretary of Defense

⁵² Ibid., 10-12.

(SECDEF) to ensure that financial resources were dedicated to reconstituting prepositioned stocks while the 2006 NDAA directed DoD to submit an annual report on the status of prepositioned stocks, including the Army's timeline for funding requirements and reconstituting shortfalls.⁵³

In 2007, the Army issued "APS Strategy 2015" which recognized that the new BCTs reduced the amount of equipment in APS, but the Army deferred the full reconstitution of APS until 2013 or 2015, estimating that the equipment on hand could meet the then current needs, particularly for the surge in Iraq. The APS 2015 strategy also called for upgrading worldwide APS stocks to include Heavy BCTs and modular BCTs to provide essential combat support/combat service support unit sets, hospitals/medical support sets, watercraft, munitions, and major and secondary item sustainment stocks to support operations in austere environments. Finally, APS would be continually modernized to match home-station equipment and to reduce training requirements upon deployment. The implementation of APS Strategy 2015 sought to provide combatant commanders with responsive capabilities to execute lesser contingencies and theater security cooperation activities, while reducing lift requirements in the early phases of military operations under the traditional APS role.⁵⁴

Although the Army invested \$982 million into APS for the fiscal year 2008 to achieve its 2015 strategy, prepositioning still faced several challenges and was only partially rebuilt. Shortages of equipment, communications gear, and up-armored HMMWVs persisted. A looming challenge was equipment modernization. While the Army elevated APS priority for new equipment, outdated material persisted, straining the supply chain by demanding parts and services going out of the inventory. Dwindling demand across the Army created higher costs and longer leads that further degraded readiness. To correct these deficiencies, the Army required funding to overcome shortfalls in balancing steady state and surge operations, access to more debarkation points, integration with lift capabilities, force projection infrastructure, and modernization.⁵⁵

Finally, a 2018 DoD Inspector General's report concluded that the Army and Marine Corps APS were not "properly stored." At the APS depot in Leghorn, Italy, the investigation found that 21 of 63 vehicles were not maintained in accordance to Army regulations and that personnel failed to perform regular maintenance for unscheduled missions. While the report noted that Army technical manuals did not state who was responsible for maintaining humidity levels and inspecting equipment, it concluded that

⁵³ GAO, "Defense Logistics: Army Has Not Fully Planned or Budgeted for the Reconstitution of Its Afloat Prepositioned Stocks," GAO-08-257R, February 2008.

⁵⁴ 2007 – APS Strategy 2015, <https://www.globalsecurity.org/military/agency/army/aps-2007.htm>.

⁵⁵ AUSA, "Army Prepositioned Stocks: Indispensable to America's Global Force-projection Capability," December 2008.

that the failure to provided cyclical maintenance created vulnerabilities and that the units “may not be able to fully support a request to provide immediate crisis response.”⁵⁶

APS Support for Future Contingencies

Over the last decade, as the Army has sought to refill and modernize APS around the globe, the entirety of the DoD prepositioning policy has been seeking to better manage and use prepositioned stocks for all the services. In 2014, the NDAA required the DoD to maintain a strategic policy that would establish joint oversight of the entirety of the department’s prepositioned stocks. Congress included this requirement to ensure that DoD’s prepositioning strategy considered national security threats, strategic mobility, service requirements, and the requirements of combatant commanders. The reporting elements required by this law include:

1. Level of fill for major end items of equipment and spare parts
2. Material condition of the equipment at the end of the fiscal year
3. List of major end items of equipment drawn from the stocks during the fiscal year and how they were used
4. Timeline for reconstituting any shortfalls
5. Estimate of the amount of funds required to make up shortfalls
6. List of any OPLANs affected by any shortfalls
7. List of any non-standard items slated for inclusion and a funding plan for sustainment
8. List of any equipment used in support of OIF, OEF, or Operation NEW DAWN slated for retrograde
9. Efficiency strategy for limited shelf-life medical stock replacement
10. Status of efforts to develop a joint strategy to reduce redundancies
11. OPLAN assumptions used in formulating prepositioned stock levels and consumption
12. List of strategic plans affected by changes to the levels, composition, or locations of the stocks and efforts to reduce that risk⁵⁷

According to a 2019 GAO report, the DoD has made considerable progress in meeting these reporting requirements, but GAO has consistently identified problems in

⁵⁶ Inspector General, US Department of Defense, “Management of Army and Marine Corps Prepositioned Stocks in U.S. European Command,” no. DODIG-2018-152, September 17, 2018.

⁵⁷ GAO, “Prepositioned Stocks: DOD Has Addressed Required Reporting Elements but Needs to Develop a Department-wide Policy and Joint Service Approach,” GAO-16-418, April 2016, 8-10.

the department's efforts to develop a joint strategy for all prepositioned equipment. This initial policy, Directive 3110.07 Prepositioned War Reserve Materiel (PWRM) Strategic Policy, issued in March 2017, provided an overarching strategic guidance linking planning with current and future priorities; however, it failed to provide a vision for prepositioning stocks' desired end state, specific interim goals, a description of the strategic environment and requirements for prepositioning, and a framework for joint oversight that synchronizes the equipment between the services. Since 2017, many of these issues have been addressed, and the most recent GAO report on prepositioning strategy concluded that the only reporting element that the DoD had not yet addressed was a description of the resource amounts needed to implement the strategic prepositioning policy.⁵⁸

While DoD was developing a department wide strategic policy regarding prepositioning, the Army was drafting its APS 2025 Strategy. According Jacqueline Georlett, the APS team leader of APA Afloat, the 2025 strategy:

- Supports the Army's Power Projection Program
- Is synchronized with Army initiatives
- Is flexible enough to respond to changing requirements.

To achieve these objectives, the APS strategy focuses on making APS into ready-to-fight configurations that quickly meet OPLAN requirements. The new strategy also centers on providing an updated roadmap for fielding and sustaining APS and integrating it into theater campaign plans. The APS strategy places an emphasis on modernization, seeking to enhance storage facilities to provide highly capable preconfigured sets, including ready-to-fight configuration with command, control, communications, computer, intelligence, surveillance, and reconnaissance enablers.⁵⁹

As part of this strategy, the Army is currently reviewing and evaluating its current APS stocks as well as introducing new exercises to test APS and ensure that the right equipment is stored in the right places. This was a key feature of the DEFENDER 2020 exercise that was limited by the COVID-19 Pandemic. Along with exercises and right-sizing APS, the Army plans to increase APS funding from 2023-2027. If trends from recent administrations to reduce the overseas presence of American forces and pull more back to CONUS continue, APS will become increasingly important to allow quick strategic deployments.⁶⁰

⁵⁸ GAO, "Prepositioned Stocks: DOD Needs to Develop a Department-Wide Vision and Goals to Guide Program Management," GAO-17-653, July 2017; GAO, Prepositioned Stocks: DOD Needs Joint Oversight of the Military Services' Programs," GAO-19-244, January 2019.

⁵⁹ Jaqueline Georlett and Bruce Daasch, "Army Pre-Positioned Stocks Support Army Readiness," *Army Sustainment* 49, no. 3 (May-June 2017), 47.

⁶⁰ Jen Judson, "The US Army is adjusting its pre-positioned stock for more than just war," *Defense News*, November 30, 2020. <https://bit.ly/3ceeadO>.

Because of the history of prepositioned stocks in Europe during the Cold War, the EUCOM theater is much more mature than the INDOPACOM Theater, a region of growing competition. While APS has existed in Korea and Japan, the Pacific Theater lacks the constellation of APS sites that exists in Europe to deter Russia. APS sites in SWA are also more mature and act as a deterrent to hostile nations such as Iran. The establishment of these APS locations required close work with allies and partners. To build the robust and dedicated APS sites required for the Pacific, the Army needs to work closely with allies and establish agreements for new APS sites that can act as a deterrent as well as compete with Chinese power and influence. Additionally, as the Pacific Theater requires a different force structure and equipment compared to Europe, APS sites in INDOPACOM require sets and equipment that meet the needs of the theater, particularly building smaller sets in more numerous locations that tailor to the size and characteristics of the Pacific's geography. But even with those differences in mind, history has shown that prepositioned sets are often shifted for use in crises in other theaters, and the Army must be prepared for tailoring on-the-fly in those cases.

Key Insights

- 1. The Army has underfunded POMCUS/APS throughout its existence, except for the Carter-Reagan build up, affecting its readiness and capabilities.** During the first decade that POMCUS existed, the US military was fighting in Vietnam, which led to decreasing resources, personnel, and equipment needed to maintain POMCUS for potential war with the Soviet Union. These problems are detailed in several Army and GAO reports. The Carter-Reagan build-up expanded and modernized POMCUS and funded the annual REFORGER exercises to evaluate POMCUS and ensure its readiness. Following the Gulf War and the Cold War, POMCUS equipment was not replaced, maintenance personnel declined, and bases and warehouses closed. These actions collectively decreased the readiness of POMCUS equipment during the mid-1990s. The Long Wars of the early 21st century have also eroded POMCUS capabilities and readiness. The consistent use of equipment in Iraq and Afghanistan left much damaged or destroyed, while the expansion of the force for surges emptied APS stocks for a period.
- 2. The modernization of APS (POMCUS) remains an ongoing task that requires balancing between training, readiness, and modernization.** The modernization of the force in the 1980s also required the modernization of POMCUS. To achieve this for the M1 Abrams tank, the SECARMY instituted a policy whereby POMCUS would be updated one year after the scheduled gaining unit received the new M1s at its CONUS headquarters. The unit and its supporting components were to discontinue all use and training of older weapons systems, in this case the M60 tank. While this provided the gaining unit time to familiarize itself and train with the M1, this timeline ensured that the unit was unable to rapidly deploy if war started in Europe because the unit sets in Europe would still hold the older M60s.
- 3. The lag between issuing a unit with new equipment and the prepositioning of the same new equipment in POMCUS unit sets hinders rapid deployment and creates vulnerabilities.** During the year that units were training with the M1, the ability of the US Army to rapidly deploy was degraded and made European allies vulnerable. With units training on new weapons systems while POMCUS still held the older unit sets, these units could not rapidly deploy, meaning fewer American Soldiers were available for combat. While the unit with the new M1 could deploy, it would require deploying the unit with all its equipment, a timely and complicated process. This situation created a period of vulnerability for the United States and our allies by reducing the force available to respond quickly to an enemy attack.
- 4. The composition of force structure significantly affects APS unit sets, which have been cannibalized to support the creation of new units.** In the early 21st century, as the US Army was engaged in conflicts in both Iraq and Afghanistan, APS was cannibalized to meet urgent requirements, degrading their

readiness for unexpected attacks or operations. For Operation OIF, much of the APS equipment stored in Qatar and Kuwait was used in 2003. During the years of conflict and counterinsurgency, combat-damaged equipment was not quickly replaced. Moreover, as the Army expanded to conduct continuous operations, two BCT unit sets stored in APS were used to outfit new units. By cannibalizing APS unit sets for new units, the Army reduced its capacity and created vulnerabilities because it was unable to respond to potential attacks in other parts of the world. The almost 10-year timeline to replace this equipment only extended this window of exposure.

5. **The Army APS program supplies ready training sets to deployed forces.** As with the REFORGER exercises, the maintenance of the APS programs supplies training sets for units outside of CONUS. When participating in small- or large-scale training exercises with allies, APS stocks provide units and Soldiers with training equipment, but also experience in deploying and collecting equipment. The Army should continue to maintain and provide these unit sets by ensuring the continuation of the DEFENDER exercise and developing an annual exercise for the Pacific that includes American allies.
6. **APS is an integral part of expeditionary, force projection capabilities.** APS allows unit personnel and “to accompany troops” (TAT) equipment to be airlifted in hours, and units can receive the rest of their equipment upon arrival. As an expeditionary force, this forward projection is vital for rapid deployment. Units that deploy from CONUS with all their equipment require considerably more time to deploy, which can detrimentally affect combat operations. For example, during ODS, it took the 24th Infantry Division (Mechanized) more than six weeks to transport tanks, fighting vehicles, and additional equipment to Saudi Arabia. If trends from recent administrations to reduce the overseas presence of American forces and pull more back to CONUS continue, APS will become increasingly important to allow quick strategic deployments.
7. **As the Army prepares for potential large-scale, ground combat operations, the rapid deployment of heavy forces during the early stages of conflict may help avert potential disaster(s).** The combination of rapid air movement by ground troops and mission-ready APS stocks can provide the combatant commander with ready and fully operational armored and mechanized units in an efficient and timely manner. As the first battle becomes increasingly important, the ability of American forces to rapidly deploy around the globe, collect modern and ready equipment, and quickly deploy can prove decisive in fighting, defeating, or delaying the enemy forces. The lack of APS in critical locations and loss of first battles might create strategic complications and require costly and risky operations.

8. **The Army needs to expand APS sites in the Pacific, ensure they meet the needs of the theater, and hold frequent exercises to test Army capabilities and APS stocks.** As the US military increasingly focuses on great power competition, the Army requires an expanded APS system in the Pacific that is comparable to the mature APS sites in EUCOM. Establishing new APS sites requires building relations and working closely with existing allies. As the nature of warfare in INDOPACOM will be different from Europe and SWA, the Army needs to ensure that APS stocks in the Pacific are tailored to the threat and the geography of the region. This will require unique APS packets rather than a one size fits all approach. The establishment of new APS sites in the Pacific, along with annual exercises, demonstrates the United States' commitment to our allies in the region and acts as a deterrent on Chinese power and influence. The expansion of APS in the Pacific is a strategic necessity. But the Army must also be prepared to tailor other APS stocks for use in the Pacific if a crisis requires the shift of resources from other theaters.



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