

# The Operational Art of Sustaining Operation Avalanche

A Monograph

by

MAJ Craig M. Iwen  
US Army



School of Advanced Military Studies  
US Army Command and General Staff College  
Fort Leavenworth, KS

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## Monograph Approval Page

Name of Candidate: MAJ Craig M. Iwen

Monograph Title: The Operational Art of Sustaining Operation Avalanche

Approved by:

\_\_\_\_\_, Monograph Director  
Ricardo A. Herrera, PhD

\_\_\_\_\_, Seminar Leader  
Larry V. Geddings, COL

\_\_\_\_\_, Director, School of Advanced Military Studies  
Kirk C. Dorr, COL

Accepted this 23rd day of May 2019 by:

\_\_\_\_\_, Director, Graduate Degree Programs  
Robert F. Baumann, PhD

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## Abstract

The Operational Art of Sustaining Operation Avalanche, by MAJ Craig M. Iwen, Army, 45 pages.

In early October 1943, General Dwight D. Eisenhower surveyed the destruction left behind in Naples, Italy, by the retreating German army. Despite the destruction, the Allies secured the port and successfully began the buildup of men, equipment, and material to continue combat operations in Italy. The Fifth Army achieved Operation Avalanche's objective to secure basing in Italy for further operations. The success of combat operations during Operation Avalanche depended on well-coordinated logistical planning and execution. US and British logistic planners supported an emerging strategy in the Mediterranean by anticipating requirements and linking strategic resources to tactical consumption. Using the lens of operational art provides clarity as to how logisticians supported large-scale combat operations in a contested environment. The elements of operational art and principles of sustainment are tools to help understand the development of Operation Avalanche as the Allies' strategy evolved in the Mediterranean.

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## Acronyms

ADP	Army Doctrine Publication
AFHQ	Allied Force Headquarters (Anglo-American)
AFS	Army Service Force
CCS	Combined Chiefs of Staff (Anglo-American)
COS	Chiefs of Staff (British)
DUKW	2 ½-ton Amphibious Truck
FM	Field Manual
JCS	Joint Chiefs of Staff (United States)
JP	Joint Publication
LCI (L)	Landing Craft, Infantry, Large
LSI	Landing Ship, Infantry
LST	Landing Ship, Tank
SOS	Services of Supply
WNTF	Western Naval Task Force

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## Introduction

In early October 1943, General Dwight D. Eisenhower, Commander-in-Chief Allied Forces, surveyed the destruction left behind in Naples by the German army. The retreating German forces had scuttled ships in the harbor and destroyed vital infrastructure at the port of Naples. The Germans planned to delay an Allied advance into Italy by denying access to critical logistic infrastructure. Despite the destruction, the Allies secured the port and successfully began the buildup of men, equipment, and material to continue combat operations in Italy. The Fifth Army achieved Operation Avalanche's objective to "seize the port of Naples and securing the airfields nearby, with a view toward preparing a firm base for further offensive operations."<sup>1</sup>

Operation Avalanche emerged out of negotiations by Allied leadership to exploit opportunities following Operation Torch against the Axis in the Mediterranean. In January of 1943, the Allies lacked a cohesive strategy to prosecute the war in Europe and the Pacific. The Casablanca Conference began a series of high-level meetings in 1943 between US President Franklin Delano Roosevelt and United Kingdom Prime Minister Winston Churchill, and their respective military advisors. Roosevelt and Churchill agreed to a "Europe First" strategy but did not agree on the best way to prosecute the war in Europe.<sup>2</sup>

Churchill and the British military leadership advocated for a peripheral strategy. This approach called for expanded military operations in the Mediterranean to attack Germany's southern flank in Italy and the Balkans. The British believed the strategy created several strategic security dilemmas for Germany by making its allies, lines of communication, and resources

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<sup>1</sup> General Eisenhower's written directive provided Operation Avalanche's objective to General Clark, see Fifth Army, *Fifth Army History, Part I, From Activation to the Fall of Naples*, ([Italy?]: Fifth Army Headquarters, 1945), 18; Army Service Forces, *History of the Planning Division*, vol. 1, *Army Service Forces* (Washington DC: War Department, 1945), 91.

<sup>2</sup> Maurice Matloff, *Strategic Planning for Coalition Warfare 1943-1944* (Washington, DC: Office of the Chief of Military History, 1959), 9.

vulnerable to attack.<sup>3</sup> The plan sought to minimize British casualties and still force Germany to overextend its limited resources by defending multiple fronts. The cumulative effects would reduce German pressure on the Soviet Union and the ability to defend northern France from a future Allied attack.

The US military leadership did not support the peripheral strategy but instead advocated a cross-channel invasion from the UK into northern France. General George C. Marshall, US Army Chief of Staff, believed expanding the war in the Mediterranean drained limited resources away from a buildup of men and material in the UK.<sup>4</sup> The US war efforts in the Pacific also required significant resources to fight the Japanese. The plans to sustain multiple theaters of operation around the globe severely strained US assault and merchant shipping capabilities. The competing priorities for limited resources threatened to delay Marshall's preferred cross-channel strategy in Europe. By the end of the Casablanca Conference, Roosevelt had agreed to Churchill's plan and ordered US planners to implement a limited expansion of Mediterranean operations by authorizing an invasion of Sicily. The British compromised by agreeing on a cross-channel invasion as the primary way to defeat Germany. A more coherent strategy began to take shape, but the Allies remained divided between the priority of effort and the distribution resources in Europe.

In May 1943, the Allies continued to refine the European strategy at the Trident Conference and formally set a date for Operation Husky, the invasion of Sicily.<sup>5</sup> The Anglo-Americans, as at Casablanca four months earlier, continued to differ on the strategic vision for the Mediterranean. The British continued to push for a peripheral strategy and desired to conduct

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<sup>3</sup> Martin Blumenson, *Salerno to Cassino* (Washington, DC: Office of the Chief of Military History, 1969), 6-8.

<sup>4</sup> George F. Howe, *Northwest Africa: Seizing the Initiative in the West* (Washington, DC: Office of the Chief of Military History, 1957), 11-13.

<sup>5</sup> Blumenson, *Salerno to Cassino*, 8.

follow-on operations to invade the Italian mainland, Corsica, and Sardinia. The United States, however, continued to advocate for massing men and resources in the UK to invade and attack Germany through northwestern France. The Allies agreed to several compromises further developing a coherent Mediterranean strategy. First, Marshall and the Joint Chiefs of Staff (JCS) agreed to the British desire for post-Husky operations in the Mediterranean. In return, the British agreed to Operation Roundup, the military build up in the UK, which limited the men and resources allocated to operations following Husky.<sup>6</sup> Secondly, the Allies agreed to two strategic goals for the Mediterranean Theater. The elimination of Italy from the war and tying down the maximum number of German forces in Italy.<sup>7</sup> Operation Husky commenced on 10 July and quickly achieved remarkable gains toward securing the island. The German defenders fought hard against the Anglo-American forces but recognized their vulnerability of being isolated on Sicily and withdrew to the Italian mainland. The Allies failed to interdict the German army's retreat across the Strait of Messina, which allowed it to reconstitute and fight another day. The Italian defenders lacked the will to continue fighting and made little effort to extend their role in the war.

General Eisenhower sought to exploit the success in Sicily and recommended to the Combined Chiefs of Staff (CCS), whose members included senior US and British officers, that the Allies begin planning an invasion of mainland Italy. The overthrow and arrest of Benito Mussolini, the Italian fascist head of state, on 25 July expedited Allied planning for an invasion. Allied Force Headquarters (AFHQ) assigned the US Fifth Army and British Eighth Army responsibility to plan invasions of Italy near Naples and the Calabrian toe.<sup>8</sup> The desire to exploit military success in Sicily and the political turmoil in Italy directly contributed to the Allied desire to invade Italy. However, the planners remained constrained by the allocations of shipping and

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<sup>6</sup> Matloff, *Strategic Planning*, 131.

<sup>7</sup> Blumenson, *Salerno to Cassino*, 20-21.

<sup>8</sup> *Ibid.*, 11-12.

forces for post-Husky operations established at the Trident Conference. The US military did not desire to commit additional resources or men to a secondary theater of operations, yet Eisenhower ordered General Mark Clark, commander of the Fifth Army, to plan for the invasion of Italy with six divisions. The planning process resulted in Operation Avalanche.

Planners selected the Bay of Salerno as the location for Operation Avalanche based on several criteria. Portions of the bay had beaches suitable for an amphibious assault, the Axis defense of the bay was not as substantial as locations near Naples, and, finally, Allied land-based fighters could provide support to invading forces from the airfields in Sicily.<sup>9</sup> The site provided a suitable lodgment to support an offensive toward Naples. The military objective of Operation Avalanche was to secure the port of Naples to establish basing to support Allied forces in Italy.

Fifth Army began its invasion of Italy on 9 September, the morning after General Eisenhower announced the unconditional surrender of the Italian armed forces to the Allies.<sup>10</sup> The Allied invasion's task organization consisted of two corps headquarters with six divisions and several US Ranger and British Commando battalions divided between them.<sup>11</sup> During the opening week of the invasion; the Allies faced stiff resistance from the defending German panzer and panzer grenadier divisions across the Sele plains and high ground surrounding the Bay of Salerno. The German defenders eventually withdrew northward toward Naples, destroying bridges and massing fires from fortified defensive positions on advancing Allied troops. The 82nd Airborne Division, over three weeks after the invasion began, finally entered Naples on 1 October and began securing the port for the Allies.<sup>12</sup>

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<sup>9</sup> Western Naval Task Force, *Operation Plan No. 7-43: Short Title "AVON/WI"* (Algiers: Algeria, Western Naval Task Force, 1943), Appendix A, Beach Report; Blumenson, *Salerno to Cassino*, 11-12.

<sup>10</sup> Blumenson, *Salerno to Cassino*, 54-55.

<sup>11</sup> Fifth Army, *Fifth Army History*, 25.

<sup>12</sup> Blumenson, *Salerno to Cassino*, 165.

Against the will of a determined German defense, the Anglo-American army secured a lodgment along the beaches between Salerno and Paestum, which enabled their achieving the primary military objective of securing a base of operations at Naples.

The success of combat operations during Operation Avalanche depended on well-coordinated logistical planning and execution. US and British logistic planners supported an emerging strategy in the Mediterranean by anticipating requirements and linking strategic resources to tactical consumption. Using the lens of operational art provides clarity as to how US Army logisticians supported large-scale combat operations. The elements of operational art and principles of sustainment are tools to understand the development of Operation Avalanche as the Allies' strategy evolved in the Mediterranean.

## Historiography

There are extensive histories about military operations in the Mediterranean Theater during World War Two. The works covering Operation Avalanche tend to fall into two general categories: focus on the tactical level operations or as a limited event in the broader sweep of history about the Mediterranean Theater. A short review of the existing literature demonstrates the opportunity for a new examination of Operation Avalanche through the lens of Operational Art. The literature examined herein is mostly secondary historical accounts and primary source documents maintained at the Combined Arms Research Library.

*The United States Army in World War II*, colloquially known as the “green books,” is the US Army's official history of its role in the war and an invaluable starting point for any research. The most extensive writing on Operation Avalanche is *Salerno to Cassino*, by Martin Blumenson, in *The Mediterranean Theater of Operations* series. In this work, Blumenson details the Italian Campaign from the initial Allied invasion at Salerno to the spring offensives in 1944. He acknowledges “the focus of the account is tactical, specifically on the operations of the Fifth US

Army.”<sup>13</sup> *Salerno to Cassino* documents the tactical limitations imposed by shipping and supply shortages during Operation Avalanche, but does not address the operational level planning of logistic support. These factors were a significant consideration for sustaining tactical level combatants at Salerno and Paestum, but do not account for the organizational structure of US logistic systems to sustain combat power across time, space, and distance. The literature explicitly examining US Army logistics is divided primarily into two broad categories; strategic level logistics and historical accounts of the individual service branches. *Global Logistics and Strategy 1943-1945*, by Robert W. Coakley and Richard M. Leighton, is a seminal work on strategic planning during World War Two.<sup>14</sup> The book focuses on the strategic challenges of sustaining multiple theaters during a global conflict. Coakley and Leighton examine critical shortfalls in merchant and assault shipping, logistical organization and procedures, and the relationship between strategy and logistics. The authors provide remarkable insight into the civilian-military relationships which determined the priorities of US resources from production to consumption. The quartermaster, ordinance, and transportation technical branches each produced histories for the *Technical Services* series of books. *The Quartermasters Corps: Operations in the War Against Germany*, by William F. Ross and Charles F. Romanus, provides valuable information on the development of the base sections in the Mediterranean Theater.<sup>15</sup> The base section concept is critical to understanding the movement of supply from strategic sources to theaters. Likewise, *The Transportation Corps: Operations Overseas*, by Joseph Bykofsky and Harold Larson, and *The Ordnance Department: On Beachhead and Battlefront*, by Lida Mayo, provides similar

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<sup>13</sup> Blumenson, *Salerno to Cassino*, ix.

<sup>14</sup> Robert Coakley and Richard M. Leighton, *Global Logistics and Strategy 1943-45* (Washington DC: Office of the Chief of Military History, 1968), 17.

<sup>15</sup> William F. Ross and Charles F. Romanus, *The Quartermaster Corps: Operations in the War Against Germany* (Washington DC: Center of Military History, 1991).

information about the distribution methods of the ordinance and transportation branches.<sup>16</sup> The service branch literature methodically describes logistical organizations and the methods used to distribute supply throughout the theater of operations. However, the descriptions get bogged down in technical details, and the distribution of information across multiple volumes lacks a concise and coherent framework for operational planners to link tactical and strategic logistic planning.

The primary source documents provide valuable evidence from the units involved in planning and executing Operation Avalanche. Fifth Army produced the *Fifth Army History, Part I: From Activation to the Fall of Naples* during the Italian Campaign.<sup>17</sup> However, there is a clear intent to present Fifth Army and General Mark Clark in the best possible light. Despite this shortcoming, the book provides valuable corroboration of details found in secondary sources. The *Conclusions Based on the "Avalanche" Operations* is a collection of field reports from subordinate units to higher command detailing the invasion at the Bay of Salerno.<sup>18</sup> The reports are after action reports, which describe the tactical outcomes of operational planning for the invasion.

There is no literature which examines the logistical support of Operation Avalanche and the Mediterranean Theater through the lens of operational art. A history linking modern elements of operational art and principles of sustainment to Operation Avalanche provides valuable insights to current planners examining the sustainment of large-scale combat operations against peer enemies in a contested area of operations. A brief description of operational art and the

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<sup>16</sup> Joseph Bykofsky and Harold Larson, *The Transportation Corps: Operations Oversea* (Washington DC: Office of the Chief of Military History, 1957); Lida Mayo, *The Ordnance Department: On Beachhead and Battlefield* (Washington DC: Office of the Chief of Military History, 1968).

<sup>17</sup> Fifth Army, *Fifth Army History*, 25.

<sup>18</sup> *Conclusions Based on the "Avalanche" Operations*, ([Italy?]: 1943).

applicable elements of operational art and principles of sustainment to define the terms of analysis.

Army doctrine defines operational art as “the cognitive approach by commanders and staffs - supported by their skill, knowledge, experience, creativity, and judgment – to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, and means.”<sup>19</sup> Operational art acts as a conduit to link strategic goals to tactical action in time, space, and purpose. The elements of operational art are tools to help commanders and staff conduct operational art and communicate the operational narrative to inform and guide detailed planning.

The four elements of operational art which provide a greater understanding of the development and execution of Operation Avalanche are end state, lines of operation, operational reach, and basing. First, the end state describes the commander’s desired conditions and the situation after an operation concludes. The end state conditions can evolve throughout an operation and manifest in a range of outcomes, such as control of key terrain or the defeat of an enemy force. Secondly, lines of operation “define the directional orientation of a force in time and space in relation to the enemy” and links a force to its basing and objectives. Third, operational reach is the limit a force can effectively employ its capabilities before culminating. The ability to organize, sustain, and protect the force determines operational reach. Finally, basing is the location that projects and sustains operations. Just as the elements of operational art are tools to help commanders and staff understand, visualize, and describe operational frameworks, the principles of sustainment provide a similar function for logisticians to describe and design sustainment operations.<sup>20</sup>

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<sup>19</sup> US Department of the Army, *Army Doctrine Publication (ADP) 3-0, Operations* (Washington, DC: Government Printing Office, 2017), 6; the Army doctrine definition is directly attributable to the Joint definition of Operational Art, see US Department of Defense, Joint Staff, *Joint Publication (JP) 3-0, Joint Operations* (Washington, DC: Government Printing Office, 2017), II-3.

<sup>20</sup> US Army, *ADRP 3-0* (2017), 2-5, 2-8, 2-10.

*ADP 4-0, Sustainment* details the principles of sustainment “essential to maintaining combat power, enabling strategic and operational reach, and providing Army forces with endurance.”<sup>21</sup> Three principles of sustainment stand out during an examination of Operation Avalanche. First, anticipation is the ability to forecast force requirements and the appropriate sustainment response. Second, economy is the efficiency of providing sustainment by managing the priority and allocation of resources. Finally, continuity achieves the uninterrupted flow of sustainment from strategic sources to the tactical level end user. Continuity requires a network of basing and capabilities to provide sustainment operations.<sup>22</sup> The principles of sustainment integrate with the elements of operational art to provide a clearer understanding of the operational environment, frame current and future states, develop an operational approach, and mitigate risk during the planning process. The principles of sustainment provide confidence that the logistic plan can generate and maintain the combat power necessary to successfully conduct operations.

Examined through the lens of operational art, Operation Avalanche emerged from an evolution of strategic aims. The vague Allied “Europe First” policy to defeat Germany transformed into a more clearly defined strategic goal of eliminating Italy from the war and tying down the maximum number of German forces in Italy.<sup>23</sup> Eisenhower’s desired end state for Operation Avalanche was to secure the port of Naples and establish basing to support Allied forces fighting in Italy. Allied control of the port was thus an intermediate objective that supported the strategic goal.<sup>24</sup> The operational approach to achieve the end state required an examination of the interrelationship between lines of operation, basing, and operational reach.

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<sup>21</sup> US Department of the Army, *Army Doctrine Publication (ADP) 4-0, Sustainment* (Washington, DC: Government Printing Office, 2012), 3.

<sup>22</sup> For a further description of principles of sustainment, see US Army, *ADP 4-0* (2012), 3-4.

<sup>23</sup> Blumenson, *Salerno to Cassino*, 20-21.

<sup>24</sup> Fifth Army, *Fifth Army History*, 18.

One significant problem planners addressed was how to project combat power and sustainment from distant bases in North Africa and the United States to Italy with limited ways and means.

A successful operation required lines of operation and basing to extend the operational reach of Allied forces to conduct offensive operations in Italy. Operation Husky had set operational level conditions to conduct follow on operations into Italy. The Allied occupation of Sicily had secured lines of communication in the Mediterranean against threats from Axis air and naval forces, provided basing to build up forces and supply, and extended Allied operational reach to a location near Italy. The amphibious assault during Operation Avalanche used these advantages to exploit Operation Husky's success to seize and maintain the initiative against Germany.

The same elements of operational art applied to the tactical level conduct of Operation Avalanche. The initial lodgement near Salerno and Paestum provided the basing necessary to sustain and maintain combat power and further extended the operational reach of the Allies into Italy. The internal lines of operation originated from the lodgements toward the German positions and sustained the Allied advance to Naples. The end state of securing the port of Naples provided a clear objective that promoted the unity of effort, synchronized actions, and mitigated risks during the planning and execution phases of the operation. The principles of sustainment interweave throughout the development and execution process of Operation Avalanche. Sustainment planners prioritized and allocated scarce strategic resources, such as assault and merchant shipping, utilized a network of permanent and temporary basing to link strategic resources to frontline combat troops, in a generally continuous manner. The net result of the operation was the achievement of General Eisenhower's desired end state—securing the port of Naples.

### Strategic Setting: Casablanca to Trident Conferences

On 14 January 1943, President Franklin Delano Roosevelt and Prime Minister Winston

Churchill convened a ten-day conference near Casablanca at the Anfa Hotel.<sup>25</sup> Allied forces had defeated Vichy French defenders and captured the Moroccan port city of Casablanca only two months before the conference. The American and British leaders met even as their forces continued to fight the North African campaign a few hundred miles to the east. Anglo-American forces were locked in a struggle against German General Erwin Rommel's Fifth Panzer Army for control of the Eastern Dorsal Passes in Tunisia.<sup>26</sup> The United States, beyond its commitments in North Africa, was also engaged against the Japanese in the Pacific. In January 1943, the US Army XIV Corps continued offensive operations to defeat Japanese forces at Guadalcanal.<sup>27</sup> The Allies, particularly the United States, were conducting global operations which placed competing demands on limited forces and resources. The purpose of the Casablanca Conference was to develop an Allied global strategy. Roosevelt and Churchill had previously agreed to a "Europe First" strategy at the Arcadia Conference in Washington, DC, in 1941.<sup>28</sup> However, US and British leadership did not have a coherent long-term plan to defeat Germany and the war in the Pacific only complicated matters.

The Casablanca Conference sought to clarify the "Europe First" strategy. Roosevelt and Churchill agreed that the goal of the policy was to defeat Germany before Japan, but military advisors had different strategies to achieve the desired goal. The British sought to exploit post-Operation Torch success in North Africa to attack the southern flank of Germany, which Churchill famously referred to as the "soft underbelly of the Axis."<sup>29</sup> Churchill and Field Marshal

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<sup>25</sup> Matloff, *Strategic Planning*, 18.

<sup>26</sup> Howe, *Northwest Africa*, 171-173, 378.

<sup>27</sup> John Miller, Jr., *Guadalcanal: The First Offensive* (Washington, DC: Center of Military History, 2006), 253-255.

<sup>28</sup> Matloff, *Strategic Planning*, 9.

<sup>29</sup> The quote is from a private message, dated 12 November 1942, from Prime Minister Churchill to President Roosevelt, in Matloff, *Strategic Planning*, 21.

Alan Brooke advocated attacking Sicily, and a subsequent peripheral strategy in the Mediterranean. British planners suggested three alternative courses of action following the invasion and capture of Sicily: an invasion of the Balkans to support guerrilla activity against Germany, attacking Corsica and Sardinia, and finally an invasion of southern Italy and a subsequent campaign on the Italian peninsula. The dispersed geography of the Mediterranean would force Germany into a strategic quandary over how to distribute its limited military capabilities to protect its southern front against Allied advances. German allies in Italy, Hungary, and Romania provided Germany secure lines of communications between southern France and the Soviet Union, and critical resources, such as the oil fields in Romania, to continue fighting the war.<sup>30</sup> Churchill and British planners believed a war on the periphery would slowly degrade Germany's ability to fight and enable a future cross-channel attack. General Marshall and the Joint Chiefs of Staff (JCS) opposed committing more resources to operations in the Mediterranean.

The JCS advocated against the British indirect approach of attacking Germany along the Mediterranean periphery and instead favored a direct cross-channel attack. It believed the allocation of Allied resources to support two different lines of effort in Europe prevented the massing of force necessary to conduct Marshall's preferred approach—a cross-channel attack. The JCS proposed the quickest way to defeat Germany was a concentration of force to attack from the United Kingdom through northern France and into the heart of Germany. Operation Roundup was the buildup of forces and supplies at southern bases in the UK to attack into northern France. Operation Sledgehammer was Marshall's plan to open a second European front quickly. Its purpose was to divert German forces if conditions on the Eastern Front deteriorated and threatened the defeat of the Soviet Union.<sup>31</sup> Complicating matters, demands for resources in

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<sup>30</sup> Blumenson, *Salerno to Cassino*, 6-8.

<sup>31</sup> Howe, *Northwest Africa*, 11-13.

the Pacific increased and contributed to JCS opposition to increased operations in the Mediterranean.

Admiral Ernest King believed the war against Japan should be the priority for US resources. The United States was still rebuilding its fleet capabilities more than a year after the Japanese attack at Pearl Harbor and the Solomon Islands campaign was in full swing at Guadalcanal. Moreover, the US Army and Navy planned a buildup of resources in Burma to conduct a large-scale offensive against Japan in late 1943.<sup>32</sup> US planners demanded more men, equipment, and material to fulfill competing US priorities than available resources could support. The British plans for expanding the Mediterranean Theater provided seemingly little strategic benefit to the US war aim in Europe at the high cost of diverting US resources away from desired operations.

By 1943, the UK had reached its peak industrial war production and the United States was providing a large portion of war materials to sustain the Ally war effort. The United States provided critical equipment through the lend-lease program to European allies, such as tanks and landing craft. The UK, in turn, provided basing, troop transport ships, and, in the near term, a larger, better-equipped military than could be fielded in the absence of US support.<sup>33</sup> The availability of assault and merchant shipping was a critical logistical concern for the Allies in 1943. The lines of communication linking resources from the US industrial base to the front line were long, dangerous, and required time to coordinate and synchronize sustainment operations. The limited availability of shipping only heightened the risk to these operations.

The US dramatically increased the production of amphibious landing craft over four months starting in November of 1942. By April of 1943, the US produced 8,719 landing craft with a total displacement weight of 512,333 tons. The four-month surge produced over half of the

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<sup>32</sup> Churchill, *The Hinge of Fate*, 676.

<sup>33</sup> Coakley and Leighton, *Global Logistics*, 27.

total assault landing craft used during the war.<sup>34</sup> Despite the increased production, assault shipping remained in short supply as the Allies planned amphibious assaults in both the European and Pacific Theaters. For example, the 1942 plans for Roundup and Sledgehammer estimated a requirement of 300 landing craft, infantry, large (LCI [L]), but by April of 1943, the US had only produced 302 LCI (L).<sup>35</sup> The limited availability of assault shipping was a critical planning factor as planners struggled to balance strategic resources against competing operational requirements. The merchant shipping of the Allies faced a distinctly different set of challenges.

Merchant shipping provided the strategic lift necessary to move personnel, equipment, and materials from the United States across the Atlantic and Pacific Oceans. The strategic port-to-port operations had to cover vast distances and required coordinated planning to account for load, unload, and transit times. The threat of the German navy in the Atlantic and the Japanese navy in the Pacific disrupted the strategic convoy system. German U-boats targeted Allied shipping lanes to disrupt the strategic supply chain. The Kriegsmarine (German navy) inflicted heavy losses on Allied shipping in the Atlantic. U-boat attacks sank 1,027 ships resulting in the loss of over 5,700,000 gross tons of supplies in route to ports in Europe and North Africa by May of 1943.<sup>36</sup> The effectiveness of German anti-shipping efforts limited the freedom of navigation in the Mediterranean and severely limited the use of the Suez Canal to resupply the Middle-East and Burma theaters. In response, the Allies protected vulnerable shipping by utilizing an 8,000-mile shipping route around Africa to support operations in the Middle East and Burma.<sup>37</sup> The British viewed controlling the sea lines of communication in the Mediterranean and securing shipping through the Suez Canal as critical requirements for defeating the Germans and eventually the

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<sup>34</sup> Coakley and Leighton, *Global Logistics*, 17.

<sup>35</sup> *Ibid.*, 17, 20.

<sup>36</sup> Matloff, *Strategic Planning*, 44.

<sup>37</sup> Coakley and Leighton, *Global Logistics*, 9.

Japanese. Secure shipping lanes in the Mediterranean supported lend-lease shipments to the Soviet Union, enabled Allied offensives on the European continent, and significantly shortened the distance to Asian ports by utilizing the Suez Canal.

Roosevelt believed the military planners were too conservative in their planning, and despite the challenges posed by limited assault shipping and threats to strategic transportation advocated an all-of-the-above strategy. The United States would fight a two-front war. Roosevelt expected the US military to aggressively pursue the “Europe First” policy and fight the Japanese in the Pacific. Churchill presented Roosevelt a plan to invade Sicily after the North African campaign ended. The plan appealed to Roosevelt’s desire to act more aggressively in Europe. Consequently, he approved the plan and expanded operations in the Mediterranean.

The decision to invade Sicily sought to achieve three critical strategic aims: secure sea lines of communication, divert German resources away from the Soviet Union, and compel the surrender of Italy.<sup>38</sup> Allied control of Sicily provided ports and airfields to base naval and air assets necessary to secure Allied shipping from attacks by German U-boats and land-based fighters. Securing the Mediterranean shipping lanes dramatically reduced the distance and time required to support Allied efforts in the Middle East and Asia by securing passage through the Suez Canal. Allied basing on Sicily threatened Germany’s southern border and its eastern European allies and territory. For instance, the distance from Sicily to the Calabrian toe of Italy was only two miles across the Strait of Messina.<sup>39</sup> Basing on Sicily made plans to invade Corsica and Sardinia feasible because Axis control over sea lanes between the islands and North Africa was no longer prohibitive. If Germany desired to retain control over Italy and protect its allies and resources, it would have to divert forces and resources away from the Eastern Front. The critical

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<sup>38</sup> Blumenson, *Salerno to Cassino*, 6-8.

<sup>39</sup> *Ibid.*, 12.

objective of operations in Italian territory, however, was to weaken the Axis by compelling Italy to surrender.

The German and Italian response to an invasion of Sicily was the real wildcard in the Allied military plans. Field Marshal Albert Kesselring, writing after the war, reflected on the view of Italy as a German ally. Kesselring was a Luftwaffe general appointed as *Oberbefehlshaber* (Commander-in-Chief South) in December of 1941. His responsibility was to coordinate Axis operations in the Mediterranean with the Italian *Commando Supremo* (Supreme Command).<sup>40</sup> Ideally, Kesselring believed Italy's contribution to the Axis fulfilled two roles: the *stuetzpunkt* (base of support) and *waffentraeger* (arms bearer). The Italian peninsula and islands provided "ports and shipyard installations [which] satisfies the highest requirements." Italian ports and shipyards, fortified coastal areas and supported airfields in Italy, and North African bases at Bizerte, Tunisia, and Tobruk, Libya extended Axis naval and air control of the Mediterranean. While Italy and its possessions satisfied Kesselring, he had a decidedly different opinion of its capability to fulfill the second role as arms bearer. He asserted the Italians never fought well during World War II. The Italian army and people lacked the will to fight following Italy's bloody colonial wars in Africa and the subsequent decisive Allied campaign in North Africa.<sup>41</sup> The poorly equipped and led Italian army lacked the will to fight. The German assessment of Italy's contributions correlates closely to Allied assumptions. Italian ports and airfields provided Germans with extended lines of operation, increased operational reach, and formidable defensive positions to interdict sea lanes. However, the Italian armed forces were a

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<sup>40</sup> Douglas Porch, *The Path to Victory* (New York: Farrar, Straus and Giroux, 2004), 422-423; The *Commando Supremo* was officially the *Stato Maggiore Generale* (Armed Forces General Staff) and advised Mussolini as Head of the Government additional information see, Lieutenant Colonel Albert N. Garland and Howard McGaw Smyth, *Sicily and the Surrender of Italy* (Washington, DC: Center of Military History, 1986), 29.

<sup>41</sup> Albert Kesselring, *Italy as a Military Ally*, in *World War II German Military Studies*, ed. Donald S. Detwiler, Jurgen Rohwer, and Charles B. Burdick (New York: Garland, 1979), 1-6. Closely review and revise all footnotes.

shell of a fighting force and continued fighting would compel the government of Italy to surrender.

The Casablanca Conference had concluded with the approval of Roosevelt and Churchill to invade Sicily but did not determine follow-on operations. The Combined Chiefs of Staff (CCS) informed General Eisenhower “that an attack against SICILY will be launched in 1943, with the target date as the period of the favorable July...moon (Code designated HUSKY)”.<sup>42</sup> The Allies also agreed to increase the strategic bombing of Germany from bases in the UK.<sup>43</sup> The Sicily invasion and increased strategic bombing intended to set conditions to weaken Germany for a future cross-channel invasion. The conference failed to set long-term objectives but did begin the process of organizing a coherent European strategy in the Mediterranean. However, the greatest strategic impact of the conference was Roosevelt’s declaration of the “unconditional surrender” at a news conference with Prime Minister Churchill on 24 January 1943.<sup>44</sup>

Roosevelt’s decision to announce the unconditional surrender policy was a surprise to Churchill and members of the JCS. The intent of unconditional surrender was not to destroy the people of the Axis powers, but instead the philosophies of fascism and militarism. Roosevelt did not want to repeat what he saw as the failures of the Versailles Treaty and his belief that destructive ideologies were at the root of modern wars, not the people. Roosevelt would make no political guarantees before the Axis powers surrendered. Despite Roosevelt’s declaration to not destroy the people of the Axis nations, he escalated Clausewitz’s scale of war from real toward absolute war. Roosevelt declared before the Casablanca announcement, “I am not willing at this time to say we do not intend to destroy the German nation.”<sup>45</sup> Roosevelt’s political goal was to

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<sup>42</sup> Allied Force Headquarters, *History of Allied Force Headquarters* (n.p.; 1944), 132.

<sup>43</sup> Matloff, *Strategic Planning*, 27.

<sup>44</sup> *Ibid.*, 37.

<sup>45</sup> Brian L. Villa, "The U.S. Army, Unconditional Surrender, and the Potsdam Proclamation," *The Journal of American History* 63, no. 1 (June 1976): 69-70, accessed October 30, 2018,

unify Allied war efforts in a common cause—the total defeat of Germany, Italy, and Japan. However, the policy of unconditional surrender created unintentional strategic problems in the view of Churchill and Allied strategists.

In the near term, Roosevelt's proclamation complicated the desired surrender of Italy. Roosevelt and his advisors did not see the necessity of demanding an unconditional surrender from it. A softer approach would be sufficient if it meant Italy was out of the war. Nevertheless, Roosevelt's political accommodation of Churchill motivated the demands for Italy's unconditional surrender. The British and Italians had long-standing animosity stemming from colonial and naval competition before the start of World War Two.<sup>46</sup> The US military feared unconditional surrender would promote greater resistance from the Axis population if political negotiations failed to set reasonable conditions for surrender. As a result, the US took a pragmatic approach and limited unconditional surrender terms to military forces. The Allies applied these terms to Vichy French forces in North Africa and Italian forces in late July as Operation Husky was nearing its conclusion.<sup>47</sup> The military goal was the surrender of Italy's military to reduce the risk and cost to Allied forces. The surrender of Italy's military potentially avoided a long and bloody conflict. The surrender of Germany was a different matter altogether and still off in the future as the Allies continued preparations for the invasion of Sicily and operations after Husky.

The CCS did not set a formal date to execute Operation Husky until the Allied leaders met at the Trident Conference in Washington, DC in May of 1943.<sup>48</sup> The Allies again came to the bargaining table with different strategies to defeat Germany. Churchill and the COS advisors pushed the surrender of Italy as the primary effort in 1943. They sought to exploit the

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<https://www.jstor.org/stable/1908990>; Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 77.

<sup>46</sup> Villa, "Unconditional Surrender," 72.

<sup>47</sup> Porch, *The Path to Victory*, 464.

<sup>48</sup> Matloff, *Strategic Planning*, 126.

opportunities provided by Operation Husky to invade the Italian peninsula and knock Italy out of the war.<sup>49</sup> Moreover, a campaign on mainland Italy would also relieve pressure on the Soviet Union, set conditions for a cross-channel invasion by diverting German forces to Italy, and expose war production in southern Germany to strategic bombing.<sup>50</sup>

Roosevelt and the JCS were determined to get a commitment from the British to designate the cross-channel invasion as the primary European strategy. Marshall and the JCS wanted to limit operations in the Mediterranean. The principal issue for the US planners was the allocation of resources, especially the forces and shipping, to make available for AFHQ planning and execution.<sup>51</sup> The US goal continued to be the buildup of combat power and assault shipping in the UK to conduct Roundup. Marshall believed the Italian campaign would needlessly draw resources away from Roundup and further delay the invasion into northern France and eventually Germany proper.

The JCS and COS compromised to resolve differences between US and British strategies. The JCS secured a British commitment to Roundup, eventually renamed Overlord, as the primary Allied strategy and set 1 May 1944 as the date for the cross-channel invasion. The COS secured JCS commitment for the AFHQ to plan and execute an invasion of Italy and the islands of Corsica and Sardinia after the conclusion of Husky. The CCS approved Operation Husky and confirmed 10 July as the execution date.<sup>52</sup> The Trident Conference did not resolve the issues of Italian surrender or approve additional Mediterranean operations post-Husky. However, the CCS did develop a more unified vision of the European strategy. The main effort for a cross-channel

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<sup>49</sup> Garland and Smyth, *Surrender of Italy*, 21-22.

<sup>50</sup> Matloff, *Strategic Planning*, 128-129.

<sup>51</sup> *Ibid.*, 131.

<sup>52</sup> Garland and Smyth, *Surrender of Italy*, 21-23; Matloff, *Strategic Planning*, 146.

invasion became the priority for Allied efforts, while contingency operations in the Mediterranean following Husky were supporting operations to achieve limited strategic aims.

### Operational Planning: Expanding the Mediterranean Theater of Operations

Following the Trident Conference, Churchill, Marshall, and Brooke departed for Algiers to meet with Eisenhower. The meeting finalized plans for Operation Husky and set conditions to plan subsequent operations. The strategic aims for post-Husky operations were “to eliminate Italy from the war and to contain the maximum German forces.”<sup>53</sup> The morale of Italian forces and the German response following the invasion of Sicily set the conditions to execute any post-Husky contingency operation.<sup>54</sup> Eisenhower, who received Churchill’s full support, favored exploiting the defeat of Axis forces as soon as possible. If the aim was to defeat Italy, Eisenhower believed an invasion of the Italian mainland and not more islands presented the best way to achieve the goal.

Marshall supported the war aim to defeat Italy, but did not support a direct invasion of Italy if compelling conditions, such as a significantly degraded German and Italian resolve to defend Italy, did not materialize following Husky. Marshall continued to worry that the requirements to conduct a campaign on the Italian mainland would divert Allied resources away from the buildup in the UK.<sup>55</sup> A significant concern for Marshall was the availability of inter-theater transport ships to move troops and supply, and the assault shipping to conduct a cross-channel attack. The attrition estimates of 40 to 80 percent for Allied shipping and assault craft during an amphibious invasion of mainland Italy were neither sustainable or acceptable to

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<sup>53</sup> Coakley and Leighton, *Global Logistics*, 174-175; Blumenson, *Salerno to Cassino*, 9.

<sup>54</sup> Blumenson, *Salerno to Cassino*, 9-10.

<sup>55</sup> Matloff, *Strategic Planning*, 153.

Marshall.<sup>56</sup> The AFHQ would need to plan follow-on operations utilizing only the means available in theater following the completion of Operation Husky. Eisenhower and the AFHQ would also be expected to maintain the redeployment schedule of men and material to the UK and Burma, as determined at the Trident Conference.

Marshall proposed that Eisenhower plan two post-Husky contingency operations: an invasion of the Italian islands of Sardinia and Corsica, and a mainland invasion of Italy at the Calabrian toe.<sup>57</sup> Churchill and Eisenhower agreed to Marshall's proposed follow-on operations. A memo Marshall drafted for Roosevelt and Churchill to Soviet Premier Joseph Stalin stated, "In the Mediterranean, the decision was taken to eliminate Italy from the war as quickly as possible. General Eisenhower has been directed to prepare to launch offensives immediately following the successful completion of HUSKY...for the purpose of precipitating the collapse of Italy."<sup>58</sup> The Allied leadership had committed to the defeat of Italy and the opening of a southern front in Europe to divert German resources and relieve pressure on the Soviet Union. Eisenhower and the AFHQ planners needed to answer to the following questions: which operations would achieve the military aims of defeating Italy and contain German forces in Italy, and how do Allied forces employ their limited available means to achieve those aims?

Eisenhower delegated the operational planning for invading the island of Sardinia, off the northwest coast of Italy, and Taranto, located on the heel of the peninsula, to Lieutenant General Mark W. Clark, commander of the Fifth Army. The British Eighth Army received responsibility to plan mainland invasions. The primary objective of the operations was to secure ports and

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<sup>56</sup> Planners determined the attrition estimates for European and Pacific amphibious assault shipping requirements at the Trident Conference, for a more detailed discussion see Coakley and Leighton, *Global Logistics 1943-45*, 73.

<sup>57</sup> Blumenson, *Salerno to Cassino*, 9-10.

<sup>58</sup> George C. Marshall, *The Papers of George Catlett Marshall: "The Right Man for the Job" December 7, 1941-May 31, 1945*, ed. Larry I. Bland and Sharon Ritenour Stevens, vol. 3 (Baltimore: Johns Hopkins University Press, 1991), 709.

airfields. British forces would secure small ports and airfields near Reggio, San Giovanni, and Crotone. The Fifth Army planned to secure the ports and airfields on Sardinia.<sup>59</sup> The ports would provide basing to build up troops and supplies to conduct potential future operations in southern France and mainland Italy. The airfields would base Allied strategic bombers to attack targets in southern Germany, northern Italy, and the Balkans. Additionally, the captured Italian airfields would ensure Allied air superiority and protect vital shipping lanes in the Mediterranean. The Allies planned to use the ports to extend the operational reach and as basing necessary to sustain campaigns in the Mediterranean.

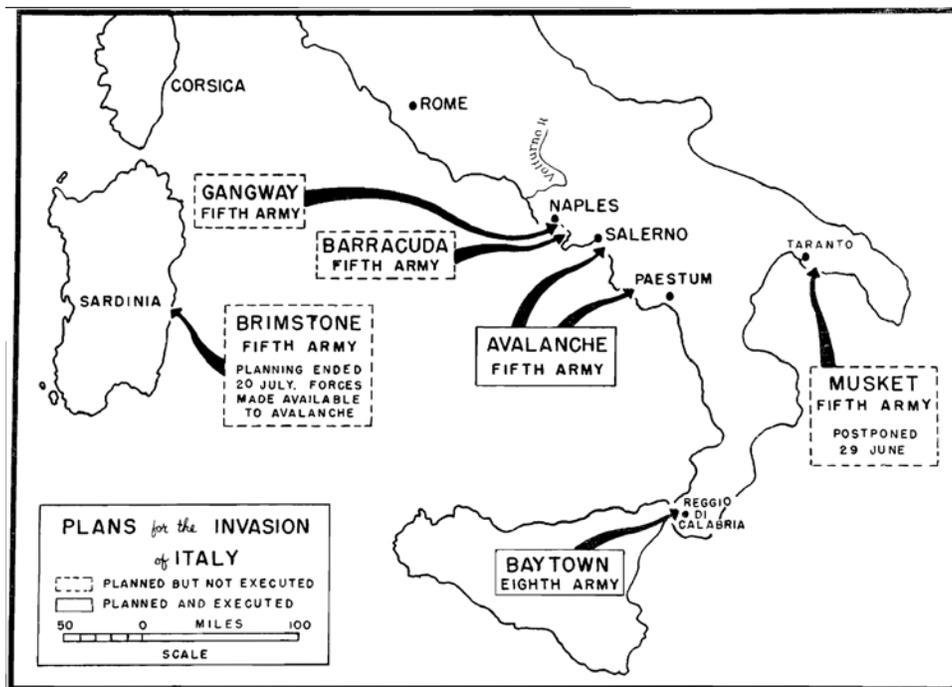


Figure 1. Post-Husky Planned Operations. Fifth Army, *Engineer History*, Vol. 1, *Mediterranean Theater* (Fifth Army Headquarters, 1945), map 1.

The Army Service Force (ASF) developed a relatively simple sustainment plan to provide area support to Allied forces operating in dispersed theaters of operation. Materials and personnel moved by merchant ships from ports of embarkation in the United States and the United

<sup>59</sup> Blumenson, *Salerno to Cassino*, 11-12.

Kingdom to transshipment ports in the theater. The trans-shipment ports housed the base sections, which distributed supplies to depots which pushed supplies to combat units. The network of theater base sections and depots provided the operational link between sources of strategic resources and tactical combat units. Major and medium seaports provided the infrastructure for theater base sections to conduct logistic operations. The size of the ship a port could receive, and the port's offload capabilities determined port classification. ASF assigned operational control of the port to the Transportation Corps, but theater commanders had the authority to allocate and distribute material to fill combat requirements.<sup>60</sup> The focus of sustainment was the transportation and distribution of supply from the point of origin to the point of consumption. Quartermaster Corps doctrine in 1941, described the fundamentals of supply to guide sustainment planning. The fundamentals of supply have evolved into the current US Army principles of sustainment.

The 1941 fundamentals stressed “continuity, flexibility, elasticity, mobility, and simplicity.” Continuity is a regular and uninterrupted flow of supply from the industrial base to tactical formations and individual soldiers consuming the supply. Flexibility requires a supply system to adapt to operational requirements to allow commanders freedom of maneuver. Mobility is identifying the storage and movement of supply necessary to not burden tactical maneuver but “attain reasonable certainty of supply combined with the necessary tactical mobility.”<sup>61</sup> *FM Quartermaster Operations* did not define simplicity, but the current US Army principle of simplicity helps explain the term. It is the processes and procedures created to reduce complexity in sustainment operations.<sup>62</sup> These fundamentals of supply helped organize the overarching

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<sup>60</sup>US War Department, *Field Manual (FM) 55-10, Water Transportation: Oceangoing Vessel* (Washington DC: US Government Printing Office, 1944), 16; NATOUSA-MTOUSA, *Logistical History of NATOUSA-MTOUSA* (Naples: G. Montanino, 1945), 20-22.

<sup>61</sup> US War Department, *Quartermaster Field Manual (FM), Quartermaster Operations* (Washington DC: US Government Printing Office, 1941), 8-11.

<sup>62</sup> US Army, *ADP 4-0* (2012), 3.

supply system, but the requisition procedures facilitated the type and amount of replenishment theater base sections would receive. The class of supply determined the requisition procedure used to restock base sections and depots.

During combat operations, tactical forces obtained supply through local sources and regular military requisition processes. The procurement of supply from local sources required contracting officers to purchase with cash or suitable indemnity. The most reliable source of supply, however, was through regular military procurement processes and distributed from the zone of the interior depots resupplied by base sections. The zone of the interior was a specific area within a theater of operations defined by territorial boundaries and contained general, area, and service depots. General depots stored all classes of supply for multiple area and service depots. Area depots stored supplies for service depots within a specific operational territory. Service depots stored supply by class and managed by the associated branch. Quartermasters managed depots storing and distributing class I (rations), II (clothing and equipment), III (petroleum, oil, and lubricants), and IV (construction materials). Ordnance units managed depots which stored and distributed class V (ammunition) and conducted maintenance activities.<sup>63</sup> The supply system streamlined the flow of supply between storage areas to meet operational requirements ensuring the endurance and operational reach of combat units. Supply shipped from ports of embarkation to base sections and subsequently dispersed to the various levels of depots through three requisition methods.

The class of supply determined the process to requisition resupply through the supply system. The number of personnel and the number and types of vehicles in a theater of operation generated an automatic issue of Class I and III. The Petroleum Section of the AFHQ requested resupply for the Mediterranean Theater to maintain a maximum of a 70-day stockage objective.

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<sup>63</sup> US War Department, *Quartermaster Field Manual (FM), Quartermaster Operations* (Washington, DC: US Government Printing Office, 1941), 17-18.

Class III constituted fifty percent of all supply shipped into the Mediterranean Theater. Base sections in North Africa required 1,576 ocean tankers to maintain stockage levels during the war. The petroleum managers used thirty four shuttle vessels to ship supply from major bulk storage facilities to shallow-draft ports and between bulk storage facilities.<sup>64</sup> Fuel shipped between Class III storage depots by truck, rail, and eventually pipelines to depots closer to the front and supported combat units. The transport of Class III placed a considerable strain on the allocation of strategic and theater shipping. Unlike the automatic replenishment of Class III, estimated consumption rates determined Class V resupply, which the general commanding the theater Services of Supply (SOS) allocated to tactical units.

Two serious challenges confronted the SOS to requisition and distribute ammunition. First, the US Army had no system of record to annotate and report actual consumption rates reliably. The SOS used units of fire to anticipate Class V consumption rates during combat operations. A unit of fire was a tactical estimate of how many tons and types of ammunition a unit would use in combat. For example, ordinance planners estimated a 105mm howitzer used one and two-thirds units of fire in the first seven days of combat in Sicily and one and one-half units for the next seven days.<sup>65</sup> Secondly, the tonnage of ammunition continuously transported between depots was staggering. Transportation assets moved over twelve million long tons of ammunition between temporary holding depots before being issued to combat units during operations in the Mediterranean. During Operation Husky, the Allies transported 43,000 long tons of ammunition from North Africa to Sicilian beaches during ship to shore operations.<sup>66</sup> The

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<sup>64</sup> NATOUSA-MTOUSA, *Logistical History*, 20-22.

<sup>65</sup> NATOUSA-MTOUSA, *Logistical History*, does not annotate the weight or number of rounds constituting a unit of fire but each weapon system and type of munition had its own unit of fire calculation. This indicates the complexity and uncertainty of planning sustainment. For further information on ammunition resupply see, NATOUSA-MTOUSA, *Logistical History*, 85-86.

<sup>66</sup> NATOUSA-MTOUSA, *Logistical History*, 97; The stowage capacity of a shipping vessel is measured in long tons, which is equal to 2,240 pounds see, Mike Darton and John Clark, *The Macmillan Dictionary of Measurements* (New York: Macmillan, 1994), 120.

requirements for units of fire were not overly reliable because they depended on the resistance the enemy forces mounted and the rate of fire of Allied forces used to overcome the enemy resistance. These conditions were difficult to forecast without historical data or accurate expenditure reporting. Additionally, the limited shipping available to operational planners in the Mediterranean required not only estimates for shuttling all classes of supply from base sections in North Africa to Italian areas of operation but also the men and equipment necessary to fight the war.

As the Allies launched the invasion of Sicily on the morning of 10 July 1943, the planners for the Fifth Army and the British Eighth Army were already planning post-Husky operations. The Fifth Army planned for Operation Brimstone, the invasion of Sardinia, and Operation Musket, the amphibious assault near Taranto. British planners also prepared for invasions on the toe of Italy. All plans had the same operational objective to seize ports and airfields. The purpose was to provide basing to establish area and service depots to sustain land and air forces fighting in Italy. The limited objectives of the planned operations nested into the strategic aim “to eliminate Italy from the war and contain the maximum number of German forces.”<sup>67</sup> The Allies assumed Italy was on the verge of collapse and further attacks on Italian territory would compel Italy to surrender. Another assumption about an Allied presence in Italy was that the Germans would respond by moving combat power from the Eastern Front to defend Germany’s southern border. The overall result of Allied actions reduced strains on the Soviet Union and forced Germany to address multiple strategic dilemmas with increasingly diminishing resources.

By 17 July, the Allied offensive in Sicily had achieved remarkable success against the Italian and German defenders. The elite German Herman Goering Division conducted a fighting withdrawal toward Messina, while Allied forces secured the southern portion of the island

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<sup>67</sup> Fifth Army, *Fifth Army History*, 16.

including ports and airfields. The Italian army was in disarray as it sought to defend Palermo and Messina. The 60,000-man Italian force conducting the defense was poorly equipped and suffered from low morale. Eisenhower requested permission from the CCS to begin planning for a mainland invasion to exploit the Allied success on Sicily and the opportunity to knock Italy out of the war.<sup>68</sup> The CCS approved Eisenhower's recommendation, and he instructed Clark to coordinate with Mediterranean naval and air commands to begin planning several options to invade Italy with six divisions near Naples or Operation Avalanche near Salerno.<sup>69</sup>

A Radio Rome announcement on 25 July accelerated Allied planning for a mainland invasion of Italy. King Victor Emmanuel III had removed Benito Mussolini from power and elevated Field Marshal Pietro Badoglio to head the Italian government. The king and his closest advisors sought to break from the alliance with Germany. Allied operations in Sicily and the strategic bombing against Rome combined with the growing public animus toward Mussolini had undermined Italian willingness to continue the war.<sup>70</sup> The Italian problem facing the Allies was not the operational planning required to invade mainland Italy. The Fifth Army and British Eighth Army had been planning contingency operations since before the invasion of Sicily. The Allies, however, lacked an agreement on terms for a peace settlement or armistice with Italy. The lack of an agreement created two military problems. First, a demoralized Italian military still allied with Germany provided additional defensive capability against an Allied invasion. Secondly, the occupation of Italy would require a substantial occupation force if Italy did not accept peace terms quickly. Despite these obstacles, the CCS informed Eisenhower to plan Operation

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<sup>68</sup> Garland and Smyth, *Surrender of Italy*, 237-238.

<sup>69</sup> Fifth Army, *Fifth Army History*, 16; For more detailed information on the collapse of German and Italian defense of Sicily, see Garland and Smyth, *Surrender of Italy*.

<sup>70</sup> Blumenson, *Salerno to Cassino*, 20; Garland and Smyth, *Surrender of Italy*, 263-268.

Avalanche to exploit military success in Sicily and the destabilized political situation in Italy to compel Italy's surrender.

The Germans reacted to the overthrow of Mussolini differently across the levels of German command. Hitler and his political advisors expected an Italian betrayal, while Kesselring claimed to have been caught off guard by the arrest and ouster of Mussolini from power. Italian and German officials met in mid-July at Feltre, Italy to determine the defensive plan for Sicily and the Italian mainland. The Italian government expected Mussolini to request a termination of the alliance from Hitler. Mussolini did not request to terminate the alliance but instead committed to fighting a determined defense in Sicily. General Vittorio Ambrosio, the chief of the Italian *Comando Supremo* despite his opposition to Mussolini, agreed to send reinforcements to Sicily as a part of the plan.<sup>71</sup>

Kesselring noted that Hitler, advised by Field Marshal Erwin Rommel, regarded the arrest of Mussolini as a complete policy shift on the part of the Italian government to quickly terminate the war and stab Germany in the back. Army Group B, located in northern Italy, reacted by occupying border fortifications and securing rail lines into southern Germany. Kesselring received mixed signals from the Italian military and its intention to fight. He did not trust Ambrosio's will to fight or loyalty to his German allies. However, he believed the relationships between German and Italian staff officers at the front were excellent, which presented an opportunity for continued Italian cooperation. The overthrow of Mussolini did not entirely surprise the Germans, but without Mussolini in power, it was evident that Germany would soon lose its Italian ally. The result was an increased German presence in northern Italy and preparations for the execution of the contingency plan "Axis" to defend and secure German interests in Italy.<sup>72</sup>

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<sup>71</sup> Garland and Smyth, *Surrender of Italy*, 263-268.

<sup>72</sup> Kesselring, *Italy as a Military Ally*, 6, 10-11, 24.

The day following Radio Rome's announcement of Mussolini's arrest, the AFHQ issued Clark orders to accelerate plans to seize the port and airfields at Naples. Eisenhower's desired end state for the Fifth Army was to "seize the port of Naples and securing the airfields nearby, with a view toward preparing a firm base for further offensive operations."<sup>73</sup> The ASF identified the port at Naples as a location to establish the Peninsular Base Section during the Casablanca Conference. The port provided capabilities to receive merchant ships and had existing transportation infrastructure to support troops directly.<sup>74</sup> The Fifth Army coordinated with the Western Naval Task Force (WNTF) and Army Air Forces Command to select the invasion location to seize Naples with the available resources in Sicily and North Africa.

Operation Baytown, Field Marshal Montgomery's invasion of the Calabrian toe, supported the Fifth Army's invasion. Montgomery's Eighth Army was to advance along the western Italian coastline to reinforce the Fifth Army near Salerno. Despite British protests, the JCS refused to change the strategic allocation of forces and assault craft committed to the buildup capabilities in the UK and Burma.<sup>75</sup> The lack of available assault craft created a significant problem during the planning process and eventually during the execution of the operation. The Allies needed assault shipping to transport US and British forces from Sicily and from Oran and Bizerte in North Africa to the beaches selected for both the Fifth and Eighth Army invasions.<sup>76</sup>

The sites under consideration for the invasion included beaches along the Gulf of Gaeta, Naples, and near Salerno located south of Naples. Planners rejected a direct invasion of Naples because strong fortifications protected the sea approaches and the beaches were unsuitable for

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<sup>73</sup> General Eisenhower's written directive provided Operation Avalanche's objective to General Clark see, Fifth Army, *Fifth Army History*, (1945), 18; Army Service Forces, *History of the Planning Division*, 91.

<sup>74</sup> Army Service Forces, *History of the Planning Division*, 92.

<sup>75</sup> Blumenson, *Salerno to Cassino*, 19-20, 23.

<sup>76</sup> Fifth Army, *Fifth Army History*, 21.

landing assault craft. The Gulf of Gaeta had suitable beaches only 13 miles north of Naples, but minefields and defensive works protected the beach, and the plains surrounding the beaches were highly suitable for German armor maneuver. Additionally, Allied forces landing at Gaeta were cut off from the British Eighth Army in the south and little air support from land-based fighters located in Sicily.<sup>77</sup>

Salerno Bay, unlike Naples or Gaeta, provided a feasible site for an amphibious assault. The 20-mile crescent shaped beach extended from the mountainous Sorrento peninsula north of Salerno to Paestum and Agropoli in the south. The beach merged with the Sele plain, which the Sele River divided seventeen miles south of Salerno. The confluence of the Sele River and the Calore River north-west of Paestum further divided the Sele plain. Rugged mountains and foothills ringed the beaches of Gulf of Salerno. The 3,000-foot sheer cliffs of Mount Soprano overlooked Paestum, and Mount Eboli loomed over the beaches north of the Sele River.<sup>78</sup> The Bay of Salerno was not a perfect landing site, but it was the best poor option available. The high ground surrounding the beaches provided defending German forces excellent artillery positions to observe and attack assaulting forces and the advance from Salerno to Naples passed through the rugged terrain of the Sorrento peninsula.<sup>79</sup> However, the beaches provided clear sea approaches and a suitable beach gradient to discharge men and equipment close to the beach from Landing Ship, Tank (LST), Land Ship, Infantry (LSI) and other assault craft. The WNTF determined beyond a few batteries defending approaches from the beach no substantial defensive works beyond tank ditches and machine gun positions defending the beach.<sup>80</sup> Clark preferred a landing

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<sup>77</sup> Blumenson, *Salerno to Cassino*, 25.

<sup>78</sup> Military Intelligence Division, *Salerno: American Operations from the Beaches to the Volturno (9 September-6 October 1943)* (Washington, DC: War Department, 1944), 4-7.

<sup>79</sup> Fifth Army, *Engineer History Mediterranean Theater*, Vol. 1, *Fifth Army*, (Italy: 1945), 1; Blumenson, *Salerno to Cassino*, 25.

<sup>80</sup> Western Naval Task Force, *Operation Plan*, Appendix A, Beach Report.

site closer to Naples but reluctantly accepted the Bay of Salerno as the invasion site after the air force commander informed him that he could not guarantee air cover north of Salerno.<sup>81</sup>

The Allies successfully defeated the last of German and Italian resistance in Sicily on 17 August. Eisenhower wanted Operation Avalanche and Operation Baytown to commence immediately, but the availability of assault shipping prevented the launching of two simultaneous operations. Operation Baytown received priority to transport the British Eighth Army to the Calabrian toe. After retrofitting, the ships were reallocated to move the Fifth Army to invade Italy near Salerno on 9 September.<sup>82</sup> The Allies finally were bringing the war to the European continent. As the Eighth Army began its invasion near Reggio on 3 September, the first convoy of British troops from the 56th Division departed Tripoli sailing toward the beaches of Salerno Bay.<sup>83</sup>

## Operation Avalanche

Fifth Army plans for Operation Avalanche divided the Sele plain into two areas of operation delimited north and south by the Sele River. Clark assigned the British X Corps, commanded by Lieutenant General Sir Richard L. McCreery, the northern sector which included the beaches near Salerno. General McCreery's forces included the British 45th and 56th Infantry Divisions, 7th Armored Division, two British Commandos (battalions), and three US Ranger battalions. Clark gave the southern sector and the beaches near Paestum to VI Corps, commanded by Major General Ernest J. Dawley. The 36th Division was the primary combat formation in the VI Corps. The Fifth Army's reserves consisted of two formations. Force I, a regiment of the 45th Division, positioned on assault ships in the Bay of Salerno. Force II, a regiment of the 82nd Airborne Division, located in Sicily. The initial invasion forces would receive reinforcements

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<sup>81</sup> Fifth Army, *Engineer History*, 4.

<sup>82</sup> Fifth Army, *Fifth Army History*, 21-22.

<sup>83</sup> Blumenson, *Salerno to Cassino*, 53.

from the 45th Division, 34th Division, 13th Field Artillery Brigade, the 1st and 2nd Armored Divisions, and additional support troops. Clark's plan estimated his 125,000 forces would face 39,000 enemy forces on D-Day with 60,000 German reinforcements available by D plus 3.<sup>84</sup>

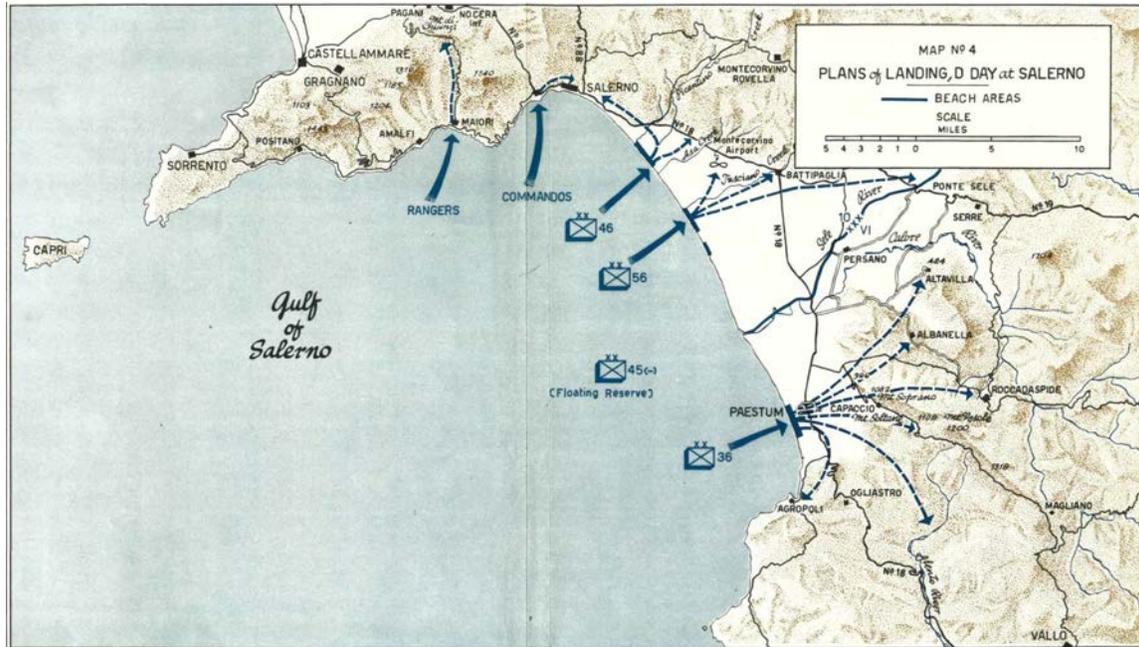


Figure 2. D-Day Invasion Plans. Fifth Army, *Fifth Army History*, map 4.

The Allies expected Italian resistance during the amphibious assault to be like Sicily, which is to say the Allies expected very little. In the weeks leading up to the invasion, the Italian government sought an armistice with the Allies to bring Italy's involvement in the war to an end. Starting in mid-August and continuing through early September 1943, the Italian government negotiated peace terms with the Allies. On 2 September, Marshall communicated the terms of peace to Eisenhower along with the formal approval to commit Allied forces to Operation Avalanche. The terms of Italy's unconditional surrender negotiated with Badoglio included the end of hostilities, surrender of the Italian navy to the Allies, and Italian efforts to deny German

<sup>84</sup> Fifth Army, *Fifth Army History*, 25-26; Blumenson, *Salerno to Cassino*, 49.

access to military facilities.<sup>85</sup> Eisenhower wrote a cable on 8 September responding to Badoglio's intention to postpone the armistice due to the presence of German forces in Rome. "Plans have been made on the assumption you were acting in good faith...failure now on your part to carry out the full obligations of the signed agreement will have most serious consequences for your country."<sup>86</sup> Eisenhower announced the Italian surrender on the eve of Operation Avalanche.

As the Allied invasion fleet steamed toward the Salerno Gulf, at precisely 1830 hours on 8 September, Eisenhower announced that the "Italian Government has surrendered its armed forces unconditionally."<sup>87</sup> The news spread quickly throughout the fleet. The reaction to Italy's surrender elicited a variety of responses across the troops packed tightly on assault ships. "I never again expect to witness such scenes of sheer joy, speculation was rampant...we would dock in Naples harbor unopposed," recalled Major Warren Thrasher, "with an olive branch in one hand and an opera ticket in the other."<sup>88</sup> General Fred L. Walker, commander of the 36th Division, and other senior leaders held a much less optimistic view. They believed the Germans would vigorously defend the beaches and make the landings much more difficult.<sup>89</sup> The announcement created confusion, excitement, and uncertainty as the invasion forces made their final landing preparations. Eisenhower's words also created confusion and uncertainty among the German and Italian military leadership.

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<sup>85</sup> Matloff, *Strategic Planning 1943-1944*, 246-247; For a more detailed discussion of the Italian surrender, see Garland and Smyth, *Surrender of Italy*.

<sup>86</sup> Dwight D. Eisenhower, *The Papers of Dwight David Eisenhower: The War Years III*, ed. Alfred D. Chandler and Stephen E. Ambrose (Baltimore: John Hopkins Press, 1970), 1403.

<sup>87</sup> Eisenhower announced the Italian surrender over Radio Algiers for full transcript of the message, see Garland and Smyth, *Surrender of Italy*, 509-509.

<sup>88</sup> Major Thrasher's account is from a monograph, *The Invasion of Italy*, written for the Infantry Advanced Officers Course see, Blumenson, *Salerno to Cassino*, 55.

<sup>89</sup> Blumenson, *Salerno to Cassino*, 55-56.

The German high command expected the Italian government to seek a termination of the war since Mussolini's removal from power in July. Rommel wrote to his wife on 9 September, "The Italian treachery is now fact."<sup>90</sup> Rommel, in a subsequent letter, noted by 10 September that some Italians were fighting alongside the British in southern Italy, and in the north, the Germans had disarmed the Italian army and sent its men to prison camps in Germany. "What a shameful end for an army!"<sup>91</sup> The unexpected announcement of the Italian government's surrender caught Kesselring by surprise. The field marshal contacted Italian government officials and generals demanding an answer to Eisenhower's pronouncement. Badoglio did not respond, and Italian generals claimed the surrender of Italy was a surprise to them as well. After German diplomats in Rome confirmed the news, Kesselring remarked "I saw the enemy [the Allies] and could now act. I also admit that no great gap was formed by the defection of the Italian armed forces which were no longer willing to fight."<sup>92</sup> Kesselring had begun the withdrawal of German forces from Sicily and Italian islands to the mainland before Operation Husky had concluded. The forces in the Calabrian toe withdrew toward central Italy leaving Montgomery's invasion mostly unopposed. The announcement, however, did remove any element of surprise for a pending Allied invasion near Naples.

Eisenhower's announcement and bombing raids against Rome and Kesselring's headquarters helped confirm German reports of an Allied invasion fleet massing near Naples. Kesselring asserted, following his capture, he knew "an invasion [would] take place on the night of 8-9 September 1943."<sup>93</sup> The German army had been preparing in the weeks leading up to the Allied invasions. The 16th Panzer Division defended the Bay of Salerno from Salerno to

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<sup>90</sup> Erwin Rommel, *The Rommel Papers*, ed. B. H. Liddell Hart, Lucie-Maria Rommel, Manfred Rommel and General Fritz Bayerlein (New York: Harcourt, Brace, 1953), 445.

<sup>91</sup> Rommel, *The Rommel Papers*, 445.

<sup>92</sup> Kesselring, *Italy as a Military Ally*, 31.

<sup>93</sup> *Ibid.*, 29.

Agropoli. After Italy's surrender, the Germans quickly manned Italian defensive fortifications. The Germans entrenched artillery and mortar positions in the hills encircling the coastline. Anti-aircraft guns defended the port of Salerno. Minefields and barb-wire lined the beaches to slow troops disembarking on the shore. The Herman Goering Division, which was still reconsolidating following its retreat from Sicily near Naples, and the 15th Panzer Grenadier Division near Gaeta reinforced the 16th Panzer Division. In the south, three divisions were retrograding northward from the Calabrian toe in the south.<sup>94</sup> Contact mines heavily defended the Bay of Salerno from the shallow water landing sites to six miles out to sea.<sup>95</sup> The German defenders intended to inflict heavy losses and repulse Allied forces attempting to establish a lodgment in Italy. In the early morning hours on the 9 September, the American and British troops, tightly packed into a vast array of landing craft, began their approach toward the awaiting Germans and the beaches of Salerno Bay.

The sustainment plan for Operation Avalanche during the assault phase estimated twelve days of supplies for over the beach operations, and limited resupply for X Corps through the port of Salerno. The planners assumed Allied forces would dislodge German and Italian defenders as easily has had occurred two months earlier in Sicily. The expectation was a quick seizure of the port of Naples and the establishment of an area base section. A determined German defense and the destruction of vital infrastructure caused by retreating German forces and the Allied bombing campaign soon invalidated this assumption.

During the assault phase of operations, Engineer Shore regiments and a limited number of ASF units received, segregated, and issued supply from assault ships.<sup>96</sup> US Army sustainment planners learned several lessons during supply over the beach operations in Sicily. The most

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<sup>94</sup> Military Intelligence Division, *Salerno: American Operations*, 14-16.

<sup>95</sup> Western Naval Task Force, *Operation Plan*, Appendix A, Mine Fields.

<sup>96</sup> Blumenson, *Salerno to Cassino*, 53.

notable one was the volume of supplies and materials brought ashore exceeded the capability of the receiving troops to move, classify, and segregate. Colonel Urban Niblo, commander of 6694th Ordnance Group, helped plan the ordnance sustainment for Fifth Army. He reduced the initial supplies coming over the shore to limit the weight individual soldiers needed to carry. Niblo's plan called for the bulk of Fifth Army's resupply to arrive on D plus 12.<sup>97</sup> The DUKW (2 ½-ton amphibious truck) had proven to be a valuable asset moving heavy loads during Sicily and would provide critical lift capabilities to establish the first supply depots in Italy. Niblo's plans aligned with the overall concept of quartermaster support to Fifth Army during Operation Avalanche.

The quartermaster plans accounted for sustainment deficiencies in prior Allied amphibious assaults during Torch and Husky. Colonel Joseph P. Sullivan, quartermaster of Fifth Army, developed a concept of support using a chronological plan consisting of three phases: assault, consolidation, and final. The assault phase prioritized reducing supply and equipment necessary to sustain combat forces. Small landing craft transferred supply from assault ships to supply dumps located in the lodgment area. The consolidation phase occurred after Allied forces controlled the space necessary to establish corps and division depots in the lodgment area. The final phase was the establishment of the base section and depots to support the area of operations.<sup>98</sup>

The VI Corps lodgment at Paestum illustrates Niblo's and Sullivan's plans to sustain combat forces from supply over the beaches to supply depots. Initially, supply dumps held the supply off-loaded at Blue, Yellow, Green, and Red beaches. After securing the lodgment, DUKWs and 2 ½ ton trucks transferred supplies to depots segregated by class of supply. The depot west of Paestum was the supply point for fuel, medical, maintenance, and other supplies.

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<sup>97</sup> Mayo, *The Ordnance Department*, 177-178.

<sup>98</sup> Ross and Romanus, *The Quartermaster Corps*, 75-76.

Depots located on Yellow beach contained additional medical, fuel, and the corps ammunition supply. The method of supply for the X Corps followed a similar pattern with a limited amount of supply offloaded at the port facilities in Salerno. Highway 18 provided the primary line of operation to push sustainment to Allied forces as they fought northward from Paestum and Salerno through the rugged Sorrento Peninsula to Naples and the Volturno River. Fifth Army planners anticipated using supply over the shore operations at Salerno and Paestum for only a few weeks, but weeks of hard fighting soon shattered the overly optimistic plans for a quick, easy march to Naples.

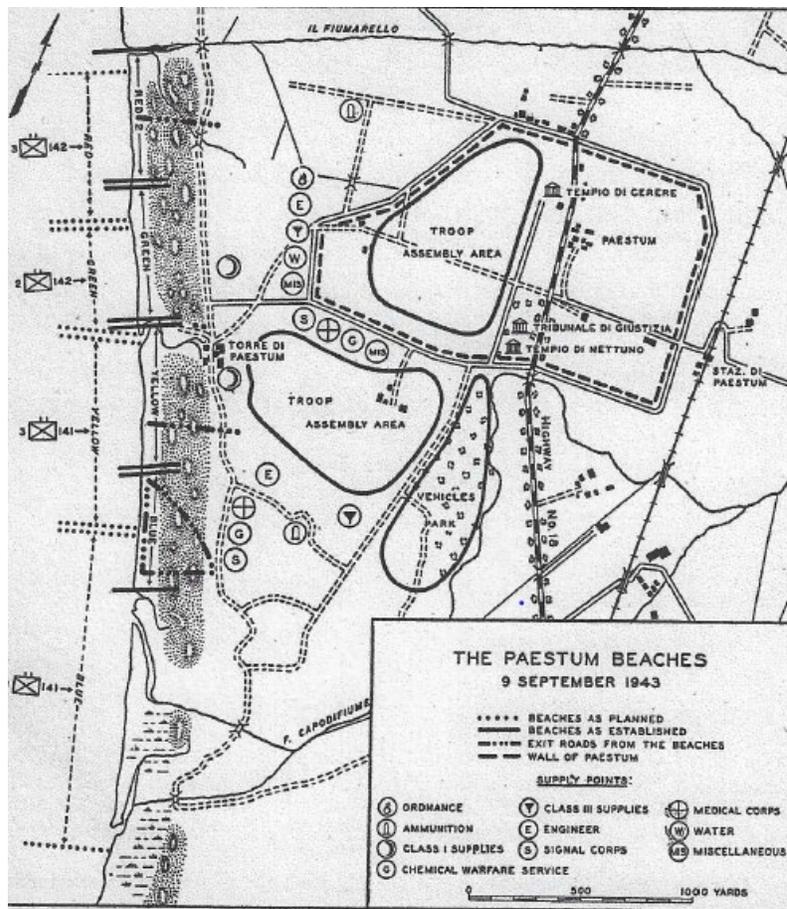


Figure 3. Corps Lodgment Area at Paestum. Military Intelligence Division, *Salerno: American Operations from the Beaches to the Volturno* (Washington, DC: War Department, 1944), 20.

The troops forming the first wave of the assault began loading into the assault craft precisely one minute after midnight on 9 September. The 36<sup>th</sup> Division spearheaded the VI Corps

mission to secure the rail lines at Paestum and establish a defensive perimeter in the hills ten miles beyond the beaches.<sup>99</sup> The objective was to defend the right flank of the Fifth Army from Agropoli in the South to the Sele River marking the VI Corps northern boundary. The VI Corps received light resistance from German artillery and armor between D-Day and D plus 2, but the defenders did not stop the Allied assault. The 36th Division successfully established the VI Corps lodgment and secured the right flank enabling the reception of reinforcements and supply.

British X Corps landed forces along the beaches near Salerno to secure the port, the Montecorvino airfield, rail lines, and Highway 19 which provided the only reliable crossing of the Sele River. Ranger battalions landed north of Salerno and fought to secure the passes into the mountains of the Sorrento Peninsula. Ten Corps received naval gun support to prepare the beaches before the landing, but the Germans still conducted a more determined defense than at Paestum. The 16th Panzer Division mounted a vigorous assault against the 46th Division near Battaglia until a naval bombardment defeated the assault.<sup>100</sup> The X Corps secured most of their objectives by D plus two including a significant portion of Highway 19, the port of Salerno, and the airfield at Montecorvino. The amphibious assault appeared to have successfully secured a substantial lodgment for the Allies in Italy. By the evening of 10 September, Fifth Army forces downloaded 80 percent of D-day assault ship cargo on the beaches between Salerno and Paestum. The conditions on the beach appeared so favorable that the Northwest African Tactical Air Force Headquarters recommended reducing land-based fighter support, and a naval support group began preliminary inspections on the port facilities to open it for Allied shipping.<sup>101</sup>

The greatest threat to the Fifth Army successfully holding its lodgment area was a counter-attack by the German panzer divisions. Between the 12th and 14th of September, the 16th

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<sup>99</sup> Military Intelligence Division, *Salerno: American Operations*, 17-18.

<sup>100</sup> Fifth Army, *Fifth Army History*, 34.

<sup>101</sup> Blumenson, *Salerno to Cassino*, 101-102.

Panzer Division, reinforced by the Herman Goering Division, mounted a counter-attack on VI and X Corps positions north of the Sele River from the foothills of Mount Eboli. The German 26th and 29th Divisions reinforced the attack from the south, and the 2nd Luftwaffe provided aerial support. Kesselring's forces sought to drive the Allies back into the sea and allow German forces withdrawing from the toe time and space to maneuver out from between the advancing Eighth Army and the Fifth Army.<sup>102</sup> The German counterattack mounted the largest Luftwaffe offensive during the campaign. Over 120 fighters and fifty bombers flew sorties over the beaches and Gulf of Salerno battering Allied forces, including inflicting severe damage to USS *Savannah*, a light cruiser supporting the invasion.<sup>103</sup> The German attack successfully drove a wedge between the X Corps and VI Corps positions along the Sele-Calore salient northeast of Paestum.<sup>104</sup> The Germans inflicted heavy casualties and severely disrupted Allied efforts to rapidly develop the lodgment into basing operation capable of supporting an advance to Naples. As fate would have it, the Sele River which divided the Allied corps also created a natural barrier against the German advance toward the beaches of Paestum. The Germans lacked a reserve capable of sustaining the attack and withdrew to defend the passes in the Sorrento peninsula and delay an Allied advance toward Naples.

During the German counter-attack at Salerno, Eisenhower reported to the CCS and COS the AFHQ's immediate concern was how to reinforce the Fifth Army. The AFHQ prioritized all available assault shipping to transport the 3rd Division to support Clark's army at Salerno. Despite the gloomy prospects reported by Clark, Eisenhower remained optimistic. "In summary," he wrote, "the present situation is tense but not unexpected...Everything depends upon our ability

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<sup>102</sup> Military Intelligence Division, *Salerno: American Operations* 53; Fifth Army, *Fifth Army History*, 36.

<sup>103</sup> Fifth Army, *Fifth Army History*, 37-38; Blumenson, *Salerno to Cassino*, 102.

<sup>104</sup> Fifth Army, *Fifth Army History*, 39-40.

to build up our forces more rapidly than the enemy, and this again depends upon transportation.”<sup>105</sup> The Allies had allocated ninety transport ships and hundreds of landing craft to lift over 38,000 US troops and 3,200 vehicles of the VI Corps primarily from Oran to Italy and a similar allotment to transport X Corps troops and equipment from Sicily and North Africa.<sup>106</sup> The assault shipping to reinforce and build up Allied forces was present in the Mediterranean. The time, distance, and the capability to rapidly discharge cargo on shore before the ships could return to ports to resupply limited shipping availability.

The priority during the planning phase was to maximize combat power to conduct the assault and initial push up the Italian peninsula—a logical planning decision to maintain the initiative following the success in Sicily. Several logistical challenges resulted from this planning decision. The need to prioritize combat troops reduced the allocation of shipping to transport combat service units to operate shore and port activities, and move supply to the frontlines. For example, the 389th Port Battalion worked to discharge the assault convoy near Salerno. The total force of the 389th consisted of eighteen officers and 853 enlisted men. The unit conducted discharge operations along the entire beach frontage of the X Corps sector from the Sele River north to the port at Salerno. By 10 September, the 389th had successfully unloaded the cargo of 18 ships consisting of over 5,000 tons of supply and 1,600 vehicles.<sup>107</sup> The port in Salerno was insufficient to receive the bulk of supplies required to sustain two corps fighting a determined enemy. Thus, supply over the shore remained the primary means of transferring supply from ship to shore. The first additional port detachments to relieve engineer shore regiments of responsibility for discharging landing craft did not arrive until a detachment from the 6th Port and the 480th Port battalions, a segregated black battalion, arrived in theater ten days after the

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<sup>105</sup> Eisenhower, *The Papers of Dwight David Eisenhower*, 1414.

<sup>106</sup> Bykofsky and Larson, *The Transportation Corps*, 202.

<sup>107</sup> *Ibid.*, 202.

invasion began.<sup>108</sup> The limited number of service support personnel extended beyond port units to quartermaster, ordinance, other support units. The impact on operations to prioritize combat units over support units did not result in the efficiency desired by planners at the tactical level.

The service support troops on the beaches performed admirably during the opening days of the operations. Lieutenant Colonel Henry L. McGrath, commander of the 45th Ordnance Battalion, and troops from the 46th Ordnance Company transported ammunition by jeep and foot under heavy German fire across the beaches of Paestum. The ammunition resupplied US forces at defensive positions along the Sele River, which defeated the German attack on the 13 September.<sup>109</sup> Despite the herculean efforts of individuals like McGrath, and support organizations, such as the 389th Port Battalion and the 46th Ordnance Company, commanders removed combat troops from the front lines to conduct support operations. Moreover, combat soldiers carried heavy loads into the fight because of limited service units to transport supply on the battlefield. Colonel Richard L. Werner, 141st Infantry, in a report to 36th Division stated, “Riflemen...of this regiment carried either a mortar shell or a rocket gun grenade to augment the initial supply. Provisions must be made for the early resupply of these two types of munition.”<sup>110</sup> Persistent and deadly German opposition drove the military necessity to carry additional supplies. However, the additional loads carried by hand were the only source of resupply for many combat units. Most of the service support units efforts were to move material from assault ships to supply dumps to reduce targets of opportunity for German aircraft and artillery. The disorderly push from supply dumps to front-line troops limited resupply to small augmentations hand carried or moved in a limited number of support vehicles. This shortcoming nearly resulted in defeat for the Allies on the beaches.

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<sup>108</sup> Ibid., 204.

<sup>109</sup> Mayo, *The Ordnance Department*, 180.

<sup>110</sup> Colonel Richard J. Werner to Commanding General 36th Infantry Division, in *Conclusions Based on the “Avalanche” Operations*.

Enemy resistance, limited assault shipping, and small numbers of service support troops helped create the expected moment of tension Eisenhower reported to the CCS during the opening days of the campaign. Similar issues affected prior amphibious assaults in the Mediterranean. Both Operation Torch and Operation Husky suffered from disorganized and inefficient supply over the shore operations. Too few service support units to organize and distribute supplies to combat units. However, Operation Avalanche faced stiff German resistance, which the prior operations did not experience. The tactical level sustainment problems did not hamper the overall success of Operation Avalanche. By 1 October, over three weeks after the start of the operation, the 82nd Airborne Division moved into Naples to begin the process of securing the port.<sup>111</sup>

The operational level plan to provide support from base sections in North Africa to supply dumps and depots for distribution to frontline troops in Italy succeeded. The Allies pushed the 16th Panzer and Herman Goering divisions off the plains and high ground surrounding the Bay of Salerno. They continued to attack through the passes of the Sorrento Peninsula and finally capture the main operational objective—the port of Naples. The human cost was high. The final toll was over 2,000 Allied troops dead, and another 10,000 reported wounded or missing during the fighting.<sup>112</sup> By 13 October, the supply over the shore operations ceased, and the allies began to receive and distribute supplies from the port at Naples and smaller ports like Salerno to continue the push toward Rome. The operational sustainment plan was not perfect, but planners, soldiers, and commanders adapted to significant challenges created by German opposition and limited resourcing.

The German army did significant damage to the Italian road and port infrastructure, and German air and naval power, while significantly reduced, continued to harass transport ship

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<sup>111</sup> Blumenson, *Salerno to Cassino*, 165.

<sup>112</sup> *Ibid.*, 166.

convoys. The Germans conducted a scorched earth policy to deny Allies access to critical infrastructure and slow the 30-mile advance from Salerno to Naples. They emplaced artillery in the high ground, laid minefields, and blew bridges across waterways and gorges. At Olevano, northeast of Salerno, the Germans blew the only bridge crossing a 60-foot-deep gorge.<sup>113</sup> The bridge's demolition forced Allied engineers to build pontoon crossing under the withering fire of defending Germany artillery. The worst destruction of infrastructure occurred at the port of Naples. The Germans scuttled the *Rex*, a large luxury liner, at the port's primary pier and several Italian naval ships in the harbor to block access to the port. They also dynamited and blew up the port's buildings and crane equipment. The destruction left only three deepwater berths capable of receiving Liberty class ships, the largest transport ship in the navy, in functioning condition.<sup>114</sup> The effort to maximize the efficiency of transporting supplies from base sections in North Africa to Italy relied on consolidating large sustainment pushes on only a few ships. The expectation was that the port at Naples would facilitate a quick turnaround time between base sections. The actions of the German army augmented limited Kriegsmarine and Luftwaffe attacks on Allied sea lines of communications to disrupt and slow supply and reinforcements arriving in Italy.

Germany continued to contest both ground and sea operations throughout Operation Avalanche even as the Allies gained a decisive advantage of air and naval forces in the Mediterranean Theater. The Luftwaffe lost its air superiority over Italy but maintained enough combat power to conduct harassing raids on Allied shipping. In the Tyrrhenian Sea off Italy's west coast, German U-boats struck the merchant ship *Gherard* with torpedoes. The *Gherard* caught fire and sank on 21 September. The ship's cargo consisted of ammunition, fuel, and replacement parts. Niblo reported the lost constituted "all, repeat all, Ordnance Class II supplies to support operation Avalanche." The replacement shipment of repair parts did not arrive at

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<sup>113</sup> Military Intelligence Division, *Salerno: American Operations*, 82-83.

<sup>114</sup> Bykofsky and Larson, *The Transportation Corps*, 204.

Naples until 1 December.<sup>115</sup> The loss of a single merchant transport resulted in a three-month delay in receiving parts from the US for mechanics waiting to repair broken tanks, trucks, and artillery in Italy. While certainly an unplanned outcome on the part of the Germans, the desire to maximize efficiency had catastrophic effects. The Allies applied lessons learned during Operation Avalanche to the planning of future operations, such as Overlord. The Germans planned to destroy road and port facilities to slow an Anglo-American advance, and the inefficiency of distributing resources across multiple transport ships reduces exposure to unnecessary risks.

It took six months to fully repair the port of Naples and make it a major port in the European Theater. The Corp of Engineers restored port, road, and rail infrastructure with service supported troops and contracted Italian labor. The port achieved a maximum cargo distribution of over 33,000 long tons using truck and rail transportation by April 1944.<sup>116</sup> Naples functioned as the Peninsula Base Section HQ into 1944 before moving north following the capture of Rome. The success of Operation Avalanche did not portend a long war of attrition in Italy. The initial success in Italy secured a base of operations and knocked Italy out of the war, but the Allies' Italian campaign never succeeded in driving the Germans out of Italy. However, the Allies did succeed in achieving the operational goal of securing the port of Naples to provide a base to support future combat operations in Italy. Following the success in Operation Husky, Operation Avalanche helped achieve the strategic objectives of eliminating Italy from the war and occupying significant German forces in Italy. The Italian Campaign did not ultimately result in defeating German forces in Italy, but it did advance the strategic aim to reduce Germany's capability to fight on the Eastern Front and northern France.

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<sup>115</sup> Colonel Niblo field report to Army Ground Forces, see Mayo, *The Ordnance Department*, 181-2.

<sup>116</sup> Bykofsky and Larson, *The Transportation Corps*, 207.

## Conclusion

Operation Avalanche succeeded in achieving Eisenhower's military objective to secure the port of Naples to provide basing to support combat operations in Italy. The operation also advanced the Allies strategic goals to eliminate Italy from the war, contain German forces in Italy, and secure the Mediterranean shipping lanes. Logistic planners anticipated and sustained large-scale operations in a rapidly evolving, dispersed, and heavily contested operational environment. The lens of operational art provides understanding into the role operational level planning plays to link strategic aims to tactical execution. Operation Avalanche achieved remarkable success despite competing interests which limited resources, a rapidly changing operational environment, and a determined adversary.

The plans for Operation Avalanche emerged from an evolving strategy and exploiting Allied success against Germany in the Mediterranean Theater. The United States and United Kingdom agreed to expand combat operations in the Mediterranean to achieve three strategic goals; defeat Italy, contain German forces in Italy, and secure shipping lanes. The Allies planned a series of operations to advance these goals by linking tactical level objectives in time, space, and purpose. Allied planners set conditions for an invasion of mainland Italy through a clear line of operation. Following Allied success in North Africa, Operation Husky seized and secured the ports and airfields in Sicily. The control of Sicily by US and British forces established secure sea lines of communication, basing to extend operational reach, and set conditions to compel Italy to surrender. The Allied success on Sicily and the removal of Mussolini from power created the circumstances necessary to maintain the initiative against Germany in Italy.

Operation Avalanche exploited these opportunities and secured an Allied foothold in Italy. The decision for the Fifth Army to invade near Salerno resulted from conditions necessary to support an amphibious assault. The basing in Sicily provided airfields to project land-based fighters to support the landing and secured lines of communication to transport troops, equipment, and supply from North Africa and Sicily. The Germans made a determined defense at

the beachhead but ultimately lacked the strength to prevent the Allies from establishing a lodgment. The lodgment provided the temporary basing required to buildup combat power and sustainment to conduct an offensive which ultimately secured the port of Naples on 1 October 1943.

The Allied logisticians faced several challenges in planning and executing sustainment operations in the Mediterranean. At the strategic level, the transportation of national resources from the US to the Mediterranean used long, dangerous shipping lanes and sustaining multiple theaters strained limited shipping assets. A network of base sections and depots provided the continuity to distribute resources received from strategic sources to the frontline. The use of automatic resupply for fuel and requisition of munitions through estimates of consumption anticipated the requirements of combat operations. The combined effect allowed planners to economize the use of limited shipping assets to balance sustainment against the combat forces necessary to conduct offensive operations. The plan was not without faults. Prioritization of combat over support units reduced resupply and combat power because the lack of support units placed the burden of sustainment operations on combat units. Additionally, the consolidation of resupply into a few transport ships and depots exposed Allied supply to catastrophic loss during the most vulnerable stage of the operation – the establishment of the lodgment along Salerno Bay.

This study is an incomplete exploration of sustainment operations in the Mediterranean or during Operation Avalanche. However, the selected accounts highlight the value of operational art, elements of operational art, and principles of sustainment to understand sustainment planning for large-scale combat operations more fully. Sustainment planning needs to link tactical action with strategic aims within the constraints imposed on military operations, much as tactical planning needs to take sustainment into account. Examinations of large-scale combat operations, like Operation Avalanche, provide insight for commanders and planner to understand, visualize, and describe sustainment requirements and the employment of resources to achieve desired end states.

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